U.S. Department of Transportation
Federal Aviation Administration
Great Lakes Region
Chicago Airports District Office

Draft Environmental Assessment
Replace Runway 5/23

Waukegan National Airport, Waukegan, Illinois



Introduction

The Waukegan Port District in conjunction with the Illinois Department of Transportation (IDOT), Division of Aeronautics, proposes the construction of a replacement Runway 5/23 at the Waukegan National Airport. The development items included in this project are defined and listed in the Proposed Action portion of this draft environmental assessment (EA). This EA was prepared in accordance with the Federal Aviation Administration (FAA) FAA's Order 1050.1G, FAA National Environmental Policy Act Implementing Procedures and the US Department of Transportation's (DOT) Order 5610.1D, Procedures for Considering Environmental Impacts.

The FAA's proposed major federal action[1] includes the following:

- Issue an environmental finding to allow approval of the Airport Layout Plan (ALP) for the Proposed Action; the changes to the ALP include but are not limited to the shift of the runway centerline, runway ends, Runway Safety Area, Object Free Area, Runway Protection Zone, navigational aids, as well as an update to the Exhibit A Property Inventory Map, showing new property boundaries and avigation easements.
- Issue an environmental finding to allow for Federal funding under the Airport Improvement Program (AIP);
- Establishment of air traffic control and airspace management procedures designed to affect the safe and efficient movement of air traffic to and from the proposed runway as well as the airspace surrounding the airport;
- Establishment of flight procedures and associated modifications;
- Certification as to the safety of instrumentation, procedures, and airfield operations;
- Installation and/or relocation of navigational aids associated with the new relocated runway;
- Final certification that proposed aeronautical development is reasonably necessary for use in air commerce or for national defense (49 U.S.C. 44502(b); 14 CFR Part 169);
- Issue a finding for the DOT Order 5660.1A, Preservation of the Nation's Wetlands which implements Federal Executive Order 11990, Protection of Wetlands;
- Issue a finding for DOT Order 5650.2, Floodplain Management and Protection which implements Federal Executive Order 11988, Floodplain Management; and
- Issue a finding for 49 U.S.C., Section 303c, formerly Section 4(f) of the U.S. Department of Transportation Act of 1966.

[1] As defined in 42 U.S.C. 4336e(10)

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration, Great Lakes Region – Chicago Airports District Office

Notice of Availability, Notice of Public Comment Period, and Request for Comment on the Draft Environmental Assessment for Replace Runway 5/23 at Waukegan National Airport, Waukegan, Illinois.

The Federal Aviation Administration (FAA) provides notice that a Draft Environmental Assessment (EA), prepared pursuant to the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] §§ 4321–4355), to assess the replacement of runway 5/23 at Waukegan National Airport is available for review and comment.

The FAA's approval of this action is considered a major federal action under NEPA and requires a NEPA review. This Draft EA is submitted for review pursuant to NEPA, FAA Order 1050.1G, *FAA National Environmental Policy Act Implementing Procedures;* Section 4(f) of the Department of Transportation Act (49 U.S.C. §303), Section 7 of the Endangered Species Act (16 U.S.C. § 1531 et seq.) and Section 106 of the National Historic Preservation Act (16 U.S.C. § 470). The Draft EA will be available for a public review beginning on November 8, 2026, and ending on January 6, 2027.

The Draft EA is available for online review at:

https://waukeganairport.com/replacement-runway-project-information/

A copy of the document can also be viewed in person at the following locations:

Waukegan National Airport
2601 Plane Rest Drive
Waukegan, Illinois 60087

City of Waukegan
100 North Martin Luther King Jr. Avenue
Waukegan, IL 60085

Village of Beach Park
11270 West Wadsworth Road
Beach Park, IL 60099

City of Zion
2828 Sheridan Road
Zion, IL 60099

Village of Wadsworth
14155 West Wadsworth Road
Wadsworth, IL 60083

Comments on the Draft EA may be submitted electronically to Craig Louden at clouden@cmtengr.com. Written comments may be submitted via U.S. mail to the address below. Please ensure adequate time for receipt. All comments must be received by 4:00 p.m. Central Time on January 6, 2027.

Craig Louden
Crawford, Murphy & Tilly, Inc.
550 North Commons Drive, Suite 116
Aurora, IL 60087

All substantive comments received will be responded to in the Final EA.

Privacy Notice: Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

This Draft EA becomes a federal document when evaluated, signed, and dated by the Responsible FAA Official.

Responsible FAA Official Signature:

_____ Date: _____

Project Location:

Airport Name:	Waukegan National Airport			Airport Identifier:	KUGN
Address:	2601 Plane Rest Drive				
City:	Waukegan	County:	Lake	State:	IL

Airport Sponsor Information:

Point of Contact:	Skip Goss, General Manager				
Address:	2601 Plane Rest Drive				
City:	Waukegan	State:	IL	Zip Code:	60087
Telephone Number:	847-244-0055				
Email:	sgoss@waukeganport.com				

EA Preparer Information:

Point of Contact:	Craig Louden, Crawford, Murphy & Tilly, Inc.				
Address:	550 North Commons Drive, Suite 116				
City:	Aurora	State:	IL	Zip Code:	60504
Telephone Number:	630-907-7050				
Email:	clouden@cmtengr.com				

Attachments to this EA:

Include aerial photos, maps, plans, correspondence, and completed studies (or executive summaries)

Exhibit 1 - Location Map
Exhibit 2 - Vicinity Map
Exhibit 3 - Existing Airport Layout Plan
Exhibit 4 - Proposed Action
Exhibit 5 - Proposed Action - Runway 5 End
Exhibit 6 - Proposed Action - Runway 23 End
Appendix A - Aviation Emissions and Air Quality
Appendix B - Ecological Resources
Appendix C - Section 4(f)
Appendix D - Cultural Resources
Appendix E - Runway 5/23 Forecast Working Paper and Approval Letter
Appendix F - Aircraft Noise
Appendix G – Coastal Consistency Determination

Part I - General Project Identification

PURPOSE AND NEED:

Describe the problem that the project will address and the goals of the project.

The purpose of this project is to provide a primary runway and associated airfield improvements that comply with FAA design standards at Waukegan National Airport (UGN). The need for the project is driven by the following non-compliant features of the existing Runway 5/23:

Runway Safety Areas

The FAA defines a Runway Safety Area (RSA) as a defined surface surrounding the runway that is prepared, or suitable, for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. According to FAA design standards [presented in FAA Advisory Circular 150/5300-13B Airport Design (13B)], the RSA beyond the existing runway ends for Runway 5/23 is required to be 500 feet by 1,000 feet. Illinois Route 131 (Green Bay Road) penetrates the RSA for the approach end of Runway 5, leaving 492 feet of full-width RSA. Wadsworth Road penetrates the RSA for the approach end of Runway 23, leaving 449 feet of full-width RSA.

Runway – Taxiway Separation

For Runway 5/23 at UGN, 13B states that the separation between the centerlines of Runway 5/23 and the parallel taxiway, Taxiway A, is required to be 400 feet. In the existing condition, Runway 5/23 and Taxiway A are separated by 325 feet, less than the 400-foot minimum specified by FAA criteria.

Runway Longitudinal Profile

Per 13B, the runway gradient cannot exceed 0.8% and should be between 0.0% and 0.8% in the end quarter of the runway or 2,500 feet, whichever is less. In the case of UGN, the end quarter of the runway is 1,500 feet. The first 1,000 feet of Runway 5, at the west end of the runway, is sloped at 1.2%, which is not compliant with 13B requirements for longitudinal slopes.

A comparison of the existing non-compliant features of the existing Runway 5/23 and the appropriate FAA design criteria are summarized in the table below. Note that the project purpose is not to increase airport capacity, but to address these existing design deficiencies.

UGN Airfield Facilities		
Existing Runway 5/23		**RDC C-III Runway Design Standards***
Length of Full Width Runway Safety Area (RSA)		
Runway 5 end	492’ due to Green Bay Road	1000’
Runway 23 end	449’ due to Wadsworth Road	1000’
Runway Object Free Area (ROFA)		
Runway 5 end	Green Bay Road within 1000’	1000’
Runway 23 end	Wadsworth Road within 1000’	1000’
Runway-Taxiway Separation		
5/23 centerline to parallel Taxiway A	325’	400’
Runway Gradient (%)		
Longitudinal grade for end quarter of runway	1.2%	0% -0.8%

*FAA Advisory Circular 150/5300-13B Airport Design, Change 1

Project Background
Prior to 2025, the FAA approved forecast, designated critical aircraft and the FAA design criteria resulted in justification of a 7,000 foot replacement runway at UGN. Many of the technical studies completed before this time were based on a larger project footprint to accommodate the longer proposed runway. The current FAA approved forecast identifies the need for a 6,000 foot runway at UGN. As a result, some of the studies completed earlier in the planning process may have evaluated a larger project area. The impacts described in this EA are based on the 6,000 foot replacement runway, as identified in the Runway 5/23 Forecast Working Paper and FAA Approval Letter provided in Appendix E.

PROPOSED ACTION (PREFERRED ALTERNATIVE):

Describe the preferred alternative in detail, including how the project fits into the airport layout plan.

The Proposed Action includes the following safety and operational improvements to meet the established purpose and need, and is depicted on Exhibits 4 through 6 on pages 46 to 48:

1. Construct Replacement Runway 5/23

- Build a new replacement for Runway 5/23 that currently measures 6,000 feet in length and 150 feet in width. The replacement runway would be the same dimensions as the existing runway but relocated 400 feet from centerline-to-centerline northwest of the existing Runway 5/23, with a pavement strength of 120,000 pounds dual wheel load.
- Construct a roadway tunnel allowing for replacement Runway 5/23 to be constructed over Illinois Route 131-Green Bay Road. The tunnel includes the installation of a pump station (with primary and stand-by power), a fire protection standpipe system and traffic, management of lighting and tunnel ventilation. Illinois Route 131/Green Bay Road and ancillary surface transportation improvements (such as a planned shared use path) will be constructed through the tunnel by the Illinois Department of Transportation.[2]
- Install High Intensity Runway Lights on replacement Runway 5/23
- Install Precision Approach Path Indicators for replacement Runway 5/23 thresholds
- Paint precision instrument pavement markings on replacement Runway 5/23
- Install a Localizer Antenna Array* 1,000 feet beyond the replacement Runway 5 threshold
- Install a Glide Slope Antenna* approximately 1,000 feet from the Replacement Runway 23 landing threshold
- Co-locate a Runway Visual Range* and Automated Surface Observation System (ASOS)* with the previously discussed Glide Slope Antenna*
- Install Medium Intensity Approach Light System-Runway Alignment Indicator Lights (MALSR)* beyond the replacement Runway 23 threshold
- Install Runway End Identifier Lights (REILS) beyond the replacement threshold of Runway 5.
- Establish a Precision Standard Instrument Approach Procedure to the replacement Runway 23 threshold and a Non-Precision Standard Instrument Approach Procedure to the replacement Runway 5 threshold, in coordination with FAA

2. Decommission Existing Runway 5/23 and Navigational Aids (NAVAIDS)

- Decommission Runway 5/23

[2] Illinois Department of Transportation (IDOT), Illinois Route 131-Russell Road to Sunset Avenue-Lake County, Illinois-ENVIRONMENTAL ASSESSMENT, October 17, 2017. The IDOT EA evaluated the environmental impacts on Illinois Route 131 which include the proposed improvements to Green Bay Road, which is an independent project that would proceed with or without the Proposed Action at Waukegan National Airport discussed in this EA.

- Decommission the existing Glide Slope Antenna* and Automated Surface Observation System*
- Decommission the Runway 5 Runway End Identifier Lights (REILS)
- Decommission the Runway 23 Medium Intensity Approach Light System-Runway Alignment Indicator Lights (MALSR)*
- Decommission the Runway 5 and Runway 23 Visual Approach Slope Indicator*

*Denotes FAA owned facilities. For all of the FAA owned equipment that would be impacted, the Sponsor would work with the FAA via a reimbursable agreement to relocate or replace these facilities.

3. Convert Decommissioned Runway 5/23 into Taxiway A

- Repurpose former runway pavement into replacement Taxiway A. Remove approximately 1,200 feet of the decommissioned Runway 5/23, and decommissioned Taxiway A and remove Taxiways A7 and A8 pavement to the northeast
- Remove runway pavement to create a 50-foot-wide Taxiway A. Strengthen/reconstruct converted Taxiway A to meet pavement design strengths to serve aircraft using replacement Runway 5/23
- Extend new Taxiway A to the southwest to the new threshold of replacement Runway 5/23. This taxiway extension includes construction of a grade separation over Illinois Route 131/Green Bay Road
- Extend Taxiway D northeast from Taxiway C to replacement Runway 23 threshold.
- Extend Taxiway D southwest from Taxiway D2 to the midpoint of the replacement Runway 5/23
- Construct connecting Taxiway F from Taxiway D to Taxiway A
- Install Medium Intensity Taxiway Lights to serve the new replacement Taxiway A and Taxiway D pavements
- Remove existing Runway 5/23 High Intensity Runway Lights and install Medium Intensity Taxiway Lights on new Taxiway A
- Install Medium Intensity Taxiway Lights adjacent to all proposed taxiways

4. Connected Actions and Mitigation Measures

- Acquisition of approximately 17.62 acres of land in fee simple title and approximately 56.43 acres in avigation easements; includes the relocation of 16 residences
- Removal of approximately 27 acres of trees to construct the improvements and obstruction removal within the Runway Protection Zones and Airport Imaginary Surfaces
- Mitigation for impacts to approximately 9.69 acres of wetlands, and 1,052 linear feet of stream.
- Construct stormwater dry bottom detention basins as well as compensatory stormwater storage for impacts within the floodplain and floodway
- Modification to existing on-airport storm water detention facilities to reduce hazardous wildlife attractants
- Release (FAA Grant Assurance Number 31) of approximately 5.9 acres of Airport Property and transfer to the Illinois Department of Transportation (IDOT), Division of Highways, Region 1, District 1, for the construction of the realigned Illinois Route 131/Green Bay Road
- Permanent closure and vacation of portions of the following streets: West Townline Road, West Zephyr Street, West Center Street, West Suddard Street, North Adelphi Avenue, and West Dorothy Street.
- Construct a perimeter security and wildlife fence to enclose the entire airside operations at the Airport

OTHER ALTERNATIVES CONSIDERED:

Describe alternatives considered, including the Do-Nothing Alternative

No Action Alternative

Under the No Action Alternative, UGN would maintain its existing airfield infrastructure and runway configuration. The existing non-standard RSAs and ROFAs would remain, and as a result, FAA could require a reduction in the existing Runway 5/23's published length in order to comply with FAA safety design standards. This would also affect published standard instrument approach procedures and would adversely impact current Airport users. The existing non-standard runway to taxiway centerline separations also would be maintained which could lead toward the reduction or restriction of certain aircraft accessing specific taxiways due to opposite direction aircraft flow. Finally, the existing centerline profile of Runway 5/23 that does not meet FAA design criteria would remain. Because this alternative would not address any of the non-standard facilities at UGN, the No Action Alternative would not meet the project purpose and need.

Reconstruct Runway 5/23

This alternative includes reconstructing the existing primary runway to address the deficient gradient, relocating the taxiway to maintain the acceptable runway-taxiway separation distance and the incorporation of Engineered Materials Arresting Systems (EMAS) beds at both runway ends as a substitute for the non-compliant RSA and ROFA.

The reconstructed runway would be sloped at 0.8%, complying with FAA design criteria. This would require a significant portion of the existing runway and associated airfield taxiways, aprons and safety areas to be raised with the new profile matching back into the existing approximately 2,300 feet from the Runway 5 end.

Taxiway A would be relocated 75 feet and would also require relocation of Connecting Taxiways S1, S3 and E3 to comply with FAA design criteria prohibiting direct access from an apron to a runway. In addition, the taxiway relocation would impact operations on the South and East Ramps due to FAA taxiway to taxilane separation requirements. On the South Ramp, four tiedowns would require removal. On the East Ramp, all eight tiedowns on the northwest side of the apron would require removal.

The EMAS installation would require significant fill to raise the elevation of the RSA off the end of Runway 23, as it currently slopes significantly downward at approximately 3% - 5%. A retaining wall would also be necessary adjacent to existing Wadsworth Road to support the raised RSA.

While these three major elements of this alternative would be constructed in stages or concurrently in an attempt to minimize disruptions to airport users, the construction is expected to take a minimum of three construction seasons, with more possible, depending on funding availability. Runway 5/23 would require complete closure for the EMAS installation and runway reconstruction and re-profiling, as construction would be located within the Runway 5/23 RSA. A large portion of the taxiway relocation would also be located within the Runway 5/23 RSA, again requiring runway closures.

While this alternative would meet the purpose and need, the closure of Runway 5/23 for three or more construction seasons as described above would have significant impact to UGN's users and subsequently the airport. The closure of the airport would result in the loss of an estimated 80% of the airport revenue. Since UGN users would be required to temporarily relocate operations during runway closure periods, it is unlikely that all users would return upon completion of the program, resulting in the loss of based aircraft. Under the Proposed Action, no loss of based aircraft would be expected and the current airport revenue levels would be expected to remain stable during construction. While

detailed cost estimates for the Reconstruct Runway 5/23 alternative have not been prepared, it is expected that this alternative could cost 60%-80% of the Proposed Action. Based on the adverse impact to airport users and to the short and long term financial impacts to the airport, along with the cost in comparison to the Proposed Action, this alternative was eliminated from further consideration. This alternative will not be carried forward for further evaluation.

Explain in detail the reason for eliminating each non-preferred alternative.

Alternatives Carried Forward

No Action Alternative
The No Action Alternative does not meet the project purpose and need. However, FAA Order 1050.1G, prescribes the need to analyze and compare the No Action Alternative to the Proposed Action. Therefore, the No Action Alternative will be carried forward for further analysis in this Environmental Assessment.

6,000-Foot Replacement Runway (Proposed Action)
Construct a new replacement Runway 5/23 of 6,000 feet long and 150 feet wide. The replacement runway would be 400 feet from centerline-to-centerline northwest of the existing Runway 5/23 with a pavement strength of 164,000 pounds dual wheel load. Therefore, the 6,000-foot replacement runway alternative will be carried forward for further analysis in this Environmental Assessment.

AIRPORT DESCRIPTION:

Fill out the following information if the proposed project includes any changes to the existing airport design

	Existing		Relocated	
Runway Numeral:	5 / 23		5 / 23	
Length:	6000	ft.	6000	ft.
Width:	150	ft.	150	ft.
Pavement Strength:	95 (Single) 120 (Dual) 200 (Dual Tandem)		95 (Single) 120 (Dual) 200 (Dual Tandem)	
NAVAIDS:	VASI, REIL, LOC, GS, MALSR		VASI, REIL, LOC, GS, MALSR	Federally Owned: (Y) N
Approach Minimums:	ILS 23-200' & 0.5 mi. RNAV 5-300' & ¾ mi. RNAV 23-300' & ½ mi.		ILS 23-200' & 0.5 mi. RNAV 5-300' & ¾ mi. RNAV 23-300' & ½ mi.	
Critical Aircraft (e.g. B-II) :	C-III		C-III	
RPZ Area:	1,000' x 1,750' x 2,500'		1,000' x 1,750' x 2,500'	

If the airport has multiple runways, this section should be filled out for each runway.

Remarks: The Airport is located within the corporate limits of the City of Waukegan, in Lake County, Illinois. A map of the Airport within the State of Illinois and the vicinity of the Airport within the Waukegan area is depicted on Exhibits 1 and 2 (pages 43 to 44).

In operation since 1956, UGN is designated by the FAA as a "Reliever Airport".[3] to Chicago O'Hare International Airport (ORD). A reliever airport is defined by the Code of Federal Regulations (CFR) 14 CFR I.I §152.3 as an airport whose primary function is reducing air traffic congestion by accepting diverted air traffic from an air carrier airport. The UGN Airport serves the general aviation/corporate, military and cargo needs of northeastern Illinois and is a major contributor to the local economy. UGN has also been designated by the FAA as a "National Airport."[4] A National Airport is an airfield that is normally located in a metropolitan area near major business centers and serves aircraft operations both domestically and internationally. Many flights are by jet aircraft, including corporate and fractional ownership operations, air taxi services, and provide pilots with an alternative to busy primary commercial service airports such as ORD.

Currently, UGN has primary Runway 5/23, that is 6,000 feet long by 150 feet wide, and crosswind Runway 14/32, that is 3,750 feet long and 75 feet wide. Exhibit 3 depicts the location of the existing Airport facilities.

LAND ACQUISITION:

	Amount (acres)	
Land Use Types	**Permanent**	**Avigation Easement**
Residential	13.58	12.98
Commercial	0	17.7
Agricultural	1.77	0
Forest	1.22	15.9
Wetlands	1.05	9.85
Other:	0	0
TOTAL	17.62	56.43

Remarks: The land acquisition and avigation easement areas needed for the Proposed Action are shown on Exhibits 4 through 6. Several of the permanent acquisition and avigation easement properties are also Section 4(f) properties and the impacts are detailed in the Section 4(f) section below as well as in Appendix D.

PROJECT SCHEDULE:

Discuss the proposed schedule for the project, including permits and construction.

The Proposed Action would be initiated upon the FAA issuing a Decision Document for this EA and receipt of all required permits, certifications and commitments. The following table provides the approximate project schedule.

[3] https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/categories/
[4] https://www.faa.gov/airports/planning_capacity/ga_study/media/2012AssetReport.pdf

APPROXIMATE PROJECT SCHEDULE	
Activity	**Schedule**
Land Acquisition	January 2027 - March 2027
Completion of Perimeter Fence	March 2027 – December 2027
Construction of Relocated Runway 5/23	August 2027 - April 2029
Tree and Obstruction Removal	October 2027 – June 2028
Roadway Tunnel Construction	November 2027 - October 2029
Green Bay Road Improvements (by IDOT)	November 2028-October 2030
Construction of Parallel Taxiway Bridge	November 2028 - July 2030
Installation of Navigational Aids (NAVAIDS)	May 2029 – October 2029
Conversion of Existing Runway 5/23 to a Taxiway for the Relocated Runway	May 2029 – October 2029
Demolition of Existing Runway 5/23	May 2029 – October 2029
Construction of Extended Parallel Taxiway	November 2029 - July 2030

AFFECTED ENVIRONMENT:

Succinctly describe existing environmental conditions of the potentially affected area.

The Airport is located within the corporate limits of the City of Waukegan, in Lake County, Illinois, which is in the northern portion of the Chicago metropolitan area. Communities surrounding the airport include Waukegan, Beach Park, Wadsworth and Zion, Illinois. The Airport boundaries are within Illinois Route 131-Green Bay Road to the west, Wadsworth Road to the north, Lewis Avenue (including residential) to the east and York House Road (including residential) to the south. Land uses in the vicinity of the Airport area a mix of commercial, residential, agricultural and open space owned by the Lake County Forest Preserve District (LCFPD). An overview of the project area and its general location in Lake County are available on Exhibits 1 and 2 on pages 43 to 44.

The project area includes the proposed area of disturbance and encompasses approximately 17 acres of fee simple acquisition and 56 acres of avigation easements (see Exhibits 4 through 6 on pages 46 to 48). Avigation easements are property rights acquired to protect the safe and unobstructed use of navigable airspace by allowing the Airport Sponsor to restrict the height of structures and vegetation, remove or trim obstructions, and permit aircraft overflight above the affected property. The project area also includes the existing runways, taxiways, aprons, access roadways and navigation aids. The land proposed for acquisition and easements includes wetlands, forest, agricultural land, developed residential and commercial property and LCFPD owned property.

Between runways and taxiways, grass is mowed to a height of 6 to 12 inches to minimize wildlife attractants and habitat structure in compliance with FAA AC 150/5200-33C, Hazardous Wildlife Attractants on or near Airports and FAA CertAlert No. 98-05, Grasses Attractive to Hazardous Wildlife.

A brief summary of the affected environment for the resources evaluated in this Environmental Assessment is provided below; a full discussion of the impacts to the affected environment is provided in the environmental consequences section of this document.

Aviation Emissions and Air Quality: The National Ambient Air Quality Standards are limits on outdoor air pollutants set by the U.S. Environmental Protection Agency (EPA) under the Clean Air Act (CAA). The General Conformity Rule of the CAA prohibits Federal agencies (including the FAA) from permitting or funding non-highway projects that do not conform to a State Implementation Plan (SIP). Lake County is designated by the EPA as a “serious” nonattainment area for the 2015 8-hour ozone (O_3) National Ambient Air Quality Standard (NAAQS) and as a maintenance area for the 2008 8-hour O_3 NAAQS.

Biological Resources: Biological resources refers to various types of flora and fauna, as well as habitat types that would support these species. This section also addresses Federally listed and state listed threatened or endangered species and their habitats.

Section 7 of the *Endangered Species Act of 1973* requires each Federal agency that carries out, permits, licenses, funds, or otherwise authorizes activities that may affect a listed species must consult with the US Fish and Wildlife Service (USFWS) to ensure that its actions are not likely to jeopardize the continued existence of any listed species.[5] Species listed as threatened or endangered in the state of Illinois are also protected under the *Illinois Endangered Species Protection Act of 1972.*

According to the USFWS Information for Planning and Consultation (IPaC) species list generated for the project area, the project is located within the known or historical range of the several federally listed species, as well as being within the High Potential Zone for the Rusty Patched Bumblebee, a federally endangered species. No critical habitat for federally threatened or endangered species is located within the project area.

Coastal Resources: Coastal resources include all natural resources occurring within coastal waters and their adjacent shorelands. Coastal resources include islands, transitional and intertidal areas, salt marshes, wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as fish and wildlife and their respective habitats within these areas. Coastal resources include the coastlines of the Atlantic and Pacific oceans, the Great Lakes, and the Gulf of Mexico.

The Illinois Coastal Management Program (ICMP),[6] under the direction of the Illinois Department of Natural Resources, (IDNR) Office of Coastal Management, protects and manages the natural and cultural resources along the state's 63-mile stretch of Lake Michigan shoreline.

The coastal zone boundary for the ICMP defines the land and water areas that are within the limits of this program.

UGN is located within an Illinois Coastal Zone Boundary.

Department of Transportation Act Section 303 - Section 4(f): The FAA is required by 49 U.S.C. § 303. (previously codified under DOT “Section 4(f)”) to avoid impacts to park and recreation lands, wildlife and waterfowl refuges, and historic sites, and to minimize impacts where avoidance is impossible.

Two Section 4(f) properties are within the project area – Greg Petry SportsPark owned by the Waukegan Park District and the Waukegan Savanna, owned by the Lake County Forest Preserve District.

Land and Water Conservation: Section 6(f) of the Land and Water Conservation Fund (LWCF)[7] requires properties funded through the program remain available for public outdoor recreation use or be replaced by lands of equal value, location, and recreation usefulness. National Park Service approval is required to convert Section 6(f) properties in whole or in part to uses other than public outdoor recreation. There are no Land and Water Conservation Fund (LWCF) properties near UGN.

Farmlands: The project area is identified as an “urbanized area” on the 2024 U.S. Census Bureau Map and therefore does not contain land subject to the Farmland Protection Policy Act.

Hazardous Materials, Solid Waste, and Pollution Prevention: A total of 10 facilities currently report to the USEPA under the RCRA that are located on airport property. All these facilities are small quantity

[5] Section 7(a)(2) of the Endangered Species Act of 1973.
[6] https://www.dnr.illinois.gov/cmp/Pages/default.aspx
[7] 54 U.S.C. § 200305(f)(3)

generators, and none show reported compliance issues. There is also a closed landfill on airport property, located on the east side of the airport north of West Beach Road and adjacent to Oak Crest School. UGN does not train personnel nor use per fluoroalkyl and/or polyfluoroalkyl substances (PFAS) in fighting petroleum-based fires at the airfield.

Historical, Architectural, Archeological, and Cultural Resources: Cultural resources encompass a range of sites, properties, and physical resources relating to human activities, society, and cultural institutions. Such resources include past and present expressions of human culture and history in the physical environment, such as prehistoric and historic archaeological sites, structures, objects, and districts that are considered important to a culture or community.

Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. § 306108) requires federal agencies to consider the effects of their undertakings on properties listed or eligible for listing in the National Register of Historic Places (NRHP). This includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that meets the NRHP criteria. Regulations related to this process are contained in 36 CFR Part 800, Protection of Historic Properties. Compliance with Section 106 requires consultation with the SHPO and applicable other parties, including Indian tribes.

Major steps in the Section 106 process include identifying the Area of Potential Effects (APE), identifying historic and cultural resources within the APE, consulting with the SHPO and Tribal Historic Preservation Officers for tribes that are identified as potentially having traditional cultural interests in the area, and determining the potential effects on historic properties as a result of the action. The APE is “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties,” if any such properties exist. The APE for the Proposed Action was identified as the limits of the disturbance, which has been defined as the project area limits on Exhibit 4 on page 46.

There are no known historical, architectural, archeological or cultural resources on UGN.

Land Use: The existing UGN airfield is located within the corporate limits of the City of Waukegan. The City of Waukegan’s Zoning District Map, shows UGN as zoned as Restricted Industrial. Residential, Community Shopping zoned land uses surround the airport within the City. The majority of UGN is surrounded by Beach Park with the surrounding areas zoned as residential, business district, commercial service district and restricted office district. The Waukegan Savanna, owned by the LCFPD, is located just to the southwest of the airport. This 774-acre open space is a publicly owned park resource made up of agriculture fields, oak woodlands, open fields with native prairie plants, and various water features.

Natural Resources and Energy Supply: Demands for energy required to operate facilities at UGN include electricity and natural gas. Electricity is the primary source of energy used to light the runways and taxiways and cool the airport buildings and related structures. Commonwealth Edison is the major supplier of electricity to the Airport and North Shore Gas is the natural gas supplier. The City of Waukegan provides storm, sanitary and water to the Airport and the surrounding area.

Noise and Noise Compatible Land Use: FAA Order 1050.1G, Appendix C identifies the requirements the compatibility of land use with various aircraft noise levels measured using the day-night average sound level (DNL) metric. These guidelines show the compatibility parameters for residential, public

(schools, churches, nursing homes, hospitals, parks, and libraries), commercial, institutional, and recreational land uses. All land uses exposed to noise levels below the DNL 65 DNL noise contour are generally considered compatible with airport operations. The study area for the noise analysis affected environment is the area within the DNL 65 dB noise contour, which is limited to airport property.

Socioeconomics and Children's Health and Safety Risks: FAA is required to evaluate a project's effects on the social and economic characteristics of affected communities, specifically evaluating shifts in population, public service demands, roadway capacity, businesses, and economics. As noted in FAA Order 1050.1G, if acquisition of property or displacement of persons is involved, then 49 CFR Part 24, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970[8] (Uniform Act), must be implemented. Children's environmental health and safety risks are defined as risks to health or safety that are attributable to products or substances that a child is likely to come in contact with or ingest.

The tables below present demographic characteristics for the affected environment based on available geographic data from the U.S Census.9 Because census geographies are used, the affected environment for this analysis differs from the project study area discussed in other sections. The affected environment for this analysis includes the census blocks, block groups and tracts that are wholly or partially within the project study area. These census geographic areas were selected for the affected environment because they represent the smallest geographical unit available in the U.S. Census data, including both the 2020 Decennial Census and the 2015-2019 5-year American Community Survey, for each characteristic examined.

Each census geography has limitations. The census block groups, and census tracts extend outside the project study area, thus including areas that could obscure the characteristics of the population within the affected area. The census blocks represent the affected area with only slight geographical overrun, but the Census Bureau makes privacy-related changes to this detailed data that may result in mischaracterization of the population within a given census block. Because the census blocks, block groups and tracts that comprise the affected environment cover a larger area than the specific project limits, the data presented in the tables represent a population slightly to moderately larger than that present within the project study area.

[8] Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 4601et seq.) (PL 91-528 amended by the Surface Transportation and Uniform Relocation Act Amendments of 1987, PL 100-117).
[9] U.S. Census website: https://www.census.gov/data.html

Demographic Data, Population Characteristics					
GEOGRAPHIC AREA	TOTAL POPULATION	MINORITY		UNDER 18 YEARS	
	NUMBER	NUMBER	%	NUMBER	%
Affected Area					
Tract 8604 Block Group 1	2,967			685	23.1%
Block 1006	43	24	55.8%		
Block 1007	56	24	42.9%		
Block 1009	114	52	45.6%		
Tract 8604 Block Group 3	1,480			310	20.9%
Block 3009	84	49	58.3%		
Block 3010	4	2	50.0%		
Block 3025	7	7	100.0%		
Block 3032	66	33	50.0%		
Block 3039	9	9	100.0%		
Block 3040	22	12	54.5%		
Block 3042	39	20	51.3%		
Block 3043	39	22	56.4%		
Block 3050	5	5	100.0%		
Tract 8615.07 Block Group 2	1,235			299	24.2%
Block 2000	16	5	31.3%		
Block 2006	21	10	47.6%		
Tract 8619.01 Block Group 1	1,351			303	22.4%
Block 1002	6	6	100.0%		
Block 1005	37	29	78.4%		
Block 1007	35	20	57.1%		
Block 1009	39	16	41.0%		
Tract 8619.01 Block Group 2	859			204	23.7%
Block 2001	2	2	100.0%		
Block 2002	71	35	49.3%		
Tract 8660 Block Group 3	1,118			173	15.5%
Block 3015	8	1	12.5%		
Affected Area Combined Blocks	680	359	52.8%		
Affected Area Combined Block	9,010			1,974	21.9%
Reference Community					
Village of Beach Park	14,249	8,793	61.7%	3,339	23.4%
City of Waukegan	89,321	75,318	84.3%	23,483	26.3%
Combined Reference Community	103,570	84,111	81.2%	26,822	25.9%

Source: U.S. Census, 2020 Decennial Census, DEC Redistricting Data. Only geographies with a non-zero population are shown.

Table 3-7: Demographic Data, Income Characteristics

GEOGRAPHIC AREA	TOTAL POPULATION	BELOW POVERTY LEVEL		TOTAL HOUSEHOLDS	RECEIVING FOOD ASSISTANCE	
	NUMBER	NUMBER	%	NUMBER	NUMBER	%
Affected Area						
Census Tract 8604	5,739	586	10.2%	2,034	335	16.5%
Census Tract 8615.07	3,054	404	13.2%	996	111	11.1%
Census Tract 8619.01	3,245	322	9.9%	1,187	115	9.7%
Census Tract 8660	6,690	281	4.2%	2,463	146	5.9%
Affected Area Comb.	18,728	1,593	8.5%	6,680	707	10.6%
Reference Community						
City of Waukegan	85,428	15,026	17.6%	29,441	5,617	19.1%
Village of Beach Park	13,130	1,429	10.9%	4,527	823	18.2%
Combined Reference	98,558	16,455	16.7%	33,968	6,440	19.0%

Visual Effects (Including Light Emissions): Visual resources include buildings, sites, traditional cultural properties, and other natural or manmade landscape features that are visually important or have unique characteristics. Light emissions include any light that emanates from a light source into the surrounding environment. Examples of sources of light emissions include airfield and apron flood lighting, navigational aids, terminal lighting, parking facility lighting, and roadway lighting.

Wetlands: Wetlands can be federally jurisdictional (waters of the United States) or isolated. Isolated wetlands are those that are not directly hydraulically connected to other waters of the United States. Waters of the U.S. (WOTUS) are regulated under Section 404 and 401 of the Clean Water Act. Isolated wetlands in Lake County are regulated by the Lake County Stormwater Management Commission. The Illinois Department of Natural Resources (IDNR) has wetland regulatory authority under the Interagency Wetlands Policy Act of 1989 (IWPA). The act specifies mitigation ratios in Illinois Administrative Code 1090.50 (c) (8) which are coordinated between the IDOT and IDNR in accordance with the Natural Resource Review and Coordination Agreement (January 1996). A total of 19.49 acres of wetlands and over 1000 linear feet of stream are present in the project area.

Floodplains: Regulatory floodplains are those with a designated 100-year floodplain that are mapped on National Flood Insurance Rate Maps by the Federal Emergency Management Agency (FEMA). The 100-year floodplain is typically defined as the area subject to a 1% annual chance flood. Transportation projects that are built within a regulatory floodplain must be reviewed under Executive Order 11988 to make sure they do not increase flood risks or negatively affect floodplain functions.

Portions of UGN are located within the 100-year floodplain.

Surface Waters, Groundwater and Wild and Scenic Rivers: UGN is located within two major watersheds, with the Lake Michigan watershed to the east and the Des Plaines River watershed to the west. Green Bay Road generally marks the drainage divide between the two watersheds. UGN

currently controls stormwater pollution through BMPs specified in a Spill Prevention Control and Countermeasure (SPCC) Plan, and a Stormwater Pollution Prevention Plan (SWPPP). The implementation of these ensure compliance with Federal and state water quality regulations and contain specific operational and facility management actions to prevent and control the potential for discharge of pollutants into surface waters and groundwater within existing operational areas of the airport.

The Wild and Scenic Rivers Act protects rivers with exceptionally natural, cultural, and recreational values. Section 7 of the Wild and Scenic Rivers Act prohibits Federal assistance to projects which would depreciate the value of a designated wild or scenic river. No wild or scenic rivers exist within the proposed project area.

Part II – Environmental Consequences

Aviation Emissions and Air Quality

	Yes	No
Is the project in an air quality nonattainment or maintenance area?	x	
If Yes, is the:		
Project listed on Presumed to Conform List		X
Project accounted for in State Implementation Plan	x	
Project emissions below applicable *de minimis* levels	x	
Does the project require an air quality analysis?	x	
Does the project require an air quality analysis for construction impacts?	x	

Remarks:

UGN is located in Lake County, Illinois, which is designated by the U.S. Environmental Protection Agency (EPA) as a "serious" nonattainment area for the 2015 8-hour ozone (O_3) National Ambient Air Quality Standard (NAAQS) and as a maintenance area for the 2008 8-hour O_3 NAAQS. Therefore, a General Conformity applicability analysis under the CAA was prepared (Appendix A). This analysis compares emissions of O_3 precursors—nitrogen oxides (NO_x) and volatile organic compounds (VOC)—against the CAA *de minimis* thresholds of 50 tons/year for NO_x and VOC. For disclosure purposes, to comply with NEPA requirements, emissions of carbon monoxide (CO), sulfur oxide (SO_x), and particulate matter (PM_{10}, $PM_{2.5}$) were also evaluated.

Construction emissions were estimated for a construction period starting in February 2027 and continuing through July 2030, using the Airport Construction Emissions Inventory Tool (ACEIT), and incorporating updated emission factors from EPA's Motor Vehicle Emission Simulator (MOVES, version 5) model. Sources inventoried were off-road construction equipment, on-road vehicles, and fugitives (i.e., evaporative and dust).

Operational emissions for the future years 2029 and 2034 were modeled using FAA's Aviation Environmental Design Tool (AEDT) and include aircraft, auxiliary power units (APUs), and ground support equipment (GSE). The AEDT data inputs developed for the air quality analysis were aligned with those used in the noise analysis and are based on forecasted operations and fleet mix from UGN's June 2025 Forecast Working Paper. Motor vehicle emissions were excluded from the air quality analysis, as no changes are expected due to the Proposed Action.

According to FAA Order 1050.1G, the significance threshold for aviation emissions and air quality area if the Proposed Action would cause pollutant concentrations to exceed one or more of the NAAQS, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.

The Proposed Action is not expected to cause significant air quality impacts as project-related NO_x and VOC emissions remain well below the applicable CAA General Conformity *de minimis* threshold of 50 tons/year. Thus, the Proposed Action is considered to conform to the applicable State Implementation Plan (SIP) and a formal conformity determination is not required.

Because the Proposed Action would not exceed the applicable CAA General Conformity *de minimis* thresholds, the Proposed Action's emissions are not anticipated to result in a significant impact on local air quality or cause or contribute to a violation of the NAAQS.

The table below provides the estimated construction and operational emission inventory results. The full Air Quality Assessment report detailing the methodology and results is provided in Appendix A.

CONSTRUCTION AND OPERATIONAL EMISSIONS (TONS PER YEAR)							
Year	**Source**	**CO**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**VOC**
2027	Construction	5.8	2.6	<0.1	12.1	1.3	0.5
2027 Total		***5.8***	***2.6***	***<0.1***	***12.1***	***1.3***	***0.5***
2028	Construction	10.4	3.3	<0.1	13.2	1.4	1.1
2028 Total		***10.4***	***3.3***	***<0.1***	***13.2***	***1.4***	***1.1***
2029	Construction	10.6	2.1	<0.1	13.2	1.4	1.6
	Operational	7.0	0.5	0.1	<0.1	<0.1	1.0
2029 Total		***17.6***	***2.6***	***0.2***	***13.2***	***1.4***	***2.6***
2030	Construction	3.9	0.9	<0.1	7.7	0.8	0.7
	Operational	7.1	0.5	0.1	<0.1	<0.1	1.0
2030 Total		***11.0***	***1.4***	***0.2***	***7.7***	***0.8***	***1.8***
2034	Operational	7.1	0.5	0.1	<0.1	<0.1	1.0
2034 Total		***7.1***	***0.5***	***0.1***	***<0.1***	***<0.1***	***1.0***
CAA De Minimis Thresholds		--	*50*	--	--	--	*50*
Exceeds De Minimis?		--	*No*	--	--	--	*No*

Notes: CO - Carbon Monoxide; VOC - Volatile Organic Compounds, NO_x - Nitrogen Oxides; SO_x - Sulfur Oxides; and $PM_{10/2.5}$ - Particulate Matter.
Operational emissions represent the difference between the Proposed Action and No Action (i.e., Proposed Action – No Action).
To be conservative, operational emissions for 2030 were assumed to be the same as 2034.
Totals may reflect rounding.

Source: CMT, September 2025.

Biological Resources (including fish, wildlife, and plants)

Biotic Resources

Describe the various types of flora (plants), fauna (fish, birds, reptiles, mammals, etc.), and habitat located in the project area. Indicate if the project will have any impact on these species or their habitat.

Remarks: The project area within the existing airport boundary includes airfield pavement, mowed turf grass, existing taxiways and some wetlands. This area has been disturbed by development of the airport, which has been in operation since approximately 1927. The portion of the study area located outside of the existing airport boundary includes wetlands, forest, agricultural land, developed residential and commercial property and Lake County Forest Preserve District owned property.

Threatened or Endangered Species	**Yes**	**No**
Is the project within the known range of any federal species?	X	
Does the project area contain any critical habitat?		X
Is Section 7 formal consultation required for this action?	X	
Are there any State threatened or endangered species in the area?	X	

Remarks: Prior to 2025, the FAA approved forecast, designated critical aircraft and the FAA design criteria resulted in justification of a 7,000-foot replacement runway at UGN. The Biological

Assessment (BA) described in this section was completed before this time and was based on a larger project footprint to accommodate the longer proposed runway. The current FAA approved forecast identifies the need for a 6,000-foot runway at UGN. The impacts described in this section are based on the Proposed Action which includes a 6,000-foot replacement runway.

According to the USFWS Information for Planning and Consultation (IPaC) species list generated for the project area (Appendix B), the project is located within the known or historical range of the following federally listed species:

- Northern Long-eared Bat (*Myotis septentrionalis*), endangered
- Red Knot (*Calidris canutus rufa*), threatened
- Eastern Massasauga (*Sistrurus catenatus*), threatened
- Pitcher's Thistle (*Cirsium pitcher*), threatened
- Eastern Prairie Fringed Orchid (*Platanthera leucophaea*), threatened
- Rusty Patched Bumble bee (*Bombus affinis*), endangered
- Whooping Crane (*Grus americana*), experimental population, non-essential*
- Monarch Butterfly (*Danaus plexippus*), proposed threatened*
- Western Regal Fritillary (*Argynnis idalia occidentalis*), proposed threatened*

* included only in the 2026 updated IPaC species list therefore not addressed in the BA

No critical habitat for federally threatened or endangered species is located within the project area.

The BA concluded that the Proposed Action would have no effect on the Northern long-eared bat, piping plover, red knot, Eastern massasauga, Karner blue butterfly, Pitcher's thistle, and the Eastern prairie fringed orchid (Appendix B-1). As part of the determination, surveys for the Eastern prairie fringed orchid and bat mist net surveys were conducted.

The BA identified that appropriate habitat for the rusty patched bumble bee (RPBB) was present within the Action Area. The Action Area is the area which might be affected by the Proposed Action and is assessed by a BA. The Action Area evaluated encompassed an area larger than the current project area as it was also assessing the potential impacts from Phase 5 of an airport security fence replacement program (covered under a separate NEPA action). This project will construct and replace other portions of the security fence not associated with the prior fence projects. A portion of the Action Area is located within the RPBB High Potential Zone (HPZ), and multiple HPZs for the RPBB are located within 10 km of UGN, therefore it is likely that the bee may be present and utilize habitat within the Proposed Action project area.

The USFWS divides rusty patched bumble bee habitat into nesting, overwintering and foraging habitats. Nesting habitat is typically found in undisturbed locations such as abandoned rodent burrows, grass tussocks, brush piles, or other sheltered areas that provide protection from disturbance. Overwintering habitat is generally located within forested areas, wooded edges, hedgerows, or similar natural features where the bee can remain dormant during winter. Foraging habitat consists of areas that provide flowering plants throughout the growing season, supplying nectar and pollen. High-quality foraging habitat typically includes prairies, wetlands, grasslands, old fields, rights-of-way, and other areas that support a diverse and continuous supply of nectar and pollen from native flowering plants.

Loss of habitat is the primary direct effect the Proposed Action is expected to have on the RPBB. Construction of the replacement runway taxiways, and tree clearing within the safety areas and runway protection zones would result in permanent conversion of foraging and nesting habitat to mowed turf-grass with compacted soil and an impermeable asphalt surface devoid of pollen and nectar resources. The BA reported that approximately 68% of existing potentially suitable bee habitat within the Action Area would be permanently lost as a result of the Proposed Action, of which 82.5% was considered low quality and 10.8% of medium-high quality. No overwintering habitat would be impacted by the Proposed Action. Considering the landscape context of the Action Area and the proximity of larger higher quality habitat complexes, the Proposed Action's removal of primarily low quality habitat would not be expected to rise to an adverse effect and is considered to be an insignificant and discountable effect.

The Proposed Action is also not expected to fragment bee habitat, and a number of mitigation measures would be incorporated (Appendix B-1 Section 5.1). The BA concluded that the Proposed Action may affect, but is not likely to adversely affect the RPBB. Through early coordination efforts, USFWS reviewed and provided input on the Biological Assessment and the indicated mitigation measures on May 17, 2023 (see email response in Appendix B-4: USFWS Correspondence). USFWS will review the Biological Assessment as part of the EA review and provide any additional recommendations or comments at that time.

Several changes have occurred since the completion of the BA in 2023. In July 2026, USFWS issued voluntary guidance to help USFWS, action agencies, and applicants carry out efficient and effective 7(a)(2) consultations and to plan and implement actions that would conserve the RPBB. The updated RPBB overwintering habitat definition provided in the 2026 updated guidance from USFWS[10] was reviewed to confirm that the conclusions of the BA are unchanged. The USFWS overwintering habitat definition has been refined to exclude forested areas with dense invasive plant understory cover and removal of overwintering as a likely use of forest edge habitat. Because the definition of overwintering habitat was very similar to the definition considered in the BA originally, no additional overwintering habitat impacts would occur and would likely be less as invaded woodland areas are no longer considered suitable overwintering habitat. In addition, since the completion of the BA, the Proposed Action was modified from a 7,000 foot runway to a 6,000 foot runway, resulting in fewer natural habitat impacts. Finally, three additional species are on the current IPaC list generated for the project area:

- **Whooping Crane:** The whooping crane (*Grus americana*) uses a variety of coastal and inland wetland and upland prairie habitats, including coastal marshes, lakes, sandflats, wet meadows, and open agricultural fields. This species uses the same type of habitat in all life stages; Illinois is expected to be utilized primarily as habitat during migration in the fall and spring, but use as breeding habitat in the summer is also possible. Habitat occurs sporadically throughout the Proposed Action area. Most habitat available is unlikely to be suitable due to the proximity of roadways, runways, taxiways and the noise associated with them. Based on the lack of high quality habitat, the lack of known records or observations in proximity to the Proposed Action, it is unlikely the whooping crane is utilizing habitat within the

[10] U.S. Fish and Wildlife Service (USFWS). 2026. Rusty Patched Bumble Bee (*Bombus affinis*) Endangered Species Act Section 7(a)(2) Voluntary Implementation Technical Assistance. Version 4. USFWS, Bloomington, MN. 47 pp + Appendices.

project limits, particularly for breeding. Therefore, the Action is not expected to jeopardize the whooping crane.

- **Monarch Butterfly:** On December 12, 2024, USFWS proposed to list the monarch butterfly (*Danaus plexippus*) as threatened under the Endangered Species Act. Adults forage on flowering plants in a variety of open habitats, and the larvae rely primarily on milkweed (*Asclepias* spp.) as host plants. Due to the monarch's long-distance migrations across Mexico and most of the continental United States, they can be found across a large and variable area from year to year, including both natural and developed areas. The highest quality habitat for this species includes open and mixed-cover prairies with large reliable populations of milkweed and other floral resources. Resident and migrating monarchs can be found in Illinois approximately March through October; they do not overwinter in northern states.
  While the Proposed Action would impact some wetland areas that contain appropriate habitat for the monarch butterfly, only approximately 1.7 acres of the wetlands that would be impacted are likely to provide the necessary diversity in nectar sources needed for the species. In addition, as documented in the BA, the area surrounding the airport provides larger higher quality habitat complexes for pollinator species. The mitigation measures proposed for the RPBB (detailed in Appendix B-1 Section 5.1) would also benefit the butterfly, as these species utilize similar foraging habitat. There is no confirmed high-quality larval habitat within the Proposed Action area. Based on the lack of known records or observations in proximity to the Action Area, it is unlikely the monarch butterfly is present within the project limits. Therefore, the Action is not expected to jeopardize the monarch butterfly.

- **Western Regal Fritillary**: On August 6, 2024, USFWS proposed to list the Western regal fritillary (*Argynnis idalia occidentalis*), as threatened under the Endangered Species Act. Western regal fritillary butterfly adults primarily forage in prairies and are strongly associated with large intact areas of tallgrass prairie (i.e. more than 120 acres), which provide continuous access to floral resources throughout the growing season. Adults may also use un-mowed fields and other open habitats such as wet meadows. Larvae rely on violets (*Viola* spp.) as host plants and require large populations of violets for the butterfly to maintain a viable population. This species requires large areas of foraging habitat because adults must have continuous access to foraging resources.

  While the Proposed Action would impact some wetland areas that contain appropriate habitat for the Western regal fritillary, only approximately 1.7 acres of the wetlands that would be impacted are likely to provide the necessary diversity in nectar sources needed for the species. In addition, as documented in the BA, the area surrounding the airport provides larger higher quality habitat complexes for pollinator species. The mitigation measures proposed for the RPBB (detailed in Appendix B-1 Section 5.1) would also benefit this species. There is no confirmed high-quality larval habitat within the Proposed Action. Based on the lack of known records or observations in proximity to the Action Area, it is unlikely the western regal fritillary is present within the project limits. Therefore, the Action is not expected to jeopardize the Western regal fritillary.

According to FAA Order 1050.1G, the significance threshold for biological resources is if the Proposed Action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would result in the destruction or adverse modification of federally designated critical habitat. As indicated in the discussion above, there is no designated critical habitat within the project area, and the Proposed Action is not likely to jeopardize any federally listed species.

According to the IDNR Ecological Compliance Assessment Tool (EcoCAT) review response dated October 28, 2026, a record of the state-listed RPBB is within the vicinity of the project (Appendix B-5). No other state-listed species or areas of concern were identified. As discussed above, RPBB habitat has been identified within the Action Area. The IDNR provided recommendations for avoiding impacts to the RPBB, including seasonal vegetation removal of foraging and overwintering habitat. If seasonal clearing can not be accommodated, the IDNR stated an Incidental Take Authorization pursuant to Part 1080 and Section 5.5 of the Illinois Endangered Species Protection Act will be required. The project is anticipated to adhere to seasonal vegetation removal as listed in the Conservation Measures presented in the BA (Appendix B-1 Section 5.1).

The Proposed Action is not expected to result in a long-term or permanent loss of unlisted or state listed plant or wildlife species, adverse impacts to special status species, substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; adverse impacts on a species' reproductive success rates, natural mortality rates, non-natural mortality (e.g., road kills and hunting), or ability to sustain the minimum population levels required for population maintenance.

Therefore, no significant impacts on federally or state listed species would result from the Proposed Action.

Coastal Resources

	Yes	No
Is the project located in a Coastal Barrier Resource System?		x
Is the project located in a Coastal Zone Management Program?	x	
If Yes, Is a consistency finding required?	x	

Remarks:

The Proposed Action includes the construction of a replacement Runway 5-23 within the Illinois Coastal Zone Boundary. The FAA must ensure that all development items of the Proposed Action, including FAA actions, must meet consistency requirements of the Illinois Coastal Management Program, to the extent practicable.

FAA determined that the proposed action would not negatively impact coastal use or resources and that the proposed action complies with Illinois' approved coastal management program and would be conducted in a manner consistent with such policies. On May 1, 2026, IDNR concurred with the determination that the Proposed Action complies with the Illinois Coastal Management Program and would be conducted in a manner consistent with the program. The coastal consistency determination is provided in Appendix G.

According to FAA Order 1050.1G, FAA has not established a significance threshold for coastal resources. Prior FAA guidance indicated significant impacts on coastal resources may occur when a proposed action is inconsistent with the relevant state coastal zone management plan, impacts a coastal barrier resources system unit, pose an impact to coral

reef ecosystems, cause an unacceptable risk to human safety or property; or cause adverse impacts to the coastal environment that cannot be satisfactorily mitigated. UGN is not within a coastal barrier resource system, would result in no impact to a coral reef ecosystem, would not result in unacceptable risk to human safety or property or result in adverse impacts to the coastal environment that cannot be mitigated. Finally, through coordination with IDNR, the Proposed Action was determined to comply with the Illinois Coastal Management Program and would be conducted in a manner consistent with the program. Therefore, the Proposed Action would not result in a significant impact on coastal resources.

Department of Transportation Act Section 303 – Section 4(f)

Does the project area contain:	Yes	No
Publicly owned Park/Recreation Areas	X	
Wildlife and/or Waterfowl Refuges		X
Historic Properties		X

Completed Documentation			**FAA Approval**
Individual Section 4(f) Evaluation		X	
"De minimis" Impact	X		

Only to be used for the following circumstances:

- *Historic Properties: project includes No Adverse Effect Finding with SHPO/THPO concurrence*
- *Parks, Recreation Areas, or Wildlife/Waterfowl Refuges: project will not adversely affect activities, features, and attributes of the property and the official with jurisdiction concurs with the finding*

Refers to Section 4(f) of the Department of Transportation Act (now 49 USC § 303). Discuss De minimis impacts below. Individual Section 4(f) documentation must be separate Draft and Final documents.

Remarks:

Section 4(f) of the U.S. Department of Transportation Act protects publicly owned parks, recreation areas, wildlife and waterfowl refuges, and historic properties from transportation projects unless specific requirements are met. A *de minimis* impact is a very minor Section 4(f) use that does not adversely affect the property's protected qualities, while a *constructive use* is an indirect impact that is severe enough to substantially interfere with those protected qualities even without taking land from the property. Examples of constructive use may include substantial noise, vibration, visual, access, ecological, or other indirect effects that meaningfully reduce the property's ability to serve its intended protected purpose. For parks and recreational resources, the official with jurisdiction over the property must concur with the determination before it can be approved.

The Proposed Action requires acquisition and avigation easements of two Section 4(f) properties, as described in more detail below. The acquisition of the property to incorporate into a transportation facility as well as the establishment of avigation easements represents a Section 4(f) use. The avigation easements allow for the removal of vegetation that could be an obstruction to air navigation.

Waukegan Savanna Forest Preserve

As part of the Proposed Action, UGN proposes to acquire 18.3 acres of avigation easements and 0.25 acre in fee simple acquisition from the LCFPD. The land to be acquired from LCFPD is part of the Waukegan Savanna Forest Preserve. The portion of the preserve to be acquired in fee simple is forested. The portions on which avigation easements are to be established include forested, wetland, and agricultural land uses. A stream also flows through this portion of the Preserve. No portion of the property that would be acquired currently includes any existing or planned recreational improvements such as hiking trails,

the Waukegan Savanna Dog Sled Area, or the Waukegan Savanna Dog Park, as shown on the Conceptual Master Plan (see Appendix C).

Based on the scope of the proposed project and type of work, there would be no adverse effects to the protected recreational activities, features, or attributes associated with LCFPD and would therefore be a de minimis impact on the Waukegan Savanna Forest Preserve. The LCFPD passed a resolution on June 10, 2026 concurring with the de minimis impact determination (see Appendix C).

Greg Petry SportsPark
The Proposed Action includes the purchase of an avigation easement from the Greg Petry SportsPark, owned by the Waukegan Park District. The conveyance of the 3.69 acre avigation easement to UGN would not adversely affect the activities, features or attributes of the Section 4(f) property and are therefore considered a de minimis impact on the Waukegan Greg Petry SportPark. The Waukegan Park District concurred with the de minimis determination on November 5, 2025 (Appendix C).

Documentation of coordination with the LCFPD and the Waukegan Park District is provided in Appendix C.

Constructive Use: The Proposed Action would not result in a constructive use of Section 4(f) properties. Although the project would occur near Greg Petry SportsPark and Waukegan Savanna, the proximity effects associated with the Proposed Action would not substantially impair the protected activities, features, or attributes that qualify these properties for Section 4(f) protection. Access to the tree removal areas on the property would be limited temporarily during construction but the Proposed Action would not permanently prevent public access to these properties, would not substantially diminish recreational use or enjoyment, and would not result in severe noise, visual, ecological, or access-related effects that would rise to the level of substantial impairment. Therefore, no constructive use of Section 4(f) properties is anticipated.

According to FAA Order 1050.1G, the significance threshold for Section 4(f) resources is if the Proposed Action would involve more than a minimal physical use of a Section 4(f) resource or constitutes a “constructive use” based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished.

The proposed Section 4(f) use of the LCFPD and the Greg Petry Sports park have both been proposed to be a de minimus impact on Section 4(f) resources so no substantial impairment of the resource would occur. The release of this draft environmental assessment for public review and comment is intended to facilitate compliance with the public notice and comment solicitation requirements of Section 4(f).

Land and Water Conservation – Section 6(f)

	Yes	No
Are there areas acquired or improved with Land and Water Conservation Fund grant assistance?		X

Remarks: There are 80 LWCF properties within Lake County, Illinois. The nearest LWCF property is Yorkhouse Park, located approximately 0.66 mile southeast of the project area. There are no documented LWCF properties located within the project area so the Proposed Action would have no impact on LWCF properties.

Farmlands

	Yes	No
Will the project affect any Agricultural Lands?		X
Is there any Prime Farmland (per NRCS) in the project area?		X

NRCS-CPA-1006 Form score: NA

Remarks: Construction of the Proposed Action would not require the acquisition or conversion of farmland. Under 7 CFR Part 658.2(a) of the Farmland Protection Policy Act (FPPA), land that is committed to urban development is not subject to provisions of the FPPA. The project area is identified as an "urbanized area" on the 2024 U.S. Census Bureau Map and therefore does not contain land subject to the FPPA. The Proposed Action would have no impact on farmlands.

Hazardous Materials, Solid Waste, and Pollution Prevention

	Yes	No
Is there an Environmental Due Diligence Audit (EDDA) Phase I Report?		X
If Yes, is EDDA Phase II required/completed		
If Yes, is EDDA Phase III required/completed		
Does the project require the use of land that may be contaminated?		X
Will the proposed project generate solid waste?	X	
If Yes, are local disposal facilities capable of handling the additional waste?	X	

Remarks: A total of 10 facilities currently report to the U.S. Environmental Protection Agency (USEPA) under Resource Conservation and Recovery Act (RCRA) that are located on airport property. All these facilities are small quantity generators, and none show reported compliance issues. There is also a closed landfill on airport property, located on the east side of the airport north of West Beach Road and adjacent to Oak Crest School. The site is an inactive, licensed facility, occupying approximately 10 acres, but would not be impacted as part of the Proposed Action.

Based upon the review of Federal and State environmental regulatory agency databases and the observations recorded during a field inspection of the project area; no areas of concern show the potential to encounter hazardous materials or contaminated subsurface media within the proposed construction area.

Solid waste would be generated from the construction of the proposed runway and taxiway improvements; however, waste would be transported and disposed of as directed by the appropriate authorities. Typically, solid waste generated by airfield facilities (runways,

taxiways, and ramps) is not significant. A review of the 2018 Illinois Landfill Disposal Capacity Report indicated that any solid waste generated from construction is not anticipated to create capacity problems at the local landfill. Two landfills within Lake County (Countryside Landfill, Inc & GFL Zion Landfill) both show capacity to accept construction waste.

UGN currently uses a variety of hazardous materials, such as vehicle and aviation fuels and solvents, which could be released to the environment from a spill, ground support equipment accident, etc. The Airport addresses pollution prevention through stormwater management, proper storage and handling of hazardous materials, and best management practices for maintenance activities. UGN currently has an approved NPDES general permit and an airport-wide Storm Water Pollution Prevention Plan (SWPPP). During design, there would be a construction specific SWPPP that would be completed and approved prior to construction.

According to FAA Order 1050.1G, FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention. The Proposed Action does not have the potential to violate applicable Federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management; involve a contaminated site; produce appreciably larger quantities or more types of solid or hazardous waste; use a different method of waste collection, treatment, storage or disposal that would adversely impact the site, surroundings or affected community, or exceed state, Tribal or local capacity; or adversely affect human health and the environment, as related to the federal, state, Tribal or local laws or regulations regarding hazardous materials and/or solid waste management. Therefore, the Proposed Action would not result in a significant impact on hazardous waste, solid waste or pollution prevention.

Historical, Architectural, Archeological, and Cultural Resources

Results of Research

Eligible or Listed Resources Present:	Yes	No
Archaeology		X
History/Architecture		X

Project Effect	Yes	N/A	SHPO/FAA Approval Dates
No Historic Properties Affected	X		5/22/2020, 8/31/2020, 5/10/2022 and 1/15/2026
No Adverse Effect		X	
Adverse Effect		X	

Completed Documentation	Yes	N/A	SHPO/FAA Approval Dates
Historic Properties Short Report		X	
Historic Property Report		X	
Archaeological Records Check/ Review	X		
Archaeological Phase I Survey Report	X		
Archaeological Phase II Investigation Report		X	
Archaeological Phase III Data Recovery		X	
APE, Eligibility and Effect Determination		X	
Memorandum of Agreement		X	

Describe all efforts to document cultural resources using the categories outlined in the remarks box. Include any additional Section 106 work required, such as mitigation or deep trenching.

Remarks:

Prior to 2025, the FAA approved forecast, designated critical aircraft and the FAA design criteria resulted in justification of a 7,000 foot replacement runway at UGN. The established APE as well as the archaeology and historic property evaluations described in this section were completed before this time and were based on a larger project footprint to accommodate the longer proposed runway. The current FAA approved forecast identifies the need for a 6,000 foot runway at UGN. The impacts described in this section are based on the Proposed Action which includes a 6,000 foot replacement runway.

Archaeology:
The APE for archaeology has been defined as the Proposed Action project area limits (as shown on Figure 4 on page 45). A review of known archaeological resources was conducted by the Illinois State Archaeological Survey (ISAS). The ISAS review resulted in the identification of no known archaeological sites and the documentation of a land-use history dominated by development and ground disturbance. It is important to note that access was not available on all private properties during the initial archeological survey. On May 22, 2020, the Illinois State Historic Preservation Office (SHPO) concurred with a finding of *Conditional No Adverse Effect* for archaeological resources, provided that field surveys were completed when access to the identified parcels can be secured, and the results are coordinated with SHPO. In 2022, access for the additional properties was provided and ISAS completed the additional field surveys and report and one archaeological site was identified, but it was determined to not be eligible for the National Register of Historic Places. Upon review of the survey report, FAA made a finding of *No Historic Properties Affected* on April 26, 2022, and SHPO concurred on May 10, 2022 (Appendix D).

Historic Properties:
The APE for Historic Properties has been defined as the properties within the Proposed Action project area limits (as shown on Figure 4 on page 45). The Proposed Action was reviewed by an architectural historian at the Illinois Department of Transportation-Bureau of Design & Environment (IDOT-BDE), who identified that no architectural resources in the APE were eligible for listing on the National Register of Historic Places due to lack of integrity, historically significant associations and/or architectural significance. A finding of *No Historic Properties Affected* was issued by IDOT-BDE on August 21, 2020. On August 31, 2020, the SHPO concurred with the finding of *No Historic Properties Affected* for the Proposed Action (Appendix D).

Because the determination made by SHPO was indicated to be valid for two years and had expired; the project area of potential effect (APE) had been reduced; and one of the structures previously reviewed (12832 Suddard Street, Beach Park, IL) was now over 50 years old, a request for coordination was submitted to SHPO by FAA on December 19, 2025. On January 15, 2026, SHPO responded with a finding of *No Historic Properties Affected.*

Tribal consultation for the project occurred through IDOT's Project Notification System (PNS). The Tribal Historic Preservation Officer for the Miami Tribe of Oklahoma, the only tribe that responded, offered no objection to the project and indicated that they are not aware of existing documentation directly linking a specific Miami cultural or historic site to the project area (Appendix D).

A copy of the Historical, Architectural, Archeological, and Cultural Resources documentation and coordination for the Proposed Action is provided in Appendix D.

The FAA has not established a significance threshold for Historical, Architectural, Archeological, and Cultural Resources. Based on the FAA's finding and SHPO's concurrence with the *No Historic Properties Affected* finding for both historic properties and archaeological resources, the Proposed Action would not have a significant impact on Historical, Architectural, Archeological, and Cultural Resources.

Land Use

	Yes	No
Will Proposed Action comply with local/regional development patterns for the area?	X	
Is the proposed project located near or will it create a wildlife hazard as defined in FAA Advisory Circular 150/5200-33, "Wildlife Hazards on or Near Airports"?		X
Has coordination with USDA Wildlife Services occurred?		X
Is a Wildlife Assessment required?		X

Remarks:

The Proposed Action would result in localized land use changes where property would be acquired in fee simple or encumbered by avigation easements to accommodate the replacement runway, associated airfield improvements, obstruction removal, and required runway protection areas. Permanent acquisition would convert portions of residential, agricultural, forested, wetland, and open-space lands to airport use or airport-compatible support functions. Avigation easements would not transfer full ownership of the affected properties, but would place limitations on future land uses that could conflict with safe airport operations, including restrictions on structure height, tree growth, and other potential obstructions to navigable airspace.

Land use impacts would be most pronounced in areas requiring residential acquisition and relocation. The project includes the acquisition of residential property and relocation of 16 residences, which would permanently remove those residential uses from the project area. These acquisitions would be completed in accordance with applicable federal relocation requirements, as discussed in the socioeconomics section below. Although these changes would alter land use at individual parcels, the overall land use pattern surrounding UGN would remain a mix of airport, residential, commercial, agricultural, and open-space uses.

The proposed replacement runway would be located northwest of the existing Runway 5/23 and would remain within or adjacent to the established airport environment. The acquisition of easements and removal of obstructions would support compatible land use near the Airport by reducing conflicts between airport operations and surrounding development. The project would not introduce a new non-aviation land use, nor would it substantially change the character of the surrounding communities. Potential effects to public open space, including the Waukegan Savanna and Greg Petry SportsPark, are addressed separately under Section 4(f).

Noise compatible land use is addressed in the Noise and Noise Compatible Land Use section below. No non-compatible land uses would result from the Proposed Action.

The FAA has not established a significance threshold for Land Use. No significant impacts on land use would occur as a result of the Proposed Action.

Natural Resources and Energy Supply

	Yes	No
Will the project result in energy impacts during or after construction?		x
Will demand exceed supply?		x
Are scarce or unusual materials required for the proposed project?		x
Will the project change existing aircraft fuel consumption?		x

Remarks:

During construction, the Proposed Action would temporarily increase fuel demand for construction equipment and the use of natural resources for construction materials. These resources would include gasoline or diesel fuel, building components, soil, subbase materials, aggregate, pavement, and oils. These resources are common and available and in ample supply within the region. The quantity of construction materials required for the Proposed Action would not place an undue strain on supplies.

Following construction, there would be a small decrease in electricity demand for airfield lighting due to the installation of LED lighting. The Proposed Action's Replacement Runway would not increase demand for sewer and water utilities. Any increase in electricity, sewer, and water utilities could be accommodated through the Airport's existing service with the Commonwealth Edison Company and the City of Waukegan.

The FAA has not established a significance threshold for Natural Resources and Energy Supply. The construction and operation of the Proposed Action would not have a significant impact on natural resources and energy supplies.

Noise and Noise Compatible Land Use

	Yes	No
Will the project change the current noise levels?	X	
Are there non-compatible land uses within the 65 DNL?		X
Will the project create temporary (less than 180 days) noise impacts?		X
Is a noise analysis required in accordance with FAA regulations?	X	

Remarks:

Noise is considered any unwanted sound that interferes with normal activities. FAA Order 1050.1G, Appendix C, requires the FAA to identify the location and number of noise-sensitive areas that could be significantly impacted by noise.

To account for differences in how people respond to sound, the dBA is used. This scale most closely approximates the relative loudness of sounds in air as perceived by the human ear and provides a more useful way to evaluate the effect of noise exposure on humans by focusing on those parts of the frequency spectrum where we hear most. The A-weighted sound level has been adopted by the FAA as the accepted measure to consider aircraft noise. The A-weighted decibel, or dBA, corresponds to human hearing, accounting for the higher sensitivity in the mid-range frequencies.

The FAA's required noise metric for aviation noise analysis is the yearly day-night average sound level (DNL) metric. The DNL metric is used because it accounts for an increased sensitivity to noise at night by increasing each noise event that occurs during nighttime hours (i.e., 10:00 pm to 6:59 am) by 10-dBA.

Noise levels can be computed at individual locations of interest, but to show how noise can vary over extended areas, noise metric results like DNL are often drawn on maps in terms of lines connecting points of the same dBA level. Like topographical maps showing the elevation of terrain in an area, these noise "contours" are useful for comparing aircraft noise exposure throughout an airport community. The shape of noise contours depends on many factors but are influenced by things like whether more arriving or departing aircraft are flying over an area.

According to the Forecast Working Paper (Appendix E) during 2023, there were 134 annual average day (AAD) aircraft operations. By 2029 and 2034 with the No Action and Proposed Action Alternatives, it is forecast that there will be 148 and 150 AAD aircraft operations, respectively. At these levels of operation, with the existing condition and in the future with or without the shift in the location of Runway 5/23, all land uses within the DNL 65 A dBA contours are/would be compatible with aircraft noise.

There are publicly owned lands nearby for which the Section 4(f) requirements of the Department of Transportation Act may be applicable but are not within the future DNL 65-dBA or greater contours and are considered compatible with aircraft noise.

There is a small parcel of land west of Runway End 5 that is owned by the Waukegan Park District but is not accessible to the public, nor being utilized as a park. This small parcel of land lies within the future DNL 65- to 70-dBA contour but is identified for acquisition as part of the Proposed Action and would be within the future airport boundary and transition to an aircraft noise compatible land use. The acquisition would occur after the approval of this draft environmental assessment.

Based on the results of the analysis performed to evaluate aircraft noise, the Proposed Action would result in a 1.5 dBA or greater increase in aircraft noise at noise sensitive land uses as the Proposed Action would result in six (6) new noncompatible properties within the DNL 65 dBA contour off the southwest end of Runway 5. However, these six properties would be acquired as part of the Proposed Action after the approval of this draft environmental assessment and would be within the airport boundary and transition to a noise compatible land use.

A significant noise impact is defined in Order 1050.1G if the action would result in noise exposure from impulsive noise sources (e.g., sonic booms) that meet or exceed 60 CDNL – equivalent to DNL 65 dBA. Or if the action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe. For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB.

As described above, the Proposed Action would result in six new noise sensitive properties being exposed to DNL 65 dBA and would result in an increase of noise by DNL 1.5 dB. The Proposed Action includes acquisition of the affected residential properties and conversion of the properties to airport use. Accordingly, the property acquisition would remove the existing noise-sensitive land use upon implementation of the Proposed Action and would not be a significant impact.

The aircraft noise report and noise contour maps for the existing condition and the Proposed Action are provided in Appendix F.

Socioeconomics and Children's Health and Safety Risks

Will the Proposed Action result in:	Yes	No
A change in business or economic activity in the project area		X
An impact on local public service demands		X
Induced/Secondary impacts		X

Remarks:

The Proposed Action would require the acquisition of approximately 17.6 acres and would displace 16 residences, which would be an adverse impact to the impacted households. Any impacted owner, tenant, or business in the acquisition area would be afforded all appropriate rights established in the Uniform Act and by FAA Advisory Circular (AC) 150/5100-17 - Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects. The residences to be replaced would be expected to relocate to other locations within Lake County and comparable housing is anticipated to be available. The primary residential areas to be impacted are immediately adjacent to airport owned land, so no division of an established neighborhood would occur. All community services currently available to displaced residents are expected to remain available to residents. A public hearing will be held to provide an opportunity for proposed displaced residents to offer comments on the Proposed Action and the anticipated socioeconomic impacts.

Because of the high percentages of minorities identified in the affected environment, public involvement will include a heightened focus on outreach to minority communities including Hispanic households that may have low English proficiency. As part of the Scoping Process public outreach, landowners within the acquisition area were notified by mail with project documentation in both English and Spanish. Project notification and an invitation to attend the future public hearing would be provided to landowners within the acquisition area in both English and Spanish.

The Proposed Action would be consistent with orderly, planned development in the area. IDOT is sponsoring and proposing road realignments on Green Bay Road. IDOT's EA for Green Bay Road stated that "The purpose of the Proposed Action is to provide an improved transportation system for IL 131 from Russell Road to Sunset Avenue. To accomplish this, the project must: Improve mobility; Improve safety; and Upgrade roadway features to meet current design standards."[11]. It also indicated that the realignment would add measurable travel time but no significant increase in roadway traffic would be realized as a direct result.

As discussed previously, the Proposed Action would not increase air emissions beyond *de minimis* levels for any evaluated pollutant, nor would it create noise impacts at or above 65 dB for any non-compatible land uses, as identified in the Noise and Noise Compatible Land Use Section, and the Noise Analysis report in Appendix F. No

[11] Illinois Department of Transportation (IDOT), Illinois Route 131-Russell Road to Sunset Avenue-Lake County, Illinois-ENVIRONMENTAL ASSESSMENT, October 17, 2017.

significant effects are projected for other resources evaluated by this document. No children's health and safety risks are expected to occur.

The benefits of the proposed improvements include a temporary increase in employment in the construction sector proportionate to the construction projects. This increased temporary employment would result in a boost to local merchants/professionals from the sale of goods and services and would result in positive growth and a temporary increase in the community tax base. The induced economic and employment effects likely to result from the Proposed Action are positive and consistent with local plans.

The FAA has not established a significance threshold for Socioeconomics or for Children's Environmental Health and Safety Risks.

The displacement of residences as a result of the Proposed Action would be an adverse impact. Benefits of the Proposed Action include a temporary increase in construction related employment and community tax base. However, the action would not have the potential to:

- Disrupt or divide the physical arrangement of an established community;
- Cause extensive relocation when sufficient replacement housing is unavailable;
- Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities;
- Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities;
- Produce a substantial change in the community tax base.
- Lead to a disproportionate health or safety risk to children

Based on these factors, it is anticipated that the Proposed Action would not result in significant socioeconomic impacts or children's health and safety risks.

Visual Resources/Visual Character (Including Light Emissions)

	Yes	No
Will the project result in airport-related lighting impacts?	X	
Does the proposed project fit with the existing environment?	X	

Remarks:

Construction of the Proposed Action would occur on Airport property and newly acquired land immediately adjacent to the Airport. No resources eligible for the National Register of Historic Places were identified within the project area and the owners of the two recreational Section 4(f) resources have confirmed that the Proposed Action would have a de minimis impact on their facilities. While construction is unlikely to occur during the nighttime; any light emissions from night-time-related construction would be temporary. Following construction, operation of the Proposed Action would have similar light emissions to the existing runway operation. The Proposed Action would have no impact on visual resources related to light emissions.

During construction, temporary visual impacts include views of construction equipment. These visual effects would be short-term and would not block or obstruct the views of any protected visual resources. Following construction, the proximity of the Proposed Action to

the existing runway resource would have similar visual effects as the present airport operation. The Proposed Action would be constructed in a similar design to existing infrastructure elsewhere on Airport property. Therefore, the Proposed Action would not affect the area's visual character, nor would it block or obstruct the views of any protected visual resources. In addition, residential properties that could be impacted from changes in lighting at the airport from the replacement runway would be purchased as part of the Proposed Action so no impacts to those properties from light emissions would result.

The FAA has not established a significance threshold for Visual Resources / Visual Character or Light Emissions. However, the Proposed Action would not have the potential to:
• Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources;
• Contrast with the visual resources and/or visual character in the study area; and
• Block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations.
• Create annoyance or interfere with normal activities from light emissions;
• Affect the visual character of the area due to the light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources.

Therefore, the Proposed Action would not result in significant visual resources, visual character or light emissions impacts.

Wetlands

	Yes	No
Are there wetlands in/near the project area?	X	

Total wetland area: 19.49 acres Total wetland area impacted: 9.7 acres

Wetlands present in the project area are summarized in the table below. Refer to Appendix B-2 for the complete Aquatic Resources Report, including maps showing where these wetlands are located in the project area and how this information was collected. It is important to note that access to some private property was not available; in which case observations from the public roadways and evaluation using secondary resources such as aerial photographs, National Wetlands Inventory (NWI) maps and US Department of Agriculture (USDA) Soil Survey maps were used to identify or predict the extent of a wetland on a property without conducting an on-site evaluation of the wetland boundary. In all cases, the private property for which access was not granted were developed residential properties which visual evaluation from the public roadways was possible. No obvious high-quality wetland resources are expected to be present on the non-accessible parcels based on the evaluations completed.

Definitions of the information provided in the wetland summary table below are as follows:

- **Existing condition**: for purposes of describing existing wetland condition, severely degraded wetlands are those with very low ecological integrity, typically characterized by substantial hydrologic alteration, dominance by invasive vegetation, limited native plant diversity, poor habitat structure, and reduced wetland functions. Moderately degraded wetlands retain some wetland functions and native vegetation but show evidence of disturbance, altered hydrology, invasive species, or reduced plant diversity that limits ecological quality. High quality wetlands generally exhibit intact or minimally altered hydrology, diverse native plant communities, limited invasive species, stable soils, and the ability to provide higher-value wetland functions such as wildlife habitat, water quality improvement, flood storage, and groundwater recharge.

- **Impact** describes the acreage from each wetland located within the project area that would be adversely affected by the Proposed Action; impacts can be conversion, permanent fill or temporary
- **Conversion** refers to wetlands that currently contain trees or shrubs which are being temporarily impacted, and would be restored in place as emergent wetland, without tree or shrub replanting.
- **Permanent fill** indicates wetlands that would be filled in with material such as soil during the Proposed Action
- **Temporary** indicates wetlands that would be accessed during the construction process but would be restored via soil regrading and reseeding once construction is complete
- **Wetland jurisdictional status** is a preliminary determination of whether the wetland meets the criteria as a federal water of the United States (jurisdictional) or is considered isolated (not jurisdictional). More details on this status determination is provided in the wetland technical report in Appendix B-2.

RESOURCE	RESOURCE TYPE	EXISTING CONDITION	IMPACT (ACRES)	IMPACT TYPE	PRELIMINARY FEDERAL JURISDICTIONAL STATUS	LOCATION
Wetland A	Emergent Wetland	Severely degraded	0.01	Permanent fill	Not jurisdictional	West of N Green Bay Rd
Wetland D	Scrub-shrub Wetland	Moderately degraded	0.17	Conversion	Not jurisdictional	North of Wadsworth Rd
Wetland E	Scrub-shrub Wetland	Moderately degraded	0.02	Conversion	Not jurisdictional	North of Wadsworth Rd
Wetland F	Scrub-shrub Wetland	High quality	0.06	Conversion	Not jurisdictional	North of Wadsworth Rd
Wetland G	Emergent & Forested Wetland	Degraded	0.02	Conversion	Not jurisdictional	North of Wadsworth Rd
Wetland H	Emergent Wetland	Moderately degraded	0.46	Temporary	Not jurisdictional	North of Wadsworth Rd
Wetland I	Scrub-shrub Wetland	High quality	0.12	Conversion	Not jurisdictional	North of Wadsworth Rd
Wetland J	Emergent Wetland	Moderately degraded	0.23	Temporary	Not jurisdictional	North of Wadsworth Rd
Wetland L	Emergent Wetland	Degraded	0.48	Temporary	Not jurisdictional	Between 5/23 Runway and Wadsworth Rd
Wetland S	Emergent Wetland	Degraded	0.04	Permanent fill	Not jurisdictional	Near south airfield, between 5/23 Runway and N Green Bay Rd
Wetland T	Forested Wetland	Degraded	0.26	Conversion	Not jurisdictional	Near south airfield, between 5/23 Runway and N Green Bay Rd
Wetland X	Emergent Drainage & Pond	High quality	0.5	Permanent fill	Not jurisdictional	Between 5/23 Runway and Wadsworth Rd
Wetland Y	Emergent Wetland	High quality	0.68	Permanent fill	Not jurisdictional	Between 5/23 Runway and Wadsworth Rd
Wetland Z	Emergent Wetland	Moderately degraded	0.01	Temporary	Not jurisdictional	North of Wadsworth Rd
Wetland AA	Emergent Wetland	Moderately degraded	0.02	Temporary	Not jurisdictional	North of Wadsworth Rd

Wetland AC	Emergent Wetland	Moderately degraded	0.04	Temporary	Not jurisdictional	North of Wadsworth Rd
Wetland AF	Emergent Wetland	Moderately degraded	0.04	Permanent fill	Not jurisdictional	Between 5/23 Runway and Wadsworth Rd
Wetland AG	Scrub-shrub Wetland	Moderately degraded	0.05	Permanent fill	Not jurisdictional	Between 5/23 Runway and Wadsworth Rd
Wetland AH	Scrub-shrub Wetland	Moderately degraded	0.15	Permanent fill	Not jurisdictional	Between 5/23 Runway and Wadsworth Rd
Wetland AI	Emergent & Forested Wetland	Moderately degraded	0.21	Permanent fill	**Federally Jurisdictional**	West of N Green Bay Rd
Wetland AK	Emergent Wetland	Moderately degraded	0.03	Temporary	Not jurisdictional	South of W York House Rd
Wetland AL	Emergent Wetland	Severely degraded	0.07	Permanent fill	Not jurisdictional	Between 5/23 Runway and Wadsworth Rd
Wetland 3	Emergent Wetland	Moderately degraded	0.43	Temporary	**Federally Jurisdictional**	West of N Green Bay Rd
	Forested Wetland		0.06	Conversion		
Wetland 4	Emergent & Forested Wetland	Moderately degraded	0.57	Permanent fill	**Federally Jurisdictional**	West of N Green Bay Rd
	Forested Wetland		2.6	Conversion		
	Emergent		1.28	Temporary		
Wetland 5	Emergent	High quality	1.84	Temporary	**Federally Jurisdictional**	West of N Green Bay Rd
Wetland 6	Emergent & Forested Wetland	High quality	0.19	Permanent fill	**Federally Jurisdictional**	West of N Green Bay Rd
	Forested Wetland		0.62	Conversion		
	Emergent		1.66	Temporary		
Wetland 7	Emergent Wetland	Moderately degraded	0.11	Permanent fill	**Federally Jurisdictional**	West of N Green Bay Rd
			2.48	Temporary		
Wetland 8	Ponded Wetland	Moderately degraded	0.36	Temporary	**Federally Jurisdictional**	West of N Green Bay Rd
Wetland 9	Emergent Wetland	Severely degraded	0.06	Temporary	**Federally Jurisdictional**	West of N Green Bay Rd
Wetland 10	Emergent Wetland	Degraded	0.26	Permanent fill	Not jurisdictional	South airfield, between 5/23 Runway and N Green Bay Rd
Wetland 11	Emergent Wetland	Degraded	1.23	Permanent fill	Not jurisdictional	South airfield, between 5/23 Runway and N Green Bay Rd
Wetland 15	Emergent & Scrub-shrub Wetland	Moderately degraded	0.58	Permanent fill	Not jurisdictional	Between 5/23 Runway and Wadsworth Rd
Wetland 18	Forested Wetland	Degraded	0.34	Conversion	Not jurisdictional	North of Wadsworth Rd
Wetland 19	Scrub-shrub Wetland	Moderately degraded	0.73	Conversion	Not jurisdictional	North of Wadsworth Rd
Wetland 20	Emergent	Degraded	0.42	Temporary	Not jurisdictional	North of Wadsworth Rd

Completed Documentation	**Yes**	**No**
Wetland Delineation Report	X	
Conceptual Mitigation Plan (see remarks)		X
Mitigation Available	X	

Individual Wetland Finding

Alternatives that will not result in any wetland impacts are not practicable because such avoidance would result in (Mark all that apply and explain):	**Yes**	**No**
Substantial adverse impacts to adjacent homes, business or other improved properties;		X
Substantially increased project costs;		X
Unique engineering, maintenance, or safety problems;		X
Substantial adverse social, economic, or environmental impacts, or		X
The project not meeting the identified needs	X	

Discuss measures to avoid, minimize, and mitigate wetland impacts. Make sure to include mitigation ratios.

Remarks:

While the No Action Alternative would avoid any wetland impacts, this alternative would not meet the project purpose and need. The Proposed Action would require approximately 9.7 acres of wetland impact (which includes wetland conversions and wetland removals). Roughly half of the proposed wetland impacts are due to the conversion of forested wetlands to emergent wetlands resulting from tree removals, rather than permanent loss of wetland function and values. The loss of approximately 4.7 acres of wetlands would occur as a result of the Proposed Action (Appendix B-2).

The majority of the wetlands that would be permanently impacted were classified as severely degraded to degraded. Wetland quality was determined using a standardized assessment of what proportion of native plant species in a wetland are able to grow in undisturbed habitats (Appendix B-2 Section 2.2.5). Wetlands that meet specific requirements are considered High Quality Aquatic Resources (HQAR) under the Lake County Watershed Development Ordinance and are usually subject to higher mitigation requirements. Of the total 4.7 acres of wetlands that would be lost, only 1.68 acres met HQAR criteria. Mitigation would be required.

The project area also contains one intermittent stream (known locally as the Suburban Country Club Tributary), which is expected to be federally jurisdictional based on its relatively permanent flow and connection to the Des Plaines River. A total impact of approximately 1,052 linear feet of stream would occur as a result of the Proposed Action (Appendix B-2). The impacts are expected to include encapsulation (culverting) the stream.

Wetlands and other aquatic resources that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act and the jurisdictional regulatory authority lies with the US Army Corps of Engineers (USACE). Additionally, the IDNR has regulatory authority over wetlands under the Interagency Wetlands Policy Act for state or state-funded projects. Any wetlands or waters that are not under federal jurisdiction would be regulated by the Lake County Watershed Development Ordinance. A Jurisdictional Determination would be submitted by the airport to the USACE to determine the federal jurisdictional status of all surface water resources in the project area upon the initiation of project permitting prior to the start of construction.

Mitigation

Coordination of the Wetland Impact Evaluation (WIE) with IDOT Bureau of Design and Environment (IDOT-BDE) requirements has been initiated to determine the requirements for mitigation under the Interagency Wetland Policy Act (IWPA). The WIE is a form which provides proposed wetland impacts to IDOT-BDE to coordinate mitigation requirements with IDNR and ensure compliance with the IWPA.

The Proposed Action is expected to require approximately to 19.4 acres of wetland mitigation, assuming a 2 to 1 mitigation ratio which is the worst case ratio anticipated to be required by the regulatory entities responsible for establishing mitigation ratios. This means that for every 1 acre of wetland impacted, the project would be required to mitigate the equivalent of 2 acres of wetland. Final ratios and mitigation requirements would be determined by IDOT-BDE, USACE and the Lake County Stormwater Commission after the project design and mitigation plans are finalized.

The wetland mitigation requirements for the project are expected to be met with the purchase of credits from wetland mitigation banks as available when the Proposed Action proceeds to final design and permitting. A wetland mitigation bank is an area where wetlands have been restored or created to replace wetlands that are impacted by construction projects. Projects can purchase credits from these sites to ensure that wetland resources are replaced and protected elsewhere in the watershed. According to the USACE Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS), there are several nearby banks that may have credits available, including the Buffalo Creek wetland mitigation bank.

Stream mitigation required for the Proposed Action is expected to be met with the use of available stream mitigation banks as available when the Proposed Action proceeds to final design and permitting. According to RIBITS, there are several mitigation banks that may have stream credits available, such as Skare Park and Bronzeback.

If wetland or stream mitigation bank credits are not available, permittee responsible mitigation would be required, meaning the airport would be directly responsible for creation, restoration or enhancement of wetland and stream habitat, subject to approval by USACE, IDOT-BDE, and the Lake County Stormwater Commission. This could include partnership with the LCFPD or the Waukegan Park District to identify potential wetland and stream creation, restoration or enhancement projects on local parkland.

As indicated previously, final mitigation ratios and requirements would be determined in coordination with USACE, IDOT-BDE and the Lake County Stormwater Commission during project permitting.

According to FAA Order 1050.1G, the significance threshold for wetlands include the following:

- Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;
- Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;
- Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);

- Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;
- Promote development of secondary activities or services that would cause the circumstances listed above to occur; or
- Be inconsistent with applicable state wetland strategies.

The Proposed Action is expected to have no affect on the quality or quantity of municipal water supplies. While the Proposed Action could alter the hydrology of other connected wetlands, these impacts are expected to be temporary and would be mitigated as required during the permitting process. For those wetlands that would be completely lost due to the project, their ability to retain floodwaters and stormwater runoff would be lost, but this capacity would be replaced by the compensatory floodplain storage planned (as described in the floodplain section below). The wetlands are generally degraded and occur within or adjacent to an existing airport environment and Proposed Action is not expected to adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands. Because most of the wetland impacts are within the Runway 5/23 RSA, the Proposed Action is not expected to promote development of secondary activities or services that would cause additional wetland impacts to occur. Required compensatory mitigation would replace lost wetland functions and values in accordance with applicable regulatory requirements. With implementation of permit conditions, best management practices, and required compensatory mitigation, the Proposed Action would not result in a substantial loss or degradation of wetland functions, would not substantially affect the long-term sustainability of wetland resources in the project area, would be consistent with state wetland strategies and would not exceed the FAA significance threshold for wetlands.

Floodplains

	Yes	No
Is the project located in a FEMA designated floodplain?	X	

Attach the corresponding FEMA Flood Insurance Rate Map (FIRM) or other documentation in the appendix.

Remarks:

The Federal Emergency Management Agency (FEMA) maintains the National Flood Hazard Layer (NFHL), a set of national maps based on ground surveys and historic flood data indicating the annual flood risk for areas based on their topography and proximity to waterways such as lakes and streams. According to the NFHL, the project area is partially located within a FEMA Flood Zone AE at the northeast and southwest ends of the project area (Appendix B-2), which corresponds to a 1% annual flood risk. The southwest end of the project area is also partially located within the Regulatory Floodway for the unnamed tributary to the Des Plaines River (Appendix B-2). Regulatory Floodway corresponds to areas with a 1% annual flood risk which must not be developed in order to avoid increasing the base flood elevation, which is the height of water in surrounding areas during a flood. Construction in a Regulatory Floodway typically must follow special permit requirements to ensure a project does not increase the base flood elevation.

The Proposed Action would be constructed on up to 12.55 acres of the floodway. The IDNR Office of Water Resources (OWR) controls development within the floodway of a stream with a watershed of one square mile or greater, through their Part 700 regulations. It is anticipated that the Proposed Action would require an IDNR OWR permit and a Watershed Development Permit from the Lake County Stormwater Management Commission.

Floodplain compensatory storage is the creation of replacement floodwater storage to offset floodplain storage that is lost due to construction activities. The replacement storage is designed to hold an equal or greater volume of floodwater so that flood elevations and flood risks do not increase on nearby properties. Compensatory floodplain storage is anticipated to be required and is expected to be provided in dry detention basins on UGN as part of the Proposed Action, and would be designed specifically to avoid any increase in the base flood elevations.

Coordination with the local floodplain administrators and with Lake County Stormwater Management Commission would occur during project permitting. A floodplain notification would be published in the local newspaper.

According to FAA Order 1050.1G, the significance threshold for floodplains is if the Proposed Action would cause notable adverse impacts on natural and beneficial floodplain values. Natural and beneficial floodplain values are defined in Paragraph 4.k of DOT Order 5650.2, Floodplain Management and Protection.

Considering the compensatory storage to be provided, the project would not result in an increase in base flood elevation and would not result in notable adverse impacts to the floodplain natural and beneficial floodplain values.

Surface Waters, Groundwater and Wild and Scenic Rivers

Streams, Rivers, Watercourses & Jurisdictional Ditches	**Yes**	**No**
Are there Streams, Rivers, Watercourses or Ditches in/near the project area?	X	
Is there any Wild, Scenic or Recreational Rivers in/near the project area?		X

Other Waters		
Are there any lakes or ponds in/near the project area?	X	
Are there other surface/below surface waters in/near the project area?	X	

Remarks:

The Proposed Action would change pervious surfaces to impervious surfaces and could change the rate of infiltration, creating additional stormwater runoff. Compensatory measures for stormwater runoff control would be provided through construction of detention/retention basins. Long term operational activities at the Airport such as accidental spills, sanding and de-icing, and vegetation control all have the potential to affect surface water quality. Contaminant concentrations in stormwater coming from such surfaces would not be expected to exceed State Water Quality standards due to the implementation of Best Management Practices (BMPs). As a result, there would be no significant effects on surface water resources within the project area.

According to FAA Order 1050.1G, the significance threshold for surface waters are if the Proposed Action would exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or contaminate public drinking water supply such that public health may be adversely affected.

The significance threshold for groundwater is if the Proposed Action would exceed groundwater quality standards established by Federal, state, local, and tribal regulatory agencies; or contaminate an aquifer used for public water supply such that public health may be adversely affected.

No exceedance of water quality standards or contamination of public water supplies would be expected to occur as a result of the Proposed Action.

Part III – Permits, Mitigation, Coordination and Public Involvement

PERMITS/MITIGATION

Permits

List all required permits for the proposed project & indicate if any problems are anticipated in obtaining the permit

Remarks:

The following permits are required for the Proposed Action. No difficulties obtaining the permits listed are anticipated.

- General NPDES Permit for Construction Site Activities from IEPA, which requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP)
- Clean Construction or Demolition Debris Certification from IEPA
- Watershed Development Permit from the Lake County Stormwater Commission Building Permit from the Land Use department within the City of Waukegan
- Floodplain Permit from Illinois Department of Natural Resources Office of Water Resources (OWR)
- An individual section 404 permit from USACE
- An individual 401 Water Quality Certification from IEPA

Mitigation

Describe all mitigation measures for the proposed project. Include any impacts that cannot be mitigated or those that cannot be mitigated below threshold levels. Also, provide a description of any resources that must be avoided during construction.

Remarks:

The following are the commitments that would be implemented as part of the Proposed Action, if approved.

1. After acquisition of parcels for which access was not available, evaluation for cultural resources would occur and coordination with SHPO would be completed.
2. After acquisition of parcels for which access was not available, evaluation for and surface water resources would occur, and any necessary impacts and mitigation would be included in the waterway permitting for the Proposed Action.
3. Permits for impacts to wetlands and streams would be obtained from the appropriate regulatory agencies and mitigation would be implemented as required in the terms of the permits from USACE, IDNR, IEPA, and the Lake County Stormwater Management Commission.
4. A Watershed Development Ordinance Permit would be obtained from the Lake County Stormwater Management Commission for floodplain, wetland and stream impacts as well as for construction stormwater discharges. The permit would require implementation of erosion and sediment control Best Management Practices during construction of the proposed project.
5. A Floodplain Permit from Illinois Department of Natural Resources Office of Water Resources (OWR) would be obtained and any floodplain compensatory storage required would be implemented.
6. A floodplain encroachment notification would be published in the local newspaper.
7. To prevent floral resources from blooming and nesting of the rusty patched bumble bee within the Proposed Action area, initial ground disturbance would occur within the medium and medium-high quality habitat areas located within the rusty patched bumble bee High Potential Zone during the inactive season (Oct 15 - March 15), when the bee would not be expected to be foraging for nectar or pollen in the project

area. If the project schedule does not allow for ground clearing during the inactive season, then vegetation within the medium and medium-high quality habitat areas located within the HPZ would be mowed throughout the active season (March 16 – Oct 14) to prevent flowering of floral resources, and to minimize the potential that the bees would be present in the Action Area to forage for nectar or pollen.

8. The 7.6-acre pine stand containing rusty patched bumble bee overwintering habitat at the north end of the Proposed Action would not be impacted and would remain after the Proposed Action. To prohibit encroachment during construction, the 7.6-acre pine stand shall be demarcated by posted signs.
9. To offset the loss of foraging habitat, appropriate floral resources would be planted within a rusty patched bumble bee high potential zone area, ideally in the LCFPD Waukegan savanna located adjacent to the airport.
10. Erosion control shall be implemented as specified in the Stormwater Pollution Prevention Plan to prevent sedimentation in potential rusty patched bumble bee habitats available outside of the Proposed Action.

EARLY COORDINATION

List each agency coordinated with, the date coordination was sent, and if a response was received in the following table. Make sure to include a copy of the response in the appendix.

Resource Agency	Date ECL Sent	Date Response Received	Date Draft EA Sent	Date Response Received
Citizen Potawatomi Nation, Oklahoma*	10/16/2019	No Response		
Forest County Potawatomi Community, Wisconsin*	10/16/2019	No Response		
Hannahville Indian Community, Michigan*	10/16/2019	No Response		
Kickapoo Tribe of Oklahoma*	10/16/2019	No Response		
Little Traverse Bay Bands of Odawa Indians, Michigan*	10/16/2019	No Response		
Menominee Indian Tribe of Wisconsin*	10/16/2019	No Response		
Miami Tribe of Oklahoma*	10/16/2019	1/7/2020		
Prairie Band Potawatomi Nation*	10/16/2019	No Response		
Illinois State Historic Preservation Office	5/5/2020	5/22/2020, 8/31/2020, 5/10/2022, 1/15/2026		
US Fish and Wildlife Service	12/2022	5/17/2023		
Illinois Department of Natural Resources	8/3/2022 3/27/2026	8/9/2022 5/1/2026		

* Notified through IDOT BDE Project Notification System

Remarks:	See Appendix B for the endangered species related coordination with USFWS and IDNR, Appendix D for documentation of Illinois SHPO and Tribal consultation and Appendix G for the Coastal Consistency coordination with IDNR.

PUBLIC INVOLVEMENT

Some level of public involvement is encouraged for every Federal Action. **The level of public involvement should be commensurate with the Proposed Action.** Discuss any public involvement activities (legal notices, letters to affected property owners and residents, meetings, special purpose meetings, newspaper articles, etc.) for this project.

Remarks:	A variety of informal public involvement has occurred for the Proposed Action. During project scoping, all potentially impacted property owners were provided with project information and the airport staff have had discussions with most of the property owners. The airport has presented proposed project information at Lake County Port District Board meetings, as well as Lake County Forest Preserve District meetings that are open and available to the public. The airport has had coordination meetings with the community and the surrounding area including Wadsworth, Beach Park, Waukegan and the Waukegan Park District. The airport has also maintained a replacement runway project information webpage that included a preliminary environmental analysis and project information, with a link to provide project feedback. A public hearing is planned prior to finalizing this EA. This EA would be updated to incorporate the public feedback received after the public hearing.

Public Controversy on Environmental Grounds Is the project anticipated to involve substantial controversy concerning community and/or natural resource impacts?	**Yes**	**No**
		X

Exhibit 1 – Location Map



Exhibit 2 – Vicinity Map

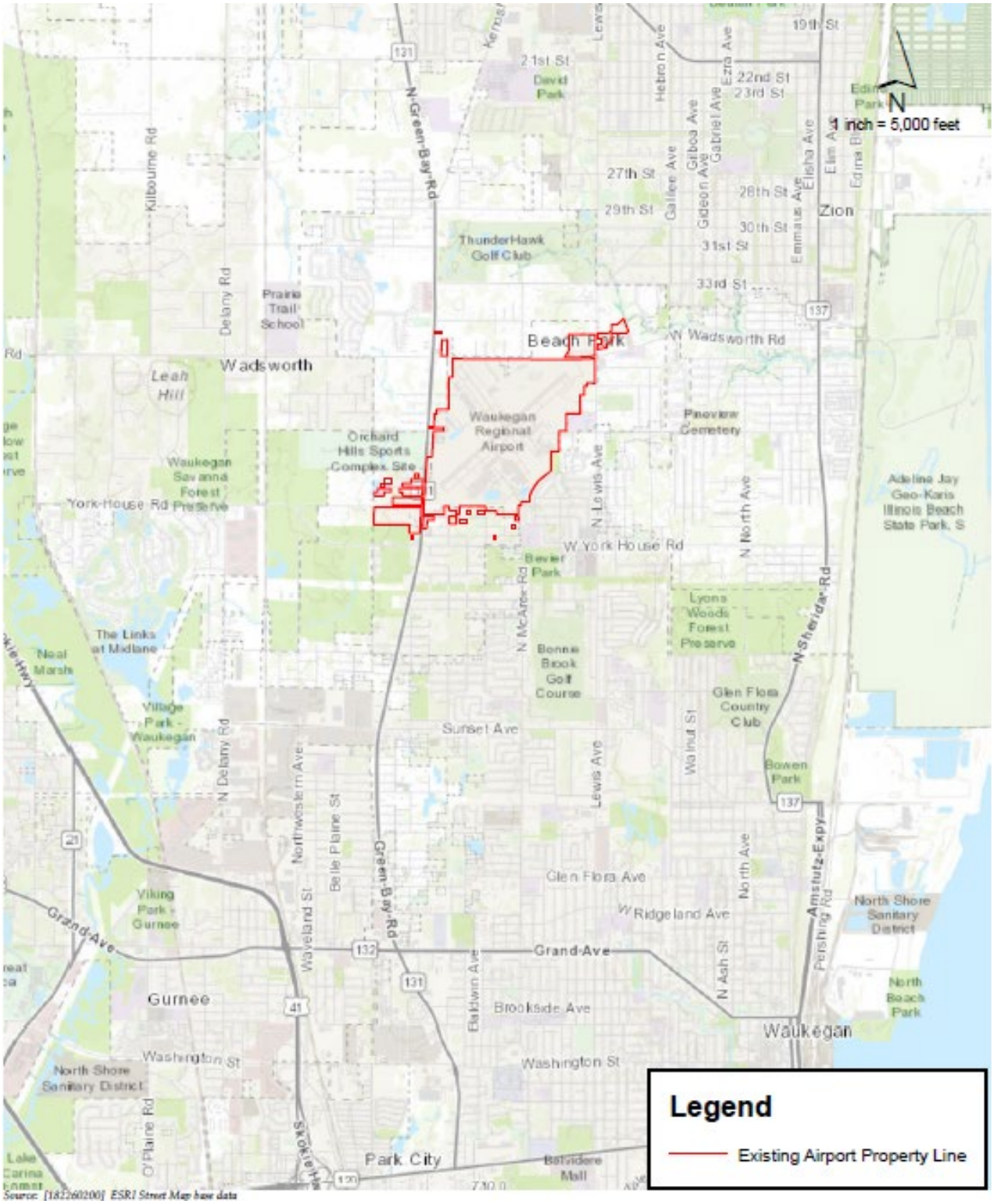
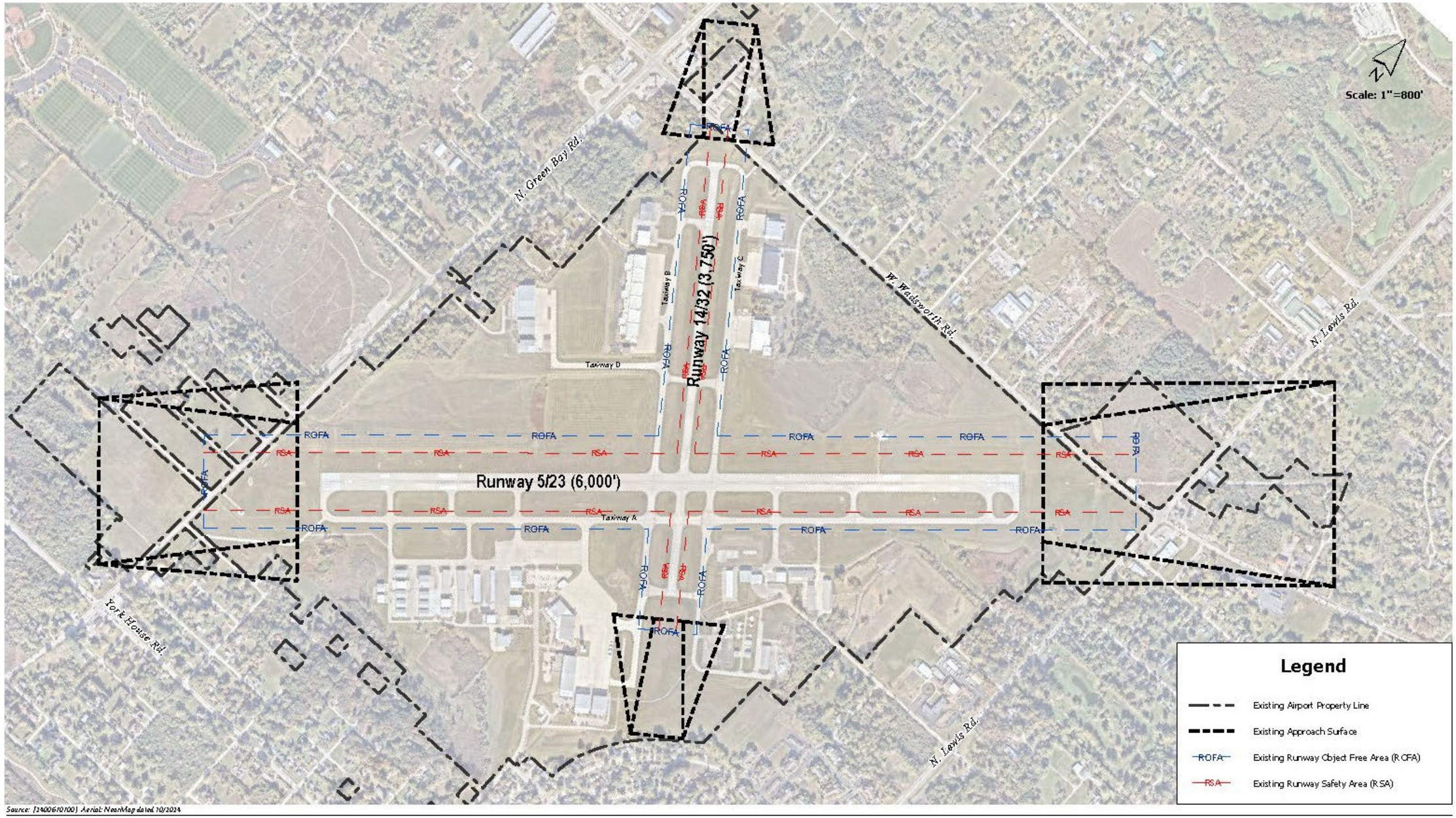


Exhibit 3 – Existing Airport Layout Plan



Source: [2400610100] Aerial: NearMap dated 10/2024

Exhibit 4 - Proposed Action

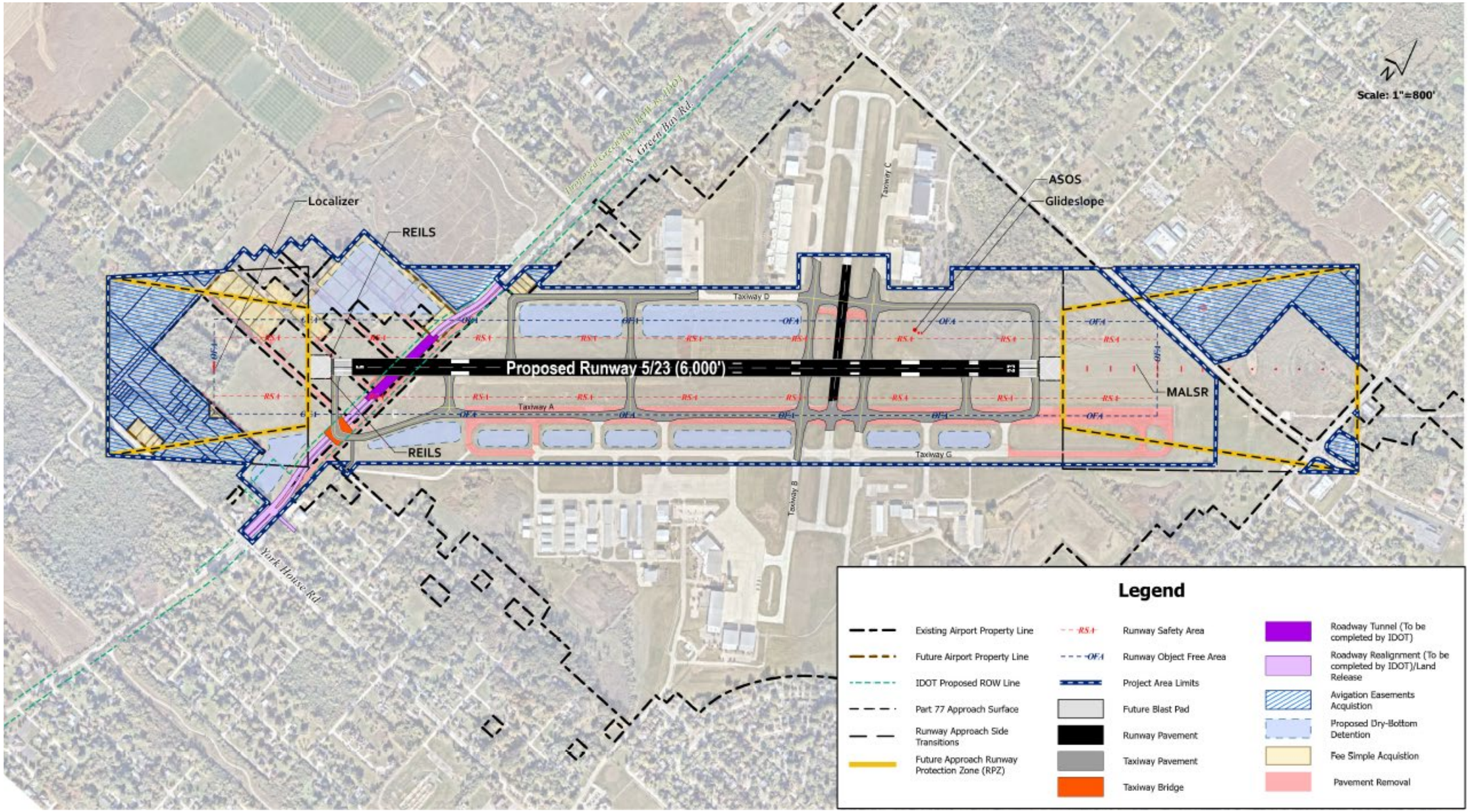


Exhibit 5 - Proposed Action - Runway 5 End

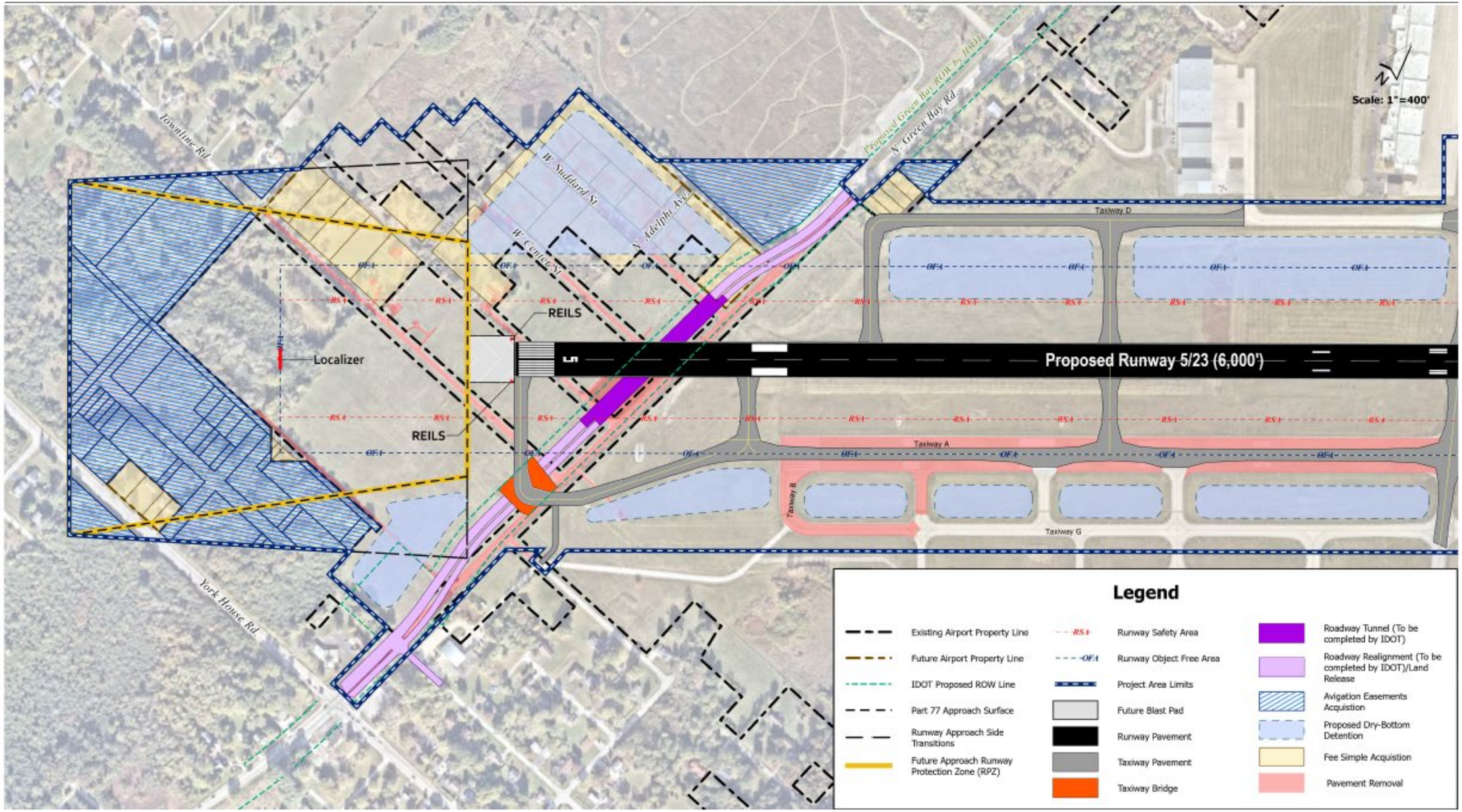
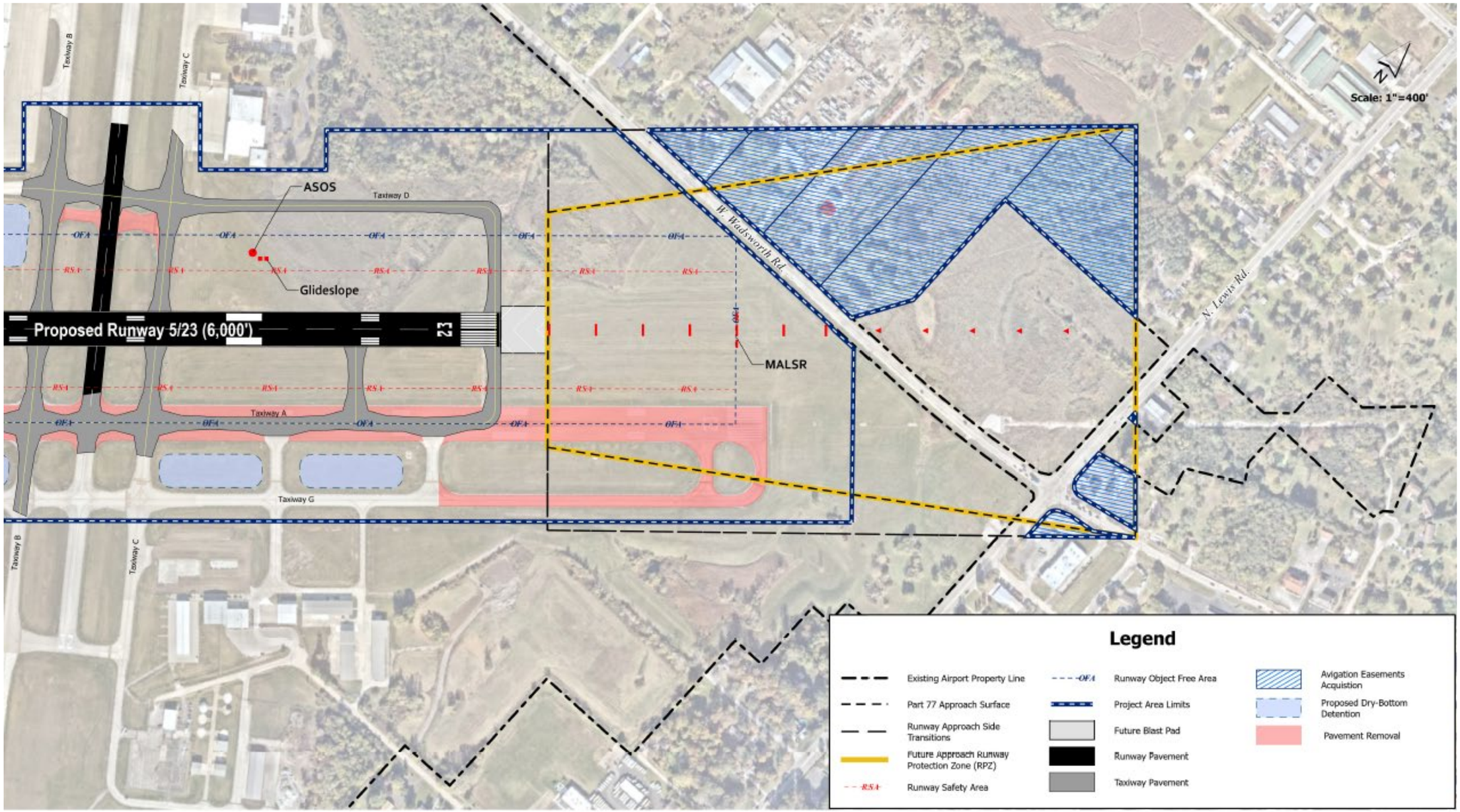


Exhibit 6 - Proposed Action - Runway 23 End



Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX A
AVIATION EMISSIONS AND AIR QUALITY



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

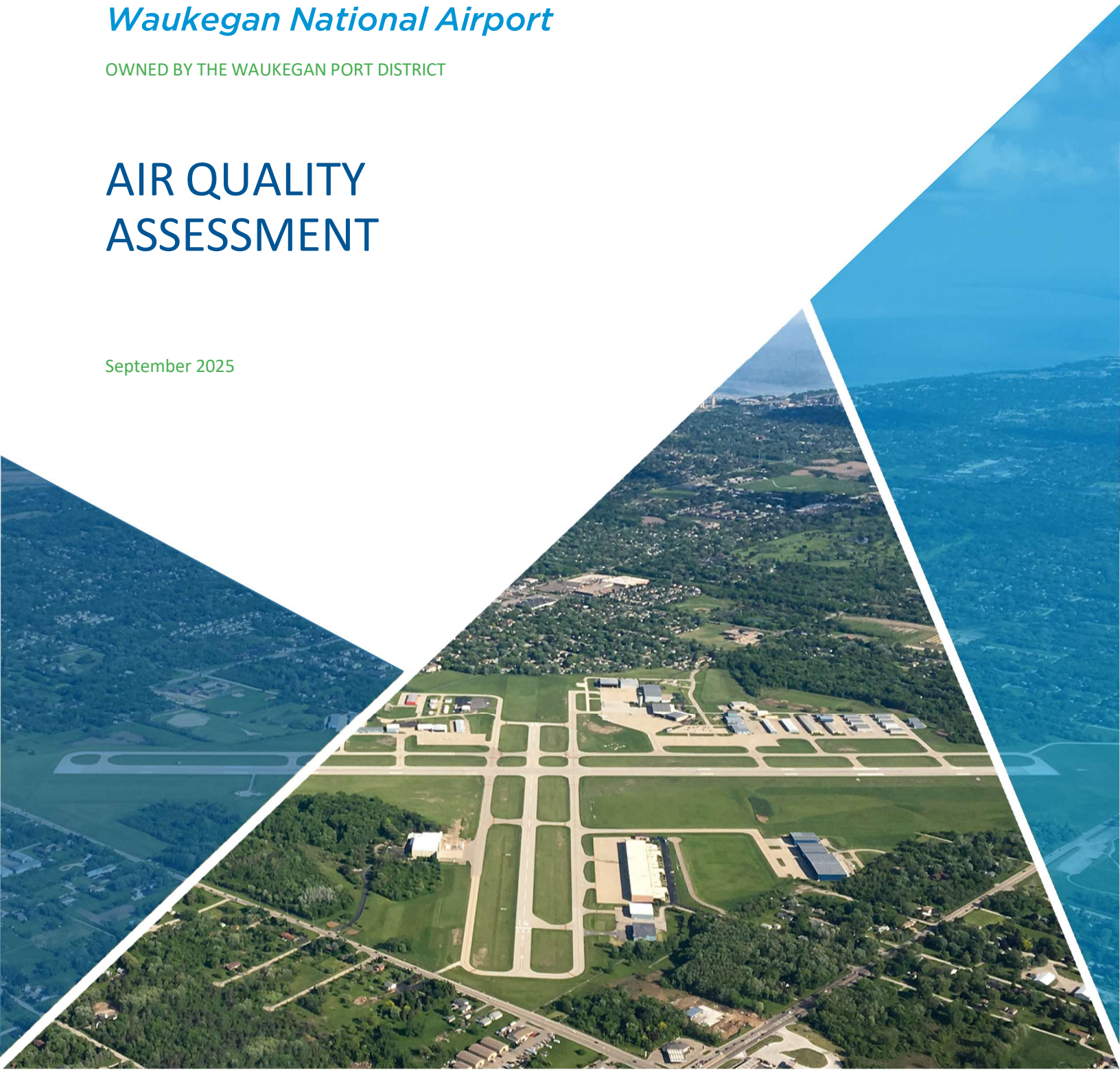
CMT

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

AIR QUALITY ASSESSMENT

September 2025



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1
INTRODUCTION 2
BACKGROUND 2
Regulatory Agencies 2
National Ambient Air Quality Standards 3
Air Quality Designation Status 3
CAA Conformity Requirements 4
NEPA Requirements 4
POTENTIAL AIR QUALITY IMPACTS 5
Construction Emissions 5
Operational Emissions 6
Total Project-related Emission Results 9

LIST OF TABLES

Table 1 - National Ambient Air Quality Standards 3
Table 2 - Air Quality Designations For Lake County 4
Table 3 - General Conformity *De Minimis* Threshold Levels 4
Table 4 - Anticipated Construction Phasing Schedule 6
Table 5 - Future Years 2029 And 2034 Aircraft Fleet Mix And Operations 6
Table 6 - Construction and Operational Emissions (Tons per Year) 9

LIST OF ATTACHMENTS

Attachment 1 - UGN Construction Equipment Types and Activity Levels 10
Attachment 2 - UGN Construction Vehicle Types and Activity Levels 20
Attachment 3 - UGN Construction Equipment and Vehicle Emission Factors 21

EXECUTIVE SUMMARY

Waukegan National Airport (UGN) proposes relocating Runway 05/23 approximately 400 feet southwest of its current location. As a federally funded initiative, the project requires environmental review under the National Environmental Policy Act (NEPA) and the Clean Air Act (CAA). The Federal Aviation Administration (FAA) oversees compliance through FAA Order 1050.1G and utilizes the Aviation Environmental Design Tool (AEDT) to model emissions and evaluate air quality impacts.

UGN is located in Lake County, Illinois, which is designated by the U.S. Environmental Protection Agency (EPA) as a nonattainment area for the 2015 8-hour ozone (O_3) standard. Therefore, a General Conformity applicability analysis under the CAA was prepared. This analysis compares emissions of O_3 precursors—nitrogen oxides (NO_x) and volatile organic compounds (VOC)—against the CAA *de minimis* thresholds of 50 tons/year for NO_x and 100 tons/year for VOC. For disclosure purposes, to comply with NEPA requirements, emissions of carbon monoxide (CO), sulfur oxide (SO_x), and particulate matter (PM_{10}, $PM_{2.5}$) were also evaluated.

Construction emissions were estimated for a construction period starting in February 2027 and continuing through July 2030, using the Airport Construction Emissions Inventory Tool (ACEIT), and incorporating updated emission factors from EPA's MOtor Vehicle Emission Simulator (MOVES, version 5) model. Sources inventoried were off-road construction equipment, on-road vehicles, and fugitives (i.e., evaporative and dust) .

Operational emissions for the future years 2029 and 2034 were modeled using AEDT and include aircraft, auxiliary power units (APUs), and ground support equipment (GSE). The AEDT data inputs developed for the air quality analysis were aligned with those used in the noise analysis and are based on forecasted operations and fleet mix from UGN's June 2025 Forecast Working Paper. Motor vehicle emissions were excluded from the air quality analysis, as no changes are expected due to the Proposed Action.

In conclusion, the proposed runway relocation is not expected to cause significant air quality impacts as project-related NO_x and VOC emissions remain well below the CAA *de minimis* thresholds of 50 and 100 tons/year, respectively. Thus, the Proposed Action is presumed to conform to the applicable State Implementation Plan (SIP).

INTRODUCTION

The Waukegan National Airport (UGN) is proposing to replace its existing Runway 05/23 with a similar runway approximately 400 feet southwest of the existing location (the Proposed Action). Per the National Environmental Policy Act (NEPA) of 1970, all federally funded projects must evaluate the potential environmental impacts of a proposed action. For airport improvement projects, the Federal Aviation Administration (FAA) has established specific policies and procedures to ensure compliance with NEPA, outlined in FAA Order 1050.1G – *FAA National Environmental Policy Act Implementing Procedures.* This order defines how the FAA determines which actions are subject to NEPA requirements and the appropriate level of environmental review. These determinations are guided by the FAA's statutory responsibilities and Congressional mandates, which emphasize safety, efficiency, and minimizing the environmental effects of aviation activities.

To support consistent and comprehensive environmental reviews—particularly regarding air quality and noise—the FAA developed the Aviation Environmental Design Tool (AEDT). According to the AEDT website:

> "AEDT *is a software system that models aircraft performance in space and time to estimate fuel consumption, emissions, noise, and air quality consequences. AEDT is a comprehensive tool that provides information to FAA stakeholders on each of these specific environmental impacts. AEDT facilitates environmental review activities required under NEPA by consolidating the modeling of these environmental impacts in a single tool."*

AEDT requires a wide range of input parameters to accurately model environmental impacts. This report details the specific AEDT input parameters used in the air quality analysis, along with other relevant data sources and methodologies applied in the assessment.

BACKGROUND

The following provides an overview of the regulatory framework that drives the need for the air quality assessment and describes existing air quality conditions (i.e., the affected environment) within the project's study area. Potential air quality impacts (i.e., environmental consequences) with the improvements (i.e., Proposed Action) and without the improvements (i.e., No Action) are presented in the **Potential Air Quality Impacts** section of this report.

Regulatory Agencies

At the federal level, the United States Environmental Protection Agency (EPA) is responsible for establishing the overarching policies and regulatory framework for protecting air quality nationwide, including the quality of the air in Lake County. A key responsibility of the EPA is to promulgate and periodically update the National Ambient Air Quality Standards (NAAQS), which define acceptable outdoor concentrations of specific air pollutants to protect public health and welfare. The EPA also reviews and approves State Implementation Plans (SIPs), which outline how a state will achieve and maintain compliance with the Clean Air Act (CAA).

Also at the federal level, the FAA plays a central role in ensuring that air quality impacts from proposed airport development projects comply with both the NEPA and the CAA's General Conformity Rule. The General Conformity Rule is applicable to non-highway federal actions—such as airport projects—that are federally funded, licensed, permitted, or approved. It ensures that emissions from such projects do not interfere with a state's ability to meet or maintain the NAAQS and if applicable, that the project conforms to a state's SIP.

At the state level, the Illinois Environmental Protection Agency (IEPA) is responsible for enforcing the CAA. This includes ensuring compliance with the NAAQS, issuing air emissions permits, monitoring ambient air quality, and contributing to the development and implementation of Illinois' SIP.

At the local level, the Lake County Health Department provides public outreach and education on air quality issues. This includes disseminating information on air pollutant monitoring and promoting awareness of CAA requirements within the community.

National Ambient Air Quality Standards

The CAA requires the EPA to establish and periodically review NAAQS. There are NAAQS for six "criteria" air pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), and sulfur dioxide (SO_2). There are standards for two sizes of PM, $PM_{2.5}$ which are particles with a diameter of 2.5 microns or less and PM_{10} which are particles with a diameter of 10 microns or less. There are two sets of standards—Primary and Secondary. Primary standards provide protection for the health of the public and Secondary standards provide public welfare protection. The NAAQS and their averaging periods are provided in **Table 1.**

TABLE 1 – NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant		Primary/ Secondary	Averaging Period	Standards	Form
CO		Primary	8-hours	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Pb		Primary & Secondary	Rolling 3-month average	0.15 µg/m^3	Maximum arithmetic mean of 3 consecutive monthly means in a 3-year period
NO_2		Primary	1-hour	100 ppb	Annual 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary & Secondary	1 year	53 ppb(1)	Annual mean
O_3		Primary & Secondary	8-hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
PM	$PM_{2.5}$	Primary	1 year	9.0 µg/m^3	Annual mean, averaged over 3 years
		Secondary	1 year	15 µg/m^3	Annual mean, averaged over 3 years
		Primary & Secondary	24-hours	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary & Secondary	24-hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
SO_2		Primary	1-hour	75 ppb	Annual 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	1 year	10 ppb	Annual mean, averaged over 3 years

Notes: ppb = parts per billion, ppm = parts per million, and µg/m^3 = micrograms per cubic meter of air.

Source: EPA, National Ambient Air Quality Standards (NAAQS) at https://www.epa.gov/criteria-air-pollutants/naaqs-table, September 2025.

Air Quality Designation Status

UGN is located approximately 40 miles north of the city of Chicago and northwest of the city of Waukegan, in Lake County, Illinois. The EPA classifies geographic areas based on their compliance with the NAAQS. Areas where monitored air pollutant concentrations meet or are below the NAAQS are designated as attainment

areas, while those exceeding the standards are designated as nonattainment areas. When a nonattainment area improves its air quality to meet the NAAQS, the EPA may re-designate it as a maintenance area for a period of 20 years, during which the area must continue to demonstrate compliance. Areas lacking sufficient data to determine compliance are classified as unclassifiable.

Based on historical air monitoring data, the EPA has designated Lake County as a maintenance area for the 2008 8-hour O_3 standard and a nonattainment area for the 2015 8-hour O_3 standard. For all other criteria pollutants—CO, Pb, NO_2, PM_{10}, $PM_{2.5}$, and SO_2—Lake County is designated as an attainment area. A summary of Lake County's air quality designations is provided in **Table 2**.

TABLE 2 – AIR QUALITY DESIGNATIONS FOR LAKE COUNTY

Area Name	Pollutant	Designation
Chicago-Naperville, IL-IN-WI	8-Hour O_3 (2008)	Redesignation to Maintenance on 5/20/2022
Chicago, IL-IN-WI	8-Hour O_3 (2015)	Nonattainment – Serious

Source: EPA, Greenbook, Illinois Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants at https://www3.epa.gov/airquality/greenbook/anayo_il.html, September 2025.

CAA Conformity Requirements

The General Conformity Rule of the CAA prohibits Federal agencies (including the FAA) from permitting or funding non-highway projects that do not conform to a SIP. Because the Proposed Action is in Lake County, an area designated as maintenance for the 2008 8-hour O_3 standard and nonattainment for the 2015 8-hour O_3, a General Conformity applicability analysis is required. An applicability analysis is a comparison of project-related emissions of the pollutant for which an area is designated maintenance and/or nonattainment to *de minimis* threshold levels. If project-related emissions exceed the thresholds, a formal Conformity Determination is required to demonstrate that the project conforms to the applicable SIP. Conversely, if project-related emissions are below *de minimis* thresholds the project is assumed to conform to the SIP. O_3 is not directly emitted by any source of pollutants. Instead, emissions of nitrogen oxides (NO_x) and volatile organic compounds (VOC) combine in the presence of sunlight to form the pollutant. Therefore, the General Conformity *de minimis* thresholds for O_3, presented in **Table 3**, are for emissions of NOx and VOC.

TABLE 3 – GENERAL CONFORMITY *DE MINIMIS* THRESHOLD LEVELS

Pollutant	Precursors	Tons/Year
O_3	NO_x	50
	VOC	100

Source: EPA, De Minimis Tables, https://www.epa.gov/general-conformity/de-minimis-tables, September 2025.

The CAA also contains a Transportation Conformity Rule that functions similar to the General Conformity Rule. The Transportation Conformity Rule restricts federal funding to highway or transportation projects that do not conform to a SIP. As with General Conformity, Transportation Conformity regulations apply only to Federal actions located within a nonattainment or maintenance area. Because the Proposed Action would not be developed, funded, or approved by the Federal Highway Administration (FHA) or the Federal Transit Administration (FTA), the Transportation Conformity regulations of the CAA do not apply to the Proposed Action.

NEPA Requirements

In addition to the General Conformity Rule requirements, Section 102(2) of NEPA also requires environmental

review of federally funded projects that have the potential to affect the environment irrespective of location (i.e., nonattainment/maintenance areas). The emission inventories presented in the **Potential Air Quality Impacts** section of this report, which disclose project-related emissions of criteria air pollutants and pollutant precursors were prepared for the required environmental review.

POTENTIAL AIR QUALITY IMPACTS

This section presents and discusses the potential for air quality impacts from the proposed improvements at UGN. For the analysis, the short-term air pollutant and pollutant precursor emissions that would result from construction as well as long-term operational emissions that would result with the Proposed Action were derived.

Construction Emissions

Air pollutant emissions associated with construction activities are temporary in nature and vary depending on the project's location, duration, and intensity of activity. These emissions primarily originate from engine exhaust produced by construction equipment and vehicles operating on-site—such as scrapers, bulldozers, and delivery trucks—as well as from construction worker commutes to and from the site. Additional emissions include fugitive dust generated during site preparation, land clearing, material handling, and equipment movement over unpaved surfaces. Evaporative emissions may also occur during asphalt paving operations.

Construction equipment typically used in airport projects includes both on-road vehicles (i.e., licensed for highway use) and non-road equipment (i.e., off-road machinery). On-road vehicles are generally used for transporting materials, supplies, and personnel to and from the site, while non-road equipment is operated on-site for activities such as excavation, grading, and site clearing.

Short-term construction emissions associated with the proposed improvements at UGN were estimated using the Airport Construction Emissions Inventory Tool (ACEIT).[1] Project-specific inputs—such as equipment types, operating durations, and activity levels—were used to characterize construction activities within ACEIT. Because ACEIT's default emission factors are outdated and do not reflect current rates from the EPA's MOtor Vehicle Emission Simulator (MOVES) model[2], only the activity data (e.g., equipment mixes and operating times) were extracted. Updated emission factors were developed using MOVES, which provides emissions data for both on-road vehicles and off-road construction equipment.

In addition:

- Fugitive dust emissions were estimated using emission factors from the EPA's Compilation of Air Pollutant Emission Factors (AP-42).[3]
- Evaporative emissions from asphalt paving were calculated using EPA guidance specific to paving operations.[4]

Table 4 lists the projected phased construction activities that would be necessary to implement the Proposed

[1] TRB, ACRP Report 102, Guidance for Estimating Airport Construction Emissions, http://www.trb.org/ACRP/Blurbs/170234.aspx.
[2] EPA's MOVES5, at the time of the air quality analysis was the latest version of MOVES. Additional information on MOVES5 is available at https://www.epa.gov/moves/moves2014a-latest-version-motor-vehicle-emission-simulator-moves.
[3] EPA, Emissions Factors & AP-42, Compilation of Air Pollutant Emission Factors, http://www.epa.gov/ttn/chief/ap42/index.html#toc.
[4] EPA, Emission Inventory Improvement Program, Asphalt Paving, Chapter 17, Volume III, April 2001.

Action. The construction is assumed to begin in February 2027 and continue through July 2030.

TABLE 4 – ANTICIPATED CONSTRUCTION PHASING SCHEDULE	
Construction Activities	**Schedule**
Completion of Perimeter Fence	February 2027 – November 2027
Construction of Relocated Runway 5/23	August 2027 - April 2029
Tree and Obstruction Removal	October 2027 – June 2028
Roadway Tunnel Construction	November 2027 - October 2029
Construction of Parallel Taxiway Bridge	November 2028 - July 2030
Installation of Navigational Aids (NAVAIDS)	May 2029 – October 2029
Conversion of Existing Runway 5/23 to a Taxiway for the Relocated Runway	May 2029 – October 2029
Demolition of Existing Runway 5/23	May 2029 – October 2029
Construction of Extended Parallel Taxiway	November 2029 - July 2030

Source: CMT 2025.

Attachment 1 - UGN Construction Equipment Types and Activity Levels lists the airport projects by construction activity, ACEIT off-road construction equipment and fuel types, activity levels, horsepower, load factors, and months of usage per year. **Attachment 2 - UGN Construction Vehicle Types and Activity Levels** lists by airport project, construction activity, ACEIT on-road construction vehicles, fuel types, and activity levels and months of usage projected over the construction timeline. Lastly, **Attachment 3 - UGN Construction Equipment and Vehicle Emission Factors** provides MOVES emission factors for both off-road equipment and on-road vehicles for the construction years 2027 through 2030.

Operational Emissions

The operational emissions inventory was prepared for aircraft, auxiliary power units (APUs), and ground support equipment (GSE). Emissions from motor vehicles were not considered in the analysis as the emissions from this source of pollutants would not change as a result of the Proposed Action. The aircraft, APU and GSE-related emissions were computed using the latest version of the FAA's AEDT.[5] The inventories were prepared for emissions of CO, NO_x, SO_x, PM_{10}, $PM_{2.5}$, and VOC.

Aircraft emissions were evaluated for two future analysis years—2029 and 2034—under both the No Action Alternative and the Proposed Action. The AEDT inputs used in the air quality analysis are consistent with those applied in the aircraft noise assessment. These inputs were based on future forecasted aircraft operational levels and fleet mix, as outlined in UGN's Forecast Working Paper (FWP) prepared in June 2025. Notably the aircraft fleet mix and number of operations remain unchanged between the No Action and Proposed Alternative for both analysis years. **Table 5** presents the aircraft fleet mix and operations used in the air quality analysis for 2029 and 2034.

TABLE 5 – FUTURE YEARS 2029 and 2034 AIRCRAFT FLEET MIX AND OPERATIONS				
Aircraft ID	**AEDT Airframe Name**	**AEDT Engine Model**	**Number of Operations**	
			2029	**2034**
C172	Cessna 172 Skyhawk	IO-360-B	21,420	21,740
DV20	Diamond DA20	O-320	3,823	3,881
P28A	Piper PA-28 Cherokee Series	IO-320-D1AD	2,416	2,452

[5] FAA, Aviation Environmental Design Tool (AEDT) Version 3g, https://aedt.faa.gov/3g_information.aspx.

TABLE 5 – FUTURE YEARS 2029 and 2034 AIRCRAFT FLEET MIX AND OPERATIONS				
Aircraft ID	AEDT Airframe Name	AEDT Engine Model	Number of Operations	
			2029	2034
C152	Cessna 152 (FAS)	O-200	2,101	2,133
SR22	Cirrus SR22 (FAS)	TIO-540-J2B2	1,987	2,017
F2TH	Dassault Falcon 2000	PW308C BS 1289	1,769	1,796
GLF5	Gulfstream G-5/Gulfstream G500	BR700-715C1-30	1,716	1,742
DA40	Diamond DA40	IO-360-B	1,632	1,657
PA44	Piper PA-44-180 (FAS)	IO-360-B	1,532	1,555
C182	Cessna 182	IO-360-B	1,378	1,399
CL30	Bombardier Challenger 300	AE3007A1	1,318	1,338
C68A	Cessna 680-A Citation Latitude	PW306B	889	903
RV12	Vans RV12 (FAS)	O-320	837	850
M20P	Mooney M20-K	TSIO-360C	739	750
LJ45	Bombardier Learjet 45	TFE731-2/2A	679	689
BE36	Raytheon Beech Bonanza 36	TIO-540-J2B2	631	640
C56X	Cessna 560 Citation Excel	PW530	616	625
G280	Gulfstream G280	AS907-2-1G (HTF7250G)	598	607
GA6C	Gulfstream G600	PW815GA	598	607
BE55	Raytheon Beech 55 Baron	TIO-540-J2B2	575	584
GLF4	Gulfstream G400	PW812GA	556	564
GLF6	Gulfstream G650	BR700-725A1-12	506	513
PA32	Piper PA-32 Cherokee Six	TIO-540-J2B2	502	509
E55P	Embraer Phenom 300 (EMB-505)	PW530	452	458
F900	Dassault Falcon 900	TFE731-3	411	417
C680	Cessna 680 Citation Sovereign	PW306B	344	349
C750	Cessna 750 Citation X	AE3007A	322	327
C700	Cessna 700 Citation Longitude	AS907-2-1S (HTF7700L)	278	282
C25B	Cessna CitationJet CJ3 (Cessna 525B)	JT15D-5C	264	268
CL60	Bombardier Challenger 601	AE3007A1	261	264
GL5T	Bombardier Global 5500	BR700-710D5-21	255	259
E545	Embraer Legacy 450 (EMB-545)	AS907-3-1E-A1 (HTF7500E)	245	249
H25B	Raytheon Hawker 800	TFE731-3	226	229
C560	Cessna 560 Citation XLS	PW530	198	201
BE40	Raytheon Beechjet 400	JT15D-5, -5A, -5B	197	200
BE20	Raytheon Super King Air 200	PT6A-41	158	160
GLEX	Bombardier Global Express	BR700-715C1-30	143	145
GA5C	Gulfstream Aerospace Gulfstream G500 (G-7)	PW814GA	139	141
LJ60	Bombardier Learjet 60	PW306A	100	102
E550	Embraer Praetor 600	AS907-3-1E-A3 (HTF7500E)	77	78
BE10	Raytheon King Air 100	TPE331-10A	71	72

TABLE 5 – FUTURE YEARS 2029 and 2034 AIRCRAFT FLEET MIX AND OPERATIONS				
Aircraft ID	AEDT Airframe Name	AEDT Engine Model	Number of Operations	
			2029	2034
PC24	Pilatus PC-24	JT15D-5C	58	59
SF50	CIRRUS SF-50 Vision	JT15D-1 series	58	59
PC12	Pilatus PC-12	PT6A-67	54	55
C550	Cessna S550 Citation S/II	PW610F	50	51
E35L	Embraer Legacy 600	AE3007A1P	50	51
TBM7	EADS Socata TBM-700	PT6A-60	50	51
C30J	Lockheed LM100J Hercules	BIZHEAVYPROP_F	43	43
MU2	Mitsubishi MU-2	TPE331-10	41	41
C25A	Cessna CitationJet CJ2 (Cessna 525A)	JT15D-4 series	39	39
C525	Cessna CitationJet CJ/CJ1 (Cessna 525)	JT15D-1 series	35	35
FA7X	Falcon 7X	PW307A	35	35
FA50	Dassault Falcon 50	TFE731-3	33	33
C650	Cessna 650 Citation III	TFE731-3	31	31
G150	Gulfstream G150	TFE731-3	27	27
GALX	Gulfstream G200	PW306A	25	25
T34P	BEECH MENTOR (BE45) PT6A-25	PT6A-34	25	25
TEX2	Beechcraft T-6 Texan 2 (FAS)	PT6A-64	22	22
C25C	Cessna CitationJet CJ4 (Cessna 525C)	JT15D-5C	19	20
CRJ2	Bombardier CRJ-200	CF34-8C1	15	16
H25C	Raytheon Hawker 1000	PW306B	15	16
TBM9	Daher TBM 900 Series	PT6A-66	14	14
FA20	Dassault Falcon 200	TFE731-3	12	12
HA4T	Raytheon Hawker 4000 Horizon	PW308A	12	12
HDJT	Honda HA-420 Hondajet	PW610F	12	12
ASTR	Israel IAI-1125 Astra	TFE731-3	8	8
E50P	Embraer Phenom 100 (EMB-500)	PW530	8	8
GL7T	Bombardier Global 7500	Passport20-19BB1A	8	8
PRM1	Raytheon Premier I	JT15D-4 series	8	8
C501	Cessna 501 Citation ISP	PW610F	4	4
E135	Embraer ERJ135	AE3007A1	4	4
LJ31	Bombardier Learjet 31	TFE731-3	4	4
LJ35	Bombardier Learjet 35	TFE731-3	4	4
LJ40	Bombardier Learjet 40	TFE731-2/2A	4	4
LJ55	Bombardier Learjet 55	TFE731-3	4	4
WW24	Israel IAI-1124 Westwind I	TFE731-3	4	4
BE30	Raytheon Super King Air 300	PT6A-42	4	4
BE9L	Raytheon King Air 100	TPE331-10A	4	0
C208	Cessna 208 Caravan	TPE331-12	4	4

TABLE 5 – FUTURE YEARS 2029 and 2034 AIRCRAFT FLEET MIX AND OPERATIONS				
Aircraft ID	AEDT Airframe Name	AEDT Engine Model	Number of Operations	
			2029	2034
C425	Cessna 425 Conquest I	PT6A-135A	4	4
E120	Embraer EMB120 Brasilia	PW118A	4	4
SW3	Fairchild SA-227-AC Metro III	PW125B	4	4
SW4	Fairchild SA-226-TC Metro II	TPE331-10	4	4
CL35	Bombardier Challenger 350	AS907-2-1A (HTF7350)	2	2
TBM8	SOCATA TBM 850	PT6A-66	2	2
BE9L	Raytheon King Air 90	PT6A-28	0	4
		Total	**53,826**	**54,628**

Source: CMT, September 2025.

Total Project-related Emission Results

Construction and operational emissions associated with the Proposed Action are presented in **Table 6**. For NEPA disclosure purposes, emissions of CO, NO_x, SO_x, PM_{10}, $PM_{2.5}$ and VOC were assessed. As shown, total NO_x and VOC emissions remain well below the applicable *de minimis* thresholds established under the CAA General Conformity Rule—50 tons per year for NO_x and 100 tons per year for VOCs. Therefore, the Proposed Action is presumed to conform to the applicable SIP.

In conclusion, the proposed improvements at UGN are not expected to result in significant air quality impacts and do not require a formal general conformity determination.

TABLE 6 - CONSTRUCTION AND OPERATIONAL EMISSIONS (TONS PER YEAR)							
Year	Source	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	VOC
2027	Construction	5.8	2.6	<0.1	12.1	1.3	0.5
	2027 Total	***5.8***	***2.6***	***<0.1***	***12.1***	***1.3***	***0.5***
2028	Construction	10.4	3.3	<0.1	13.2	1.4	1.1
	2028 Total	***10.4***	***3.3***	***<0.1***	***13.2***	***1.4***	***1.1***
2029	Construction	10.6	2.1	<0.1	13.2	1.4	1.6
	Operational	7.0	0.5	0.1	<0.1	<0.1	1.0
	2029 Total	***17.6***	***2.6***	***0.2***	***13.2***	***1.4***	***2.6***
2030	Construction	3.9	0.9	<0.1	7.7	0.8	0.7
	Operational	7.1	0.5	0.1	<0.1	<0.1	1.0
	2030 Total	***11.0***	***1.4***	***0.2***	***7.7***	***0.8***	***1.8***
2034	Operational	7.1	0.5	0.1	<0.1	<0.1	1.0
	2034 Total	***7.1***	***0.5***	***0.1***	***<0.1***	***<0.1***	***1.0***
	CAA De Minimis Thresholds	--	*50*	--	--	--	*100*
	Exceeds De Minimis?	--	*No*	--	--	--	*No*

Notes: CO - Carbon Monoxide; VOC - Volatile Organic Compounds, NO_x - Nitrogen Oxides; SO_x - Sulfur Oxides; and $PM_{10/2.5}$ - Particulate Matter.
Operational emissions represent the difference between the Proposed Action and No Action (i.e., Proposed Action – No Action).
To be conservative, operational emissions for 2030 were assumed to be the same as 2034.
Totals may reflect rounding.

Source: CMT, September 2025.

Attachment 1 - UGN Construction Equipment Types and Activity Levels

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Units	Horsepower	Load Factor	Schedule (Months per year)			
								2027	2028	2029	2030
Roadway Tunnel Construction											
Access Road	Asphalt Placement	Asphalt Paver	Diesel	0.6	hours per month	175	0.59	2	12	10	0
Access Road	Asphalt Placement	Dump Truck	Diesel	33.4	miles per month	600	0.59	2	12	10	0
Access Road	Asphalt Placement	Other General Equipment	Diesel	1.2	hours per month	175	0.43	2	12	10	0
Access Road	Asphalt Placement	Pickup Truck	Diesel	9.3	miles per month	600	0.59	2	12	10	0
Access Road	Asphalt Placement	Roller	Diesel	0.6	hours per month	100	0.59	2	12	10	0
Access Road	Asphalt Placement	Skid Steer Loader	Diesel	0.6	hours per month	75	0.21	2	12	10	0
Access Road	Asphalt Placement	Surfacing Equipment (Grooving)	Diesel	0.8	hours per month	25	0.59	2	12	10	0
Access Road	Clearing and Grubbing	Chain Saw	Diesel	1.4	hours per month	11	0.7	2	12	10	0
Access Road	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	1.4	hours per month	100	0.43	2	12	10	0
Access Road	Clearing and Grubbing	Pickup Truck	Diesel	28.5	miles per month	600	0.59	2	12	10	0
Access Road	Curbing	Concrete Truck	Diesel	3.0	hours per month	600	0.59	2	12	10	0
Access Road	Curbing	Curb/Gutter Paver	Diesel	3.0	hours per month	175	0.59	2	12	10	0
Access Road	Curbing	Other General Equipment	Diesel	5.9	hours per month	175	0.43	2	12	10	0
Access Road	Curbing	Pickup Truck	Diesel	44.6	miles per month	600	0.59	2	12	10	0
Access Road	Drainage - 24 inch SICPP	Dozer	Diesel	2.4	hours per month	175	0.59	2	12	10	0
Access Road	Drainage - 24 inch SICPP	Dump Truck	Diesel	35.8	miles per month	600	0.59	2	12	10	0
Access Road	Drainage - 24 inch SICPP	Excavator	Diesel	2.4	hours per month	175	0.59	2	12	10	0
Access Road	Drainage - 24 inch SICPP	Loader	Diesel	2.4	hours per month	175	0.59	2	12	10	0
Access Road	Drainage - 24 inch SICPP	Other General Equipment	Diesel	2.4	hours per month	175	0.43	2	12	10	0
Access Road	Drainage - 24 inch SICPP	Pickup Truck	Diesel	35.8	miles per month	600	0.59	2	12	10	0
Access Road	Drainage - 24 inch SICPP	Roller	Diesel	2.4	hours per month	100	0.59	2	12	10	0
Access Road	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	19.9	miles per month	600	0.59	2	12	10	0
Access Road	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	1.3	hours per month	175	0.59	2	12	10	0
Access Road	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	1.3	hours per month	175	0.43	2	12	10	0
Access Road	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	19.9	miles per month	600	0.59	2	12	10	0
Access Road	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	1.3	hours per month	100	0.21	2	12	10	0
Access Road	Excavation (Borrow)	Dozer	Diesel	2.7	hours per month	175	0.59	2	12	10	0
Access Road	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	41.2	miles per month	600	0.59	2	12	10	0
Access Road	Excavation (Borrow)	Pickup Truck	Diesel	41.2	miles per month	600	0.59	2	12	10	0
Access Road	Excavation (Borrow)	Roller	Diesel	1.3	hours per month	100	0.59	2	12	10	0
Access Road	Excavation (Cut to Fill)	Dozer	Diesel	2.1	hours per month	175	0.59	2	12	10	0
Access Road	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	82.4	miles per month	600	0.59	2	12	10	0
Access Road	Excavation (Cut to Fill)	Excavator	Diesel	1.6	hours per month	175	0.59	2	12	10	0
Access Road	Excavation (Cut to Fill)	Pickup Truck	Diesel	24.7	miles per month	600	0.59	2	12	10	0
Access Road	Excavation (Cut to Fill)	Roller	Diesel	1.6	hours per month	100	0.59	2	12	10	0
Access Road	Excavation (Cut to Fill)	Scraper	Diesel	2.1	hours per month	600	0.59	2	12	10	0
Access Road	Excavation (Topsoil Stripping)	Dozer	Diesel	0.8	hours per month	175	0.59	2	12	10	0
Access Road	Fencing	Concrete Truck	Diesel	0.8	hours per month	600	0.59	2	12	10	0
Access Road	Fencing	Dump Truck	Diesel	49.5	miles per month	600	0.59	2	12	10	0
Access Road	Fencing	Other General Equipment	Diesel	3.3	hours per month	175	0.43	2	12	10	0
Access Road	Fencing	Pickup Truck	Diesel	49.5	miles per month	600	0.59	2	12	10	0
Access Road	Fencing	Skid Steer Loader	Diesel	3.3	hours per month	75	0.21	2	12	10	0
Access Road	Fencing	Tractors/Loader/Backhoe	Diesel	3.3	hours per month	100	0.21	2	12	10	0

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Units	Horsepower	Load Factor	Schedule (Months per year)			
								2027	2028	2029	2030
Access Road	Grading	Dozer	Diesel	0.6	hours per month	175	0.59	2	12	10	0
Access Road	Grading	Grader	Diesel	0.6	hours per month	300	0.59	2	12	10	0
Access Road	Grading	Roller	Diesel	0.6	hours per month	100	0.59	2	12	10	0
Access Road	Hydroseeding	Hydroseeder	Diesel	0.5	hours per month	600	0.59	2	12	10	0
Access Road	Hydroseeding	Off-Road Truck	Diesel	0.5	hours per month	600	0.59	2	12	10	0
Access Road	Markings	Flatbed Truck	Diesel	152.8	miles per month	600	0.59	2	12	10	0
Access Road	Markings	Other General Equipment	Diesel	10.2	hours per month	175	0.43	2	12	10	0
Access Road	Markings	Pickup Truck	Diesel	152.8	miles per month	600	0.59	2	12	10	0
Access Road	Sidewalks	Concrete Truck	Diesel	5.9	hours per month	600	0.59	2	12	10	0
Access Road	Sidewalks	Dump Truck	Diesel	89.1	miles per month	600	0.59	2	12	10	0
Access Road	Sidewalks	Pickup Truck	Diesel	89.1	miles per month	600	0.59	2	12	10	0
Access Road	Sidewalks	Tractors/Loader/Backhoe	Diesel	5.9	hours per month	100	0.21	2	12	10	0
Access Road	Sidewalks	Vibratory Compactor	Diesel	5.9	hours per month	6	0.43	2	12	10	0
Access Road	Soil Erosion/Sediment Control	Other General Equipment	Diesel	0.5	hours per month	175	0.43	2	12	10	0
Access Road	Soil Erosion/Sediment Control	Pickup Truck	Diesel	14.3	miles per month	600	0.59	2	12	10	0
Access Road	Soil Erosion/Sediment Control	Pumps	Diesel	0.5	hours per month	11	0.43	2	12	10	0
Access Road	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	0.5	hours per month	100	0.21	2	12	10	0
Access Road	Street Lighting	Dump Truck	Diesel	29.7	miles per month	600	0.59	2	12	10	0
Access Road	Street Lighting	Loader	Diesel	2.0	hours per month	175	0.59	2	12	10	0
Access Road	Street Lighting	Other General Equipment	Diesel	2.0	hours per month	175	0.43	2	12	10	0
Access Road	Street Lighting	Pickup Truck	Diesel	29.7	miles per month	600	0.59	2	12	10	0
Access Road	Street Lighting	Skid Steer Loader	Diesel	2.0	hours per month	75	0.21	2	12	10	0
Access Road	Street Lighting	Tractors/Loader/Backhoe	Diesel	2.0	hours per month	100	0.21	2	12	10	0
Access Road	Subbase Placement	Dozer	Diesel	1.0	hours per month	175	0.59	2	12	10	0
Access Road	Subbase Placement	Dump Truck (12 cy)	Diesel	109.9	miles per month	600	0.59	2	12	10	0
Access Road	Subbase Placement	Pickup Truck	Diesel	15.6	miles per month	600	0.59	2	12	10	0
Access Road	Subbase Placement	Roller	Diesel	1.0	hours per month	100	0.59	2	12	10	0
Access Road	Topsoil Placement	Dozer	Diesel	1.3	hours per month	175	0.59	2	12	10	0
Access Road	Topsoil Placement	Dump Truck	Diesel	19.3	miles per month	600	0.59	2	12	10	0
Access Road	Topsoil Placement	Pickup Truck	Diesel	19.3	miles per month	600	0.59	2	12	10	0
Demolition of Existing Runway											
Demolition - Concrete	Concrete Demolition	Excavator with Bucket	Diesel	57.1	hours per month	175	0.59	0	0	6	0
Demolition - Concrete	Concrete Demolition	Excavator with Hoe Ram	Diesel	57.1	hours per month	175	0.59	0	0	6	0
Demolition - Concrete	Concrete Demolition	Pickup Truck	Diesel	1,714.3	miles per month	600	0.59	0	0	6	0
Completion of Perimeter Fence											
Fencing	Clearing and Grubbing	Chain Saw	Diesel	5.2	hours per month	11	0.70	11	0	0	0
Fencing	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	5.2	hours per month	100	0.43	11	0	0	0
Fencing	Clearing and Grubbing	Pickup Truck	Diesel	103.2	miles per month	600	0.59	11	0	0	0
Fencing	Excavation (Cut to Fill)	Dozer	Diesel	7.0	hours per month	175	0.59	11	0	0	0
Fencing	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	347.8	miles per month	600	0.59	11	0	0	0
Fencing	Excavation (Cut to Fill)	Excavator	Diesel	7.0	hours per month	175	0.59	11	0	0	0
Fencing	Excavation (Cut to Fill)	Pickup Truck	Diesel	104.3	miles per month	600	0.59	11	0	0	0
Fencing	Excavation (Cut to Fill)	Roller	Diesel	7.0	hours per month	100	0.59	11	0	0	0
Fencing	Fencing	Concrete Truck	Diesel	41.8	hours per month	600	0.59	11	0	0	0
Fencing	Fencing	Dump Truck	Diesel	2,506.7	miles per month	600	0.59	11	0	0	0

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Units	Horsepower	Load Factor	Schedule (Months per year)			
								2027	2028	2029	2030
Fencing	Fencing	Other General Equipment	Diesel	167.1	hours per month	175	0.43	11	0	0	0
Fencing	Fencing	Pickup Truck	Diesel	2,506.7	miles per month	600	0.59	11	0	0	0
Fencing	Fencing	Skid Steer Loader	Diesel	167.1	hours per month	75	0.21	11	0	0	0
Fencing	Fencing	Tractors/Loader/Backhoe	Diesel	167.1	hours per month	100	0.21	11	0	0	0
Fencing	Grading	Dozer	Diesel	2.1	hours per month	175	0.59	11	0	0	0
Fencing	Grading	Grader	Diesel	2.1	hours per month	300	0.59	11	0	0	0
Fencing	Grading	Roller	Diesel	2.1	hours per month	100	0.59	11	0	0	0
Fencing	Hydroseeding	Hydroseeder	Diesel	1.9	hours per month	600	0.59	11	0	0	0
Fencing	Hydroseeding	Off-Road Truck	Diesel	1.9	hours per month	600	0.59	11	0	0	0
Fencing	Soil Erosion/Sediment Control	Other General Equipment	Diesel	1.7	hours per month	175	0.43	11	0	0	0
Fencing	Soil Erosion/Sediment Control	Pickup Truck	Diesel	51.6	miles per month	600	0.59	11	0	0	0
Fencing	Soil Erosion/Sediment Control	Pumps	Diesel	1.7	hours per month	11	0.43	11	0	0	0
Fencing	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	1.7	hours per month	100	0.21	11	0	0	0
Fencing	Topsoil Placement	Dozer	Diesel	11.6	hours per month	175	0.59	11	0	0	0
Fencing	Topsoil Placement	Dump Truck	Diesel	173.9	miles per month	600	0.59	11	0	0	0
Fencing	Topsoil Placement	Pickup Truck	Diesel	173.9	miles per month	600	0.59	11	0	0	0
Installation of NAVAIDS											
NAVAIDS	Approach Lighting	Air Compressor	Diesel	1.3	hours per month	100	0.43	0	0	6	0
NAVAIDS	Approach Lighting	Crane	Diesel	1.3	hours per month	300	0.43	0	0	6	0
NAVAIDS	Approach Lighting	Dozer	Diesel	1.3	hours per month	175	0.59	0	0	6	0
NAVAIDS	Approach Lighting	Dump Truck	Diesel	20.0	miles per month	600	0.59	0	0	6	0
NAVAIDS	Approach Lighting	Excavator	Diesel	1.3	hours per month	175	0.59	0	0	6	0
NAVAIDS	Approach Lighting	Other General Equipment	Diesel	1.3	hours per month	175	0.43	0	0	6	0
NAVAIDS	Approach Lighting	Skid Steer Loader	Diesel	1.3	hours per month	75	0.21	0	0	6	0
NAVAIDS	Approach Lighting	Tractors/Loader/Backhoe	Diesel	1.3	hours per month	100	0.21	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Glide Slope	Air Compressor	Diesel	1.3	hours per month	100	0.43	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Glide Slope	Crane	Diesel	1.3	hours per month	300	0.43	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Glide Slope	Dozer	Diesel	2.7	hours per month	175	0.59	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Glide Slope	Dump Truck	Diesel	50.0	miles per month	600	0.59	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Glide Slope	Excavator	Diesel	1.3	hours per month	175	0.59	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Glide Slope	Other General Equipment	Diesel	4.0	hours per month	175	0.43	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Glide Slope	Pickup Truck	Diesel	10.0	miles per month	600	0.59	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Glide Slope	Skid Steer Loader	Diesel	4.0	hours per month	75	0.21	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Glide Slope	Tractors/Loader/Backhoe	Diesel	4.0	hours per month	100	0.21	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Localizer	Air Compressor	Diesel	1.3	hours per month	100	0.43	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Localizer	Crane	Diesel	1.3	hours per month	300	0.43	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Localizer	Dozer	Diesel	2.7	hours per month	175	0.59	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Localizer	Dump Truck	Diesel	50.0	miles per month	600	0.59	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Localizer	Excavator	Diesel	1.3	hours per month	175	0.59	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Localizer	Other General Equipment	Diesel	4.0	hours per month	175	0.43	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Localizer	Pickup Truck	Diesel	10.0	miles per month	600	0.59	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Localizer	Skid Steer Loader	Diesel	4.0	hours per month	75	0.21	0	0	6	0
NAVAIDS	Instrument Landing System (ILS) Localizer	Tractors/Loader/Backhoe	Diesel	4.0	hours per month	100	0.21	0	0	6	0
NAVAIDS	Precision Approach Path Indicator (PAPI)	Air Compressor	Diesel	1.3	hours per month	100	0.43	0	0	6	0
NAVAIDS	Precision Approach Path Indicator (PAPI)	Dump Truck	Diesel	20.0	miles per month	600	0.59	0	0	6	0

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Units	Horsepower	Load Factor	Schedule (Months per year)			
								2027	2028	2029	2030
NAVAIDS	Precision Approach Path Indicator (PAPI)	Other General Equipment	Diesel	1.3	hours per month	175	0.43	0	0	6	0
NAVAIDS	Precision Approach Path Indicator (PAPI)	Pickup Truck	Diesel	20.0	miles per month	600	0.59	0	0	6	0
NAVAIDS	Precision Approach Path Indicator (PAPI)	Skid Steer Loader	Diesel	1.3	hours per month	75	0.21	0	0	6	0
NAVAIDS	Precision Approach Path Indicator (PAPI)	Tractors/Loader/Backhoe	Diesel	1.3	hours per month	100	0.21	0	0	6	0
NAVAIDS	Rotating Beacon	Crane	Diesel	<0.1	hours per month	300	0.43	0	0	6	0
NAVAIDS	Rotating Beacon	Dump Truck	Diesel	<0.1	miles per month	600	0.59	0	0	6	0
NAVAIDS	Rotating Beacon	Excavator	Diesel	<0.1	hours per month	175	0.59	0	0	6	0
NAVAIDS	Rotating Beacon	Other General Equipment	Diesel	<0.1	hours per month	175	0.43	0	0	6	0
NAVAIDS	Rotating Beacon	Pickup Truck	Diesel	<0.1	miles per month	600	0.59	0	0	6	0
NAVAIDS	Windcone	Dump Truck	Diesel	<0.1	miles per month	600	0.59	0	0	6	0
NAVAIDS	Windcone	Excavator	Diesel	<0.1	hours per month	175	0.59	0	0	6	0
NAVAIDS	Windcone	Other General Equipment	Diesel	<0.1	hours per month	175	0.43	0	0	6	0
NAVAIDS	Windcone	Pickup Truck	Diesel	<0.1	miles per month	600	0.59	0	0	6	0
Construction of Relocated Runway 5/23											
New Runway	Asphalt Placement	Asphalt Paver	Diesel	5.9	hours per month	175	0.59	5	12	4	0
New Runway	Asphalt Placement	Dump Truck	Diesel	321.2	miles per month	600	0.59	5	12	4	0
New Runway	Asphalt Placement	Other General Equipment	Diesel	11.9	hours per month	175	0.43	5	12	4	0
New Runway	Asphalt Placement	Pickup Truck	Diesel	89.2	miles per month	600	0.59	5	12	4	0
New Runway	Asphalt Placement	Roller	Diesel	5.9	hours per month	100	0.59	5	12	4	0
New Runway	Asphalt Placement	Skid Steer Loader	Diesel	5.9	hours per month	75	0.21	5	12	4	0
New Runway	Asphalt Placement	Surfacing Equipment (Grooving)	Diesel	7.6	hours per month	25	0.59	5	12	4	0
New Runway	Clearing and Grubbing	Chain Saw	Diesel	12.6	hours per month	11	0.70	5	12	4	0
New Runway	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	12.6	hours per month	100	0.43	5	12	4	0
New Runway	Clearing and Grubbing	Pickup Truck	Diesel	252.7	miles per month	600	0.59	5	12	4	0
New Runway	Drainage - 24 inch SICPP	Dozer	Diesel	9.2	hours per month	175	0.59	5	12	4	0
New Runway	Drainage - 24 inch SICPP	Dump Truck	Diesel	137.3	miles per month	600	0.59	5	12	4	0
New Runway	Drainage - 24 inch SICPP	Excavator	Diesel	9.2	hours per month	175	0.59	5	12	4	0
New Runway	Drainage - 24 inch SICPP	Loader	Diesel	9.2	hours per month	175	0.59	5	12	4	0
New Runway	Drainage - 24 inch SICPP	Other General Equipment	Diesel	9.2	hours per month	175	0.43	5	12	4	0
New Runway	Drainage - 24 inch SICPP	Pickup Truck	Diesel	137.3	miles per month	600	0.59	5	12	4	0
New Runway	Drainage - 24 inch SICPP	Roller	Diesel	9.2	hours per month	100	0.59	5	12	4	0
New Runway	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	76.3	miles per month	600	0.59	5	12	4	0
New Runway	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	5.1	hours per month	175	0.59	5	12	4	0
New Runway	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	5.1	hours per month	175	0.43	5	12	4	0
New Runway	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	76.3	miles per month	600	0.59	5	12	4	0
New Runway	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	5.1	hours per month	100	0.21	5	12	4	0
New Runway	Excavation (Borrow)	Dozer	Diesel	26.4	hours per month	175	0.59	5	12	4	0
New Runway	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	396.4	miles per month	600	0.59	5	12	4	0
New Runway	Excavation (Borrow)	Pickup Truck	Diesel	396.4	miles per month	600	0.59	5	12	4	0
New Runway	Excavation (Borrow)	Roller	Diesel	12.2	hours per month	100	0.59	5	12	4	0
New Runway	Excavation (Cut to Fill)	Dozer	Diesel	19.8	hours per month	175	0.59	5	12	4	0
New Runway	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	792.9	miles per month	600	0.59	5	12	4	0
New Runway	Excavation (Cut to Fill)	Excavator	Diesel	15.9	hours per month	175	0.59	5	12	4	0
New Runway	Excavation (Cut to Fill)	Pickup Truck	Diesel	237.9	miles per month	600	0.59	5	12	4	0
New Runway	Excavation (Cut to Fill)	Roller	Diesel	15.9	hours per month	100	0.59	5	12	4	0

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Units	Horsepower	Load Factor	Schedule (Months per year)			
								2027	2028	2029	2030
New Runway	Excavation (Cut to Fill)	Scraper	Diesel	19.8	hours per month	600	0.59	5	12	4	0
New Runway	Excavation (Topsoil Stripping)	Dozer	Diesel	7.5	hours per month	175	0.59	5	12	4	0
New Runway	Fencing	Concrete Truck	Diesel	3.2	hours per month	600	0.59	5	12	4	0
New Runway	Fencing	Dump Truck	Diesel	190.5	miles per month	600	0.59	5	12	4	0
New Runway	Fencing	Other General Equipment	Diesel	12.7	hours per month	175	0.43	5	12	4	0
New Runway	Fencing	Pickup Truck	Diesel	190.5	miles per month	600	0.59	5	12	4	0
New Runway	Fencing	Skid Steer Loader	Diesel	12.7	hours per month	75	0.21	5	12	4	0
New Runway	Fencing	Tractors/Loader/Backhoe	Diesel	12.7	hours per month	100	0.21	5	12	4	0
New Runway	Grading	Dozer	Diesel	5.1	hours per month	175	0.59	5	12	4	0
New Runway	Grading	Grader	Diesel	5.1	hours per month	300	0.59	5	12	4	0
New Runway	Grading	Roller	Diesel	5.1	hours per month	100	0.59	5	12	4	0
New Runway	Hydroseeding	Hydroseeder	Diesel	4.6	hours per month	600	0.59	5	12	4	0
New Runway	Hydroseeding	Off-Road Truck	Diesel	4.6	hours per month	600	0.59	5	12	4	0
New Runway	Lighting	Dump Truck	Diesel	58.4	miles per month	600	0.59	5	12	4	0
New Runway	Lighting	Loader	Diesel	3.9	hours per month	175	0.59	5	12	4	0
New Runway	Lighting	Other General Equipment	Diesel	3.9	hours per month	175	0.43	5	12	4	0
New Runway	Lighting	Pickup Truck	Diesel	58.4	miles per month	600	0.59	5	12	4	0
New Runway	Lighting	Skid Steer Loader	Diesel	3.9	hours per month	75	0.21	5	12	4	0
New Runway	Lighting	Tractors/Loader/Backhoe	Diesel	3.9	hours per month	100	0.21	5	12	4	0
New Runway	Markings	Flatbed Truck	Diesel	1,469.4	miles per month	600	0.59	5	12	4	0
New Runway	Markings	Other General Equipment	Diesel	98.0	hours per month	175	0.43	5	12	4	0
New Runway	Markings	Pickup Truck	Diesel	1,469.4	miles per month	600	0.59	5	12	4	0
New Runway	Soil Erosion/Control	Other General Equipment	Diesel	4.2	hours per month	175	0.43	5	12	4	0
New Runway	Markings	Pickup Truck	Diesel	1,469.4	miles per month	600	0.59	5	12	4	0
New Runway	Soil Erosion/Control	Other General Equipment	Diesel	4.2	hours per month	175	0.43	5	12	4	0
New Runway	Soil Erosion/Control	Pickup Truck	Diesel	126.4	miles per month	600	0.59	5	12	4	0
New Runway	Soil Erosion/Control	Pumps	Diesel	4.2	hours per month	11	0.43	5	12	4	0
New Runway	Soil Erosion/Control	Tractors/Loader/Backhoe	Diesel	4.2	hours per month	100	0.21	5	12	4	0
New Runway	Subbase Placement	Dozer	Diesel	10.0	hours per month	175	0.59	5	12	4	0
New Runway	Subbase Placement	Dump Truck (12 cy)	Diesel	1,057.1	miles per month	600	0.59	5	12	4	0
New Runway	Subbase Placement	Pickup Truck	Diesel	150.2	miles per month	600	0.59	5	12	4	0
New Runway	Subbase Placement	Roller	Diesel	9.8	hours per month	100	0.59	5	12	4	0
New Runway	Topsoil Placement	Dozer	Diesel	11.3	hours per month	175	0.59	5	12	4	0
New Runway	Topsoil Placement	Dump Truck	Diesel	169.4	miles per month	600	0.59	5	12	4	0
New Runway	Topsoil Placement	Pickup Truck	Diesel	169.4	miles per month	600	0.59	5	12	4	0
Construction of Parallel Taxiway Bridge											
Taxiways	Asphalt Placement	Asphalt Paver	Diesel	0.1	hours per month	175	0.59	0	2	12	7
Taxiways	Asphalt Placement	Dump Truck	Diesel	7.9	miles per month	600	0.59	0	2	12	7
Taxiways	Asphalt Placement	Other General Equipment	Diesel	0.3	hours per month	175	0.43	0	2	12	7
Taxiways	Asphalt Placement	Pickup Truck	Diesel	2.2	miles per month	600	0.59	0	2	12	7
Taxiways	Asphalt Placement	Roller	Diesel	0.1	hours per month	100	0.59	0	2	12	7
Taxiways	Asphalt Placement	Skid Steer Loader	Diesel	0.1	hours per month	75	0.21	0	2	12	7
Taxiways	Asphalt Placement	Surfacing Equipment (Grooving)	Diesel	0.2	hours per month	25	0.59	0	2	12	7
Taxiways	Clearing and Grubbing	Chain Saw	Diesel	0.3	hours per month	11	0.70	0	2	12	7
Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	0.3	hours per month	100	0.43	0	2	12	7
Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	7.0	miles per month	600	0.59	0	2	12	7
Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	0.7	hours per month	175	0.59	0	2	12	7

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Units	Horsepower	Load Factor	Schedule (Months per year)			
								2027	2028	2029	2030
Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	10.1	miles per month	600	0.59	0	2	12	7
Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	0.7	hours per month	175	0.59	0	2	12	7
Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	0.7	hours per month	175	0.59	0	2	12	7
Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	0.7	hours per month	175	0.43	0	2	12	7
Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	10.1	miles per month	600	0.59	0	2	12	7
Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	0.7	hours per month	100	0.59	0	2	12	7
Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	5.6	miles per month	600	0.59	0	2	12	7
Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	0.4	hours per month	175	0.59	0	2	12	7
Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	0.4	hours per month	175	0.43	0	2	12	7
Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	5.6	miles per month	600	0.59	0	2	12	7
Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	0.4	hours per month	100	0.21	0	2	12	7
Taxiways	Excavation (Borrow)	Dozer	Diesel	0.6	hours per month	175	0.59	0	2	12	7
Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	9.7	miles per month	600	0.59	0	2	12	7
Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	9.7	miles per month	600	0.59	0	2	12	7
Taxiways	Excavation (Borrow)	Roller	Diesel	0.3	hours per month	100	0.59	0	2	12	7
Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	0.5	hours per month	175	0.59	0	2	12	7
Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	19.5	miles per month	600	0.59	0	2	12	7
Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	0.4	hours per month	175	0.59	0	2	12	7
Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	5.8	miles per month	600	0.59	0	2	12	7
Taxiways	Excavation (Cut to Fill)	Roller	Diesel	0.4	hours per month	100	0.59	0	2	12	7
Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	0.5	hours per month	600	0.59	0	2	12	7
Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	0.2	hours per month	175	0.59	0	2	12	7
Taxiways	Fencing	Concrete Truck	Diesel	0.2	hours per month	600	0.59	0	2	12	7
Taxiways	Fencing	Dump Truck	Diesel	14.1	miles per month	600	0.59	0	2	12	7
Taxiways	Fencing	Other General Equipment	Diesel	0.9	hours per month	175	0.43	0	2	12	7
Taxiways	Fencing	Pickup Truck	Diesel	14.1	miles per month	600	0.59	0	2	12	7
Taxiways	Fencing	Skid Steer Loader	Diesel	0.9	hours per month	75	0.21	0	2	12	7
Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	0.9	hours per month	100	0.21	0	2	12	7
Taxiways	Grading	Dozer	Diesel	0.1	hours per month	175	0.59	0	2	12	7
Taxiways	Grading	Grader	Diesel	0.1	hours per month	300	0.59	0	2	12	7
Taxiways	Grading	Roller	Diesel	0.1	hours per month	100	0.59	0	2	12	7
Taxiways	Hydroseeding	Hydroseeder	Diesel	0.1	hours per month	600	0.59	0	2	12	7
Taxiways	Hydroseeding	Off-Road Truck	Diesel	0.1	hours per month	600	0.59	0	2	12	7
Taxiways	Lighting	Dump Truck	Diesel	4.2	miles per month	600	0.59	0	2	12	7
Taxiways	Lighting	Loader	Diesel	0.3	hours per month	175	0.59	0	2	12	7
Taxiways	Lighting	Other General Equipment	Diesel	0.3	hours per month	175	0.43	0	2	12	7
Taxiways	Lighting	Pickup Truck	Diesel	4.2	miles per month	600	0.59	0	2	12	7
Taxiways	Lighting	Skid Steer Loader	Diesel	0.3	hours per month	75	0.21	0	2	12	7
Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	0.3	hours per month	100	0.21	0	2	12	7
Taxiways	Markings	Flatbed Truck	Diesel	36.1	miles per month	600	0.59	0	2	12	7
Taxiways	Markings	Other General Equipment	Diesel	2.4	hours per month	175	0.43	0	2	12	7
Taxiways	Markings	Pickup Truck	Diesel	36.1	miles per month	600	0.59	0	2	12	7
Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	0.1	hours per month	175	0.43	0	2	12	7
Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	3.5	miles per month	600	0.59	0	2	12	7
Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	0.1	hours per month	11	0.43	0	2	12	7

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Units	Horsepower	Load Factor	Schedule (Months per year)			
								2027	2028	2029	2030
Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	0.1	hours per month	100	0.21	0	2	12	7
Taxiways	Subbase Placement	Dozer	Diesel	0.2	hours per month	175	0.59	0	2	12	7
Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	26.0	miles per month	600	0.59	0	2	12	7
Taxiways	Subbase Placement	Pickup Truck	Diesel	3.7	miles per month	600	0.59	0	2	12	7
Taxiways	Subbase Placement	Roller	Diesel	0.2	hours per month	100	0.59	0	2	12	7
Taxiways	Topsoil Placement	Dozer	Diesel	0.3	hours per month	175	0.59	0	2	12	7
Taxiways	Topsoil Placement	Dump Truck	Diesel	4.7	miles per month	600	0.59	0	2	12	7
Taxiways	Topsoil Placement	Pickup Truck	Diesel	4.7	miles per month	600	0.59	0	2	12	7
Conversion of Existing Runway 5/23 (to a taxiway for the new runway)											
Taxiways	Asphalt Placement	Asphalt Paver	Diesel	14.8	hours per month	175	0.59	0	0	6	0
Taxiways	Asphalt Placement	Dump Truck	Diesel	797.7	miles per month	600	0.59	0	0	6	0
Taxiways	Asphalt Placement	Other General Equipment	Diesel	29.5	hours per month	175	0.43	0	0	6	0
Taxiways	Asphalt Placement	Pickup Truck	Diesel	221.5	miles per month	600	0.59	0	0	6	0
Taxiways	Asphalt Placement	Roller	Diesel	14.8	hours per month	100	0.59	0	0	6	0
Taxiways	Asphalt Placement	Skid Steer Loader	Diesel	14.8	hours per month	75	0.21	0	0	6	0
Taxiways	Asphalt Placement	Surfacing Equipment (Grooving)	Diesel	18.9	hours per month	25	0.59	0	0	6	0
Taxiways	Clearing and Grubbing	Chain Saw	Diesel	35.2	hours per month	11	0.70	0	0	6	0
Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	35.2	hours per month	100	0.43	0	0	6	0
Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	704.9	miles per month	600	0.59	0	0	6	0
Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	68.2	hours per month	175	0.59	0	0	6	0
Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	1,022.6	miles per month	600	0.59	0	0	6	0
Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	68.2	hours per month	175	0.59	0	0	6	0
Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	68.2	hours per month	175	0.59	0	0	6	0
Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	68.2	hours per month	175	0.43	0	0	6	0
Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	1,022.6	miles per month	600	0.59	0	0	6	0
Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	68.2	hours per month	100	0.59	0	0	6	0
Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	568.1	miles per month	600	0.59	0	0	6	0
Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	37.9	hours per month	175	0.59	0	0	6	0
Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	37.9	hours per month	175	0.43	0	0	6	0
Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	568.1	miles per month	600	0.59	0	0	6	0
Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	37.9	hours per month	100	0.21	0	0	6	0
Taxiways	Excavation (Borrow)	Dozer	Diesel	65.6	hours per month	175	0.59	0	0	6	0
Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	984.4	miles per month	600	0.59	0	0	6	0
Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	984.4	miles per month	600	0.59	0	0	6	0
Taxiways	Excavation (Borrow)	Roller	Diesel	30.3	hours per month	100	0.59	0	0	6	0
Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	49.2	hours per month	175	0.59	0	0	6	0
Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	1,968.7	miles per month	600	0.59	0	0	6	0
Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	39.4	hours per month	175	0.59	0	0	6	0
Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	590.6	miles per month	600	0.59	0	0	6	0
Taxiways	Excavation (Cut to Fill)	Roller	Diesel	39.4	hours per month	100	0.59	0	0	6	0
Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	49.2	hours per month	600	0.59	0	0	6	0
Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	18.5	hours per month	175	0.59	0	0	6	0
Taxiways	Fencing	Concrete Truck	Diesel	23.6	hours per month	600	0.59	0	0	6	0
Taxiways	Fencing	Dump Truck	Diesel	1,418.9	miles per month	600	0.59	0	0	6	0
Taxiways	Fencing	Other General Equipment	Diesel	94.6	hours per month	175	0.43	0	0	6	0

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Units	Horsepower	Load Factor	Schedule (Months per year)			
								2027	2028	2029	2030
Taxiways	Fencing	Pickup Truck	Diesel	1,418.9	miles per month	600	0.59	0	0	6	0
Taxiways	Fencing	Skid Steer Loader	Diesel	94.6	hours per month	75	0.21	0	0	6	0
Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	94.6	hours per month	100	0.21	0	0	6	0
Taxiways	Grading	Dozer	Diesel	14.2	hours per month	175	0.59	0	0	6	0
Taxiways	Grading	Grader	Diesel	14.2	hours per month	300	0.59	0	0	6	0
Taxiways	Grading	Roller	Diesel	14.2	hours per month	100	0.59	0	0	6	0
Taxiways	Hydroseeding	Hydroseeder	Diesel	12.8	hours per month	600	0.59	0	0	6	0
Taxiways	Hydroseeding	Off-Road Truck	Diesel	12.8	hours per month	600	0.59	0	0	6	0
Taxiways	Lighting	Dump Truck	Diesel	427.8	miles per month	600	0.59	0	0	6	0
Taxiways	Lighting	Loader	Diesel	28.5	hours per month	175	0.59	0	0	6	0
Taxiways	Lighting	Other General Equipment	Diesel	28.5	hours per month	175	0.43	0	0	6	0
Taxiways	Lighting	Pickup Truck	Diesel	427.8	miles per month	600	0.59	0	0	6	0
Taxiways	Lighting	Skid Steer Loader	Diesel	28.5	hours per month	75	0.21	0	0	6	0
Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	28.5	hours per month	100	0.21	0	0	6	0
Taxiways	Markings	Flatbed Truck	Diesel	3,648.6	miles per month	600	0.59	0	0	6	0
Taxiways	Markings	Other General Equipment	Diesel	243.2	hours per month	175	0.43	0	0	6	0
Taxiways	Markings	Pickup Truck	Diesel	3,648.6	miles per month	600	0.59	0	0	6	0
Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	11.7	hours per month	175	0.43	0	0	6	0
Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	352.5	miles per month	600	0.59	0	0	6	0
Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11.7	hours per month	11	0.43	0	0	6	0
Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	11.7	hours per month	100	0.21	0	0	6	0
Taxiways	Subbase Placement	Dozer	Diesel	24.9	hours per month	175	0.59	0	0	6	0
Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	2,624.9	miles per month	600	0.59	0	0	6	0
Taxiways	Subbase Placement	Pickup Truck	Diesel	373.0	miles per month	600	0.59	0	0	6	0
Taxiways	Subbase Placement	Roller	Diesel	24.2	hours per month	100	0.59	0	0	6	0
Taxiways	Topsoil Placement	Dozer	Diesel	31.5	hours per month	175	0.59	0	0	6	0
Taxiways	Topsoil Placement	Dump Truck	Diesel	473.0	miles per month	600	0.59	0	0	6	0
Taxiways	Topsoil Placement	Pickup Truck	Diesel	473.0	miles per month	600	0.59	0	0	6	0
Construction of Extended Parallel Taxiway											
Taxiways	Asphalt Placement	Asphalt Paver	Diesel	9.8	hours per month	175	0.59	0	0	2	7
Taxiways	Asphalt Placement	Dump Truck	Diesel	526.9	miles per month	600	0.59	0	0	2	7
Taxiways	Asphalt Placement	Other General Equipment	Diesel	19.5	hours per month	175	0.43	0	0	2	7
Taxiways	Asphalt Placement	Pickup Truck	Diesel	146.3	miles per month	600	0.59	0	0	2	7
Taxiways	Asphalt Placement	Roller	Diesel	9.8	hours per month	100	0.59	0	0	2	7
Taxiways	Asphalt Placement	Skid Steer Loader	Diesel	9.8	hours per month	75	0.21	0	0	2	7
Taxiways	Asphalt Placement	Surfacing Equipment (Grooving)	Diesel	12.5	hours per month	25	0.59	0	0	2	7
Taxiways	Clearing and Grubbing	Chain Saw	Diesel	23.3	hours per month	11	0.70	0	0	2	7
Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	23.3	hours per month	100	0.43	0	0	2	7
Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	465.6	miles per month	600	0.59	0	0	2	7
Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	45.0	hours per month	175	0.59	0	0	2	7
Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	675.4	miles per month	600	0.59	0	0	2	7
Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	45.0	hours per month	175	0.59	0	0	2	7
Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	45.0	hours per month	175	0.59	0	0	2	7
Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	45.0	hours per month	175	0.43	0	0	2	7
Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	675.4	miles per month	600	0.59	0	0	2	7

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Units	Horsepower	Load Factor	Schedule (Months per year)			
								2027	2028	2029	2030
Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	45.0	hours per month	100	0.59	0	0	2	7
Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	375.2	miles per month	600	0.59	0	0	2	7
Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	25.0	hours per month	175	0.59	0	0	2	7
Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	25.0	hours per month	175	0.43	0	0	2	7
Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	375.2	miles per month	600	0.59	0	0	2	7
Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	25.0	hours per month	100	0.21	0	0	2	7
Taxiways	Excavation (Borrow)	Dozer	Diesel	43.3	hours per month	175	0.59	0	0	2	7
Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	650.2	miles per month	600	0.59	0	0	2	7
Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	650.2	miles per month	600	0.59	0	0	2	7
Taxiways	Excavation (Borrow)	Roller	Diesel	20.0	hours per month	100	0.59	0	0	2	7
Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	32.5	hours per month	175	0.59	0	0	2	7
Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	1,300.3	miles per month	600	0.59	0	0	2	7
Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	26.0	hours per month	175	0.59	0	0	2	7
Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	390.1	miles per month	600	0.59	0	0	2	7
Taxiways	Excavation (Cut to Fill)	Roller	Diesel	26.0	hours per month	100	0.59	0	0	2	7
Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	32.5	hours per month	600	0.59	0	0	2	7
Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	12.2	hours per month	175	0.59	0	0	2	7
Taxiways	Fencing	Concrete Truck	Diesel	15.6	hours per month	600	0.59	0	0	2	7
Taxiways	Fencing	Dump Truck	Diesel	937.2	miles per month	600	0.59	0	0	2	7
Taxiways	Fencing	Other General Equipment	Diesel	62.5	hours per month	175	0.43	0	0	2	7
Taxiways	Fencing	Pickup Truck	Diesel	937.2	miles per month	600	0.59	0	0	2	7
Taxiways	Fencing	Skid Steer Loader	Diesel	62.5	hours per month	75	0.21	0	0	2	7
Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	62.5	hours per month	100	0.21	0	0	2	7
Taxiways	Grading	Dozer	Diesel	9.4	hours per month	175	0.59	0	0	2	7
Taxiways	Grading	Grader	Diesel	9.4	hours per month	300	0.59	0	0	2	7
Taxiways	Grading	Roller	Diesel	9.4	hours per month	100	0.59	0	0	2	7
Taxiways	Hydroseeding	Hydroseeder	Diesel	8.4	hours per month	600	0.59	0	0	2	7
Taxiways	Hydroseeding	Off-Road Truck	Diesel	8.4	hours per month	600	0.59	0	0	2	7
Taxiways	Lighting	Dump Truck	Diesel	282.6	miles per month	600	0.59	0	0	2	7
Taxiways	Lighting	Loader	Diesel	18.8	hours per month	175	0.59	0	0	2	7
Taxiways	Lighting	Other General Equipment	Diesel	18.8	hours per month	175	0.43	0	0	2	7
Taxiways	Lighting	Pickup Truck	Diesel	282.6	miles per month	600	0.59	0	0	2	7
Taxiways	Lighting	Skid Steer Loader	Diesel	18.8	hours per month	75	0.21	0	0	2	7
Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	18.8	hours per month	100	0.21	0	0	2	7
Taxiways	Markings	Flatbed Truck	Diesel	2,409.9	miles per month	600	0.59	0	0	2	7
Taxiways	Markings	Other General Equipment	Diesel	160.7	hours per month	175	0.43	0	0	2	7
Taxiways	Markings	Pickup Truck	Diesel	2,409.9	miles per month	600	0.59	0	0	2	7
Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	7.8	hours per month	175	0.43	0	0	2	7
Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	232.8	miles per month	600	0.59	0	0	2	7
Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	7.8	hours per month	11	0.43	0	0	2	7
Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	7.8	hours per month	100	0.21	0	0	2	7
Taxiways	Subbase Placement	Dozer	Diesel	16.4	hours per month	175	0.59	0	0	2	7
Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	1,733.8	miles per month	600	0.59	0	0	2	7
Taxiways	Subbase Placement	Pickup Truck	Diesel	246.4	miles per month	600	0.59	0	0	2	7
Taxiways	Subbase Placement	Roller	Diesel	16.0	hours per month	100	0.59	0	0	2	7

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Units	Horsepower	Load Factor	Schedule (Months per year)			
								2027	2028	2029	2030
Taxiways	Topsoil Placement	Dozer	Diesel	20.8	hours per month	175	0.59	0	0	2	7
Taxiways	Topsoil Placement	Dump Truck	Diesel	312.4	miles per month	600	0.59	0	0	2	7
Taxiways	Topsoil Placement	Pickup Truck	Diesel	312.4	miles per month	600	0.59	0	0	2	7
Tree and Obstruction Removal											
Site Work - 10000 sqft	Construction Mob & Layout	Survey Crew Trucks	Diesel	1,947.9	miles per month	600	0.59	3	6	0	0
Site Work - 10000 sqft	Construction Mob & Layout	Tractor Trailers Temp Fac.	Diesel	779.1	miles per month	600	0.59	3	6	0	0
Site Work - 10000 sqft	Site Clearing- Remove Trees & Shrubs	Bulldozer	Diesel	519.4	hours per month	175	0.59	3	6	0	0
Site Work - 10000 sqft	Site Clearing- Remove Trees & Shrubs	Chain Saws	Diesel	519.4	hours per month	11	0.70	3	6	0	0
Site Work - 10000 sqft	Site Clearing- Remove Trees & Shrubs	Flat Bed or Dump Trucks	Diesel	15,582.9	miles per month	600	0.59	3	6	0	0
Site Work - 10000 sqft	Site Clearing- Remove Trees & Shrubs	Front Loader	Diesel	519.4	hours per month	100	0.21	3	6	0	0
Site Work - 10000 sqft	Site Clearing- Remove Trees & Shrubs	Grub the site down 2'-0	Diesel	519.4	hours per month	40	0.59	3	6	0	0
Site Work - 10000 sqft	Site Clearing- Remove Trees & Shrubs	Log Chipper	Diesel	519.4	hours per month	100	0.43	3	6	0	0
Site Work - 10000 sqft	Site Clearing- Remove Trees & Shrubs	Mulcher	Diesel	519.4	hours per month	100	0.43	3	6	0	0
Site Work - 10000 sqft	Site Clearing- Remove Trees & Shrubs	Ten Wheelers	Diesel	7,791.4	miles per month	600	0.59	3	6	0	0
Site Work - 10000 sqft	Site Clearing- Remove Trees & Shrubs	Tractor	Diesel	1,038.9	hours per month	100	0.21	3	6	0	0
THROUGHOUT THE PROJECT	Dust Control	Water Truck	Diesel	1,028.6	miles per month	600	0.59	11	12	12	7

Attachment 2 - UGN Construction Vehicle Types and Activity Levels

ACEIT Airport Project	Construction Activity	ACEIT Equipment	Fuel Type	Activity Levels	Schedule (Months per year)			
					2027	2028	2029	2030
Roadway Tunnel Construction								
Access Road	Asphalt 18 Wheeler	Material Delivery	Diesel	65	2	12	10	0
Access Road	Dump Truck - Asphalt	Material Delivery	Diesel	92	2	12	10	0
Access Road	Dump Truck Subbase Material	Material Delivery	Diesel	550	2	12	10	0
Access Road	Passenger Car	Employee Commute	Gasoline	62,888	2	12	10	0
Demolition existing runway								
Demolition - Concrete	Dump Truck	Material Delivery	Diesel	2,646	0	0	6	0
Demolition - Concrete	Passenger Car	Employee Commute	Gasoline	6,450	0	0	6	0
Completion of Perimeter Fence								
Fencing	Cement Mixer	Material Delivery	Diesel	8,695	11	0	0	0
Fencing	Passenger Car	Employee Commute	Gasoline	33,056	11	0	0	0
Installation of NAVAIDS								
NAVAIDS	Passenger Car	Employee Commute	Gasoline	25,800	0	0	6	0
Construction of Relocated Runway 5/23								
New Runway	Asphalt 18 Wheeler	Material Delivery	Diesel	622	5	12	4	0
New Runway	Dump Truck - Asphalt	Material Delivery	Diesel	881	5	12	4	0
New Runway	Dump Truck Subbase Material	Material Delivery	Diesel	5,286	5	12	4	0
New Runway	Passenger Car	Employee Commute	Gasoline	62,081	5	12	4	0
Construction of Parallel Taxiway Bridge								
Taxiways	Asphalt 18 Wheeler	Material Delivery	Diesel	15	0	2	12	7
Taxiways	Dump Truck - Asphalt	Material Delivery	Diesel	22	0	2	12	7
Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	130	0	2	12	7
Taxiways	Passenger Car	Employee Commute	Gasoline	54,019	0	2	12	7
Conversion of Existing Runway 5/23 (to a taxiway for the new runway)								
Taxiways	Asphalt 18 Wheeler	Material Delivery	Diesel	1,544	0	0	6	0
Taxiways	Dump Truck - Asphalt	Material Delivery	Diesel	2,188	0	0	6	0
Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	13,125	0	0	6	0
Taxiways	Passenger Car	Employee Commute	Gasoline	84,656	0	0	6	0
Construction of Extended Parallel Taxiway								
Taxiways	Asphalt 18 Wheeler	Material Delivery	Diesel	1,020	0	0	2	7
Taxiways	Dump Truck - Asphalt	Material Delivery	Diesel	1,445	0	0	2	7
Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	8,669	0	0	2	7
Taxiways	Passenger Car	Employee Commute	Gasoline	70,950	0	0	2	7
Tree and Obstruction Removal								
Site Work - 10000 sqft	Dump Truck Subbase Material	Material Delivery	Diesel	16,011	3	6	0	0
Site Work - 10000 sqft	Passenger Car	Employee Commute	Gasoline	82,238	3	6	0	0
Site Work - 10000 sqft	Tractor Trailer	Material Delivery	Diesel	16,011	3	6	0	0

Attachment 3 - UGN Construction Equipment and Vehicle Emission Factors

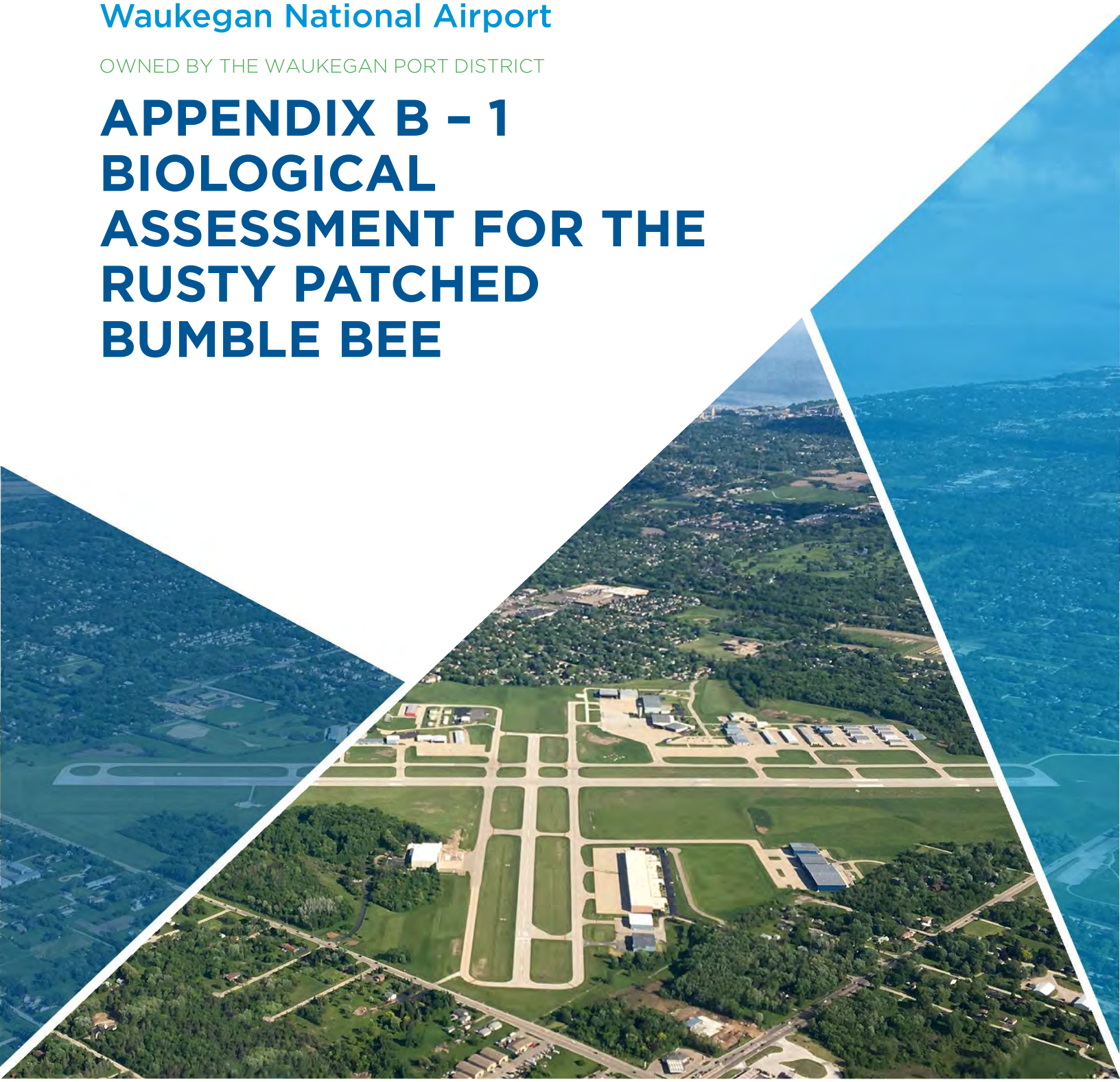
ACEIT Equipment/Vehicle Type	Fuel Type	2027						2028						2029						2030					
		CO	NO_x	SO_2	PM_{10}	$PM2.5$	VOC	CO	NO_x	SO_2	PM_{10}	$PM2.5$	VOC	CO	NO_x	SO_2	PM_{10}	$PM2.5$	VOC	CO	NO_x	SO_2	PM_{10}	$PM2.5$	VOC
Construction Off-Road Equipment (grams/Hp-hr)																									
Asphalt Paver	Diesel	0.109	0.652	0.0015	0.019	0.018	0.022	0.099	0.629	0.001	0.017	0.016	0.021	0.090	0.609	0.001	0.015	0.015	0.020	0.082	0.592	0.001	0.014	0.013	0.019
Dump Truck	Diesel	1.121	1.582	0.003	0.029	0.027	0.092	1.085	1.435	0.003	0.024	0.022	0.081	1.053	1.310	0.003	0.020	0.019	0.072	1.027	1.199	0.003	0.017	0.016	0.065
Other General Equipment	Diesel	0.154	0.686	0.001	0.029	0.028	0.030	0.127	0.624	0.001	0.024	0.023	0.026	0.106	0.575	0.001	0.020	0.019	0.022	0.094	0.544	0.001	0.018	0.017	0.020
Pickup Truck	Diesel	2.507	1.425	0.002	0.060	0.055	0.216	2.336	1.284	0.002	0.053	0.049	0.191	2.291	1.170	0.002	0.047	0.043	0.175	2.209	1.081	0.002	0.042	0.039	0.160
Roller	Diesel	0.176	0.847	0.002	0.027	0.027	0.035	0.161	0.821	0.002	0.025	0.024	0.033	0.149	0.800	0.002	0.023	0.022	0.032	0.139	0.781	0.001	0.021	0.020	0.031
Skid Steer Loader	Diesel	3.434	3.954	0.002	0.511	0.496	0.682	3.025	3.678	0.002	0.443	0.430	0.596	2.536	3.367	0.002	0.372	0.360	0.503	2.057	3.076	0.002	0.307	0.298	0.416
Surfacing Equipment (Grooving)	Diesel	0.550	1.755	0.002	0.074	0.072	0.094	0.483	1.629	0.002	0.064	0.062	0.085	0.432	1.534	0.002	0.057	0.056	0.078	0.386	1.446	0.002	0.051	0.050	0.071
Chain Saw	Diesel	0.380	1.955	0.002	0.045	0.044	0.081	0.345	1.920	0.002	0.040	0.039	0.077	0.314	1.890	0.002	0.036	0.035	0.073	0.274	1.853	0.002	0.030	0.029	0.069
Chipper/Stump Grinder	Diesel	0.747	2.226	0.002	0.131	0.127	0.155	0.679	2.048	0.002	0.120	0.116	0.139	0.612	1.874	0.002	0.108	0.105	0.124	0.550	1.722	0.002	0.098	0.095	0.111
Concrete Truck	Diesel	0.063	1.383	0.001	0.018	0.018	0.026	0.057	1.376	0.001	0.017	0.017	0.026	0.054	1.372	0.001	0.017	0.016	0.025	0.053	1.369	0.001	0.017	0.016	0.025
Curb/Gutter Paver	Diesel	0.000	0.000	0.001	0.019	0.018	0.022	0.099	0.629	0.001	0.017	0.016	0.021	0.090	0.609	0.001	0.015	0.015	0.020	0.082	0.592	0.001	0.014	0.013	0.019
Dozer	Diesel	0.103	0.559	0.001	0.020	0.019	0.021	0.083	0.517	0.001	0.017	0.017	0.019	0.064	0.479	0.001	0.014	0.014	0.016	0.050	0.453	0.001	0.012	0.012	0.015
Excavator	Diesel	0.061	0.338	0.001	0.013	0.012	0.015	0.054	0.323	0.001	0.011	0.011	0.014	0.051	0.317	0.001	0.011	0.010	0.014	0.049	0.313	0.001	0.010	0.010	0.014
Loader	Diesel	1.166	1.825	0.002	0.194	0.188	0.261	1.023	1.688	0.002	0.170	0.165	0.229	0.893	1.561	0.002	0.149	0.145	0.199	0.774	1.445	0.002	0.129	0.125	0.172
Tractors/Loader/Backhoe	Diesel	1.166	1.825	0.002	0.194	0.188	0.261	1.023	1.688	0.002	0.170	0.165	0.229	0.893	1.561	0.002	0.149	0.145	0.199	0.774	1.445	0.002	0.129	0.125	0.172
Water Truck	Diesel	1.121	1.582	0.003	0.029	0.027	0.092	1.085	1.435	0.003	0.024	0.022	0.081	1.053	1.310	0.003	0.020	0.019	0.072	1.027	1.199	0.003	0.017	0.016	0.065
Dump Truck (12 cy)	Diesel	1.121	1.582	0.003	0.029	0.027	0.092	1.085	1.435	0.003	0.024	0.022	0.081	1.053	1.310	0.003	0.020	0.019	0.072	1.027	1.199	0.003	0.017	0.016	0.065
Scraper	Diesel	0.111	0.284	0.001	0.018	0.018	0.019	0.087	0.234	0.001	0.015	0.015	0.017	0.063	0.188	0.001	0.012	0.012	0.014	0.043	0.150	0.001	0.010	0.009	0.012
Grader	Diesel	0.053	0.203	0.001	0.012	0.012	0.013	0.044	0.179	0.001	0.011	0.010	0.011	0.037	0.159	0.001	0.009	0.009	0.011	0.032	0.147	0.001	0.008	0.008	0.010
Hydroseeder	Diesel	0.683	1.762	0.002	0.116	0.112	0.124	0.613	1.614	0.002	0.104	0.101	0.110	0.545	1.464	0.002	0.092	0.090	0.098	0.484	1.325	0.002	0.083	0.080	0.087
Off-Road Truck	Diesel	0.063	1.383	0.001	0.018	0.018	0.026	0.057	1.376	0.001	0.017	0.017	0.026	0.054	1.372	0.001	0.017	0.016	0.025	0.053	1.369	0.001	0.017	0.016	0.025
Flatbed Truck	Diesel	2.403	4.179	0.006	0.033	0.030	0.125	2.368	3.868	0.006	0.027	0.025	0.117	2.339	3.580	0.005	0.023	0.021	0.110	2.318	3.322	0.005	0.020	0.018	0.104
Vibratory Compactor	Diesel	2.182	4.059	0.002	0.227	0.220	0.678	2.163	4.050	0.002	0.223	0.216	0.677	2.142	4.045	0.002	0.217	0.211	0.676	2.124	4.042	0.002	0.213	0.206	0.675
Pumps	Diesel	0.946	2.624	0.002	0.155	0.150	0.220	0.873	2.480	0.002	0.140	0.136	0.203	0.794	2.323	0.002	0.126	0.122	0.184	0.727	2.194	0.002	0.114	0.110	0.169
Excavator with Bucket	Diesel	0.061	0.338	0.001	0.013	0.012	0.015	0.054	0.323	0.001	0.011	0.011	0.014	0.051	0.317	0.001	0.011	0.010	0.014	0.049	0.313	0.001	0.010	0.010	0.014
Excavator with Hoe Ram	Diesel	0.061	0.338	0.001	0.013	0.012	0.015	0.054	0.323	0.001	0.011	0.011	0.014	0.051	0.317	0.001	0.011	0.010	0.014	0.049	0.313	0.001	0.010	0.010	0.014
Air Compressor	Diesel	0.283	1.477	0.002	0.044	0.043	0.052	0.245	1.409	0.002	0.037	0.036	0.046	0.205	1.353	0.002	0.031	0.030	0.040	0.176	1.306	0.002	0.026	0.025	0.036
Crane	Diesel	0.102	0.471	0.001	0.020	0.019	0.024	0.087	0.416	0.001	0.017	0.017	0.021	0.076	0.374	0.001	0.015	0.015	0.019	0.067	0.337	0.001	0.014	0.013	0.017
Survey Crew Trucks	Diesel	2.507	1.425	0.002	0.060	0.055	0.216	2.336	1.284	0.002	0.053	0.049	0.191	2.291	1.170	0.002	0.047	0.043	0.175	2.209	1.081	0.002	0.042	0.039	0.160
Tractor Trailers Temp Fac.	Diesel	2.403	4.179	0.006	0.033	0.030	0.125	2.368	3.868	0.006	0.027	0.025	0.117	2.339	3.580	0.005	0.023	0.021	0.110	2.318	3.322	0.005	0.020	0.018	0.104
Bulldozer	Diesel	0.103	0.559	0.001	0.020	0.019	0.021	0.083	0.517	0.001	0.017	0.017	0.019	0.064	0.479	0.001	0.014	0.014	0.016	0.050	0.453	0.001	0.012	0.012	0.015
Chain Saws	Diesel	0.380	1.955	0.002	0.045	0.044	0.081	0.345	1.920	0.002	0.040	0.039	0.077	0.314	1.890	0.002	0.036	0.035	0.073	0.274	1.853	0.002	0.030	0.029	0.069
Flat Bed or Dump Trucks	Diesel	2.403	4.179	0.006	0.033	0.030	0.125	2.368	3.868	0.006	0.027	0.025	0.117	2.339	3.580	0.005	0.023	0.021	0.110	2.318	3.322	0.005	0.020	0.018	0.104
Front Loader	Diesel	1.166	1.825	0.002	0.194	0.188	0.261	1.023	1.688	0.002	0.170	0.165	0.229	0.893	1.561	0.002	0.149	0.145	0.199	0.774	1.445	0.002	0.129	0.125	0.172
Grub the site down 2'-0	Diesel	0.368	0.989	0.002	0.051	0.049	0.054	0.320	0.879	0.002	0.044	0.043	0.047	0.275	0.779	0.001	0.039	0.037	0.041	0.234	0.687	0.001	0.033	0.032	0.036

ACEIT Equipment/Vehicle Type	Fuel Type	2027						2028						2029						2030					
		CO	NO_x	SO_2	PM_{10}	$PM2.5$	VOC	CO	NO_x	SO_2	PM_{10}	$PM2.5$	VOC	CO	NO_x	SO_2	PM_{10}	$PM2.5$	VOC	CO	NO_x	SO_2	PM_{10}	$PM2.5$	VOC
Log Chipper	Diesel	0.747	2.226	0.002	0.131	0.127	0.155	0.679	2.048	0.002	0.120	0.116	0.139	0.612	1.874	0.002	0.108	0.105	0.124	0.550	1.722	0.002	0.098	0.095	0.111
Mulcher	Diesel	0.683	1.762	0.002	0.116	0.112	0.124	0.613	1.614	0.002	0.104	0.101	0.110	0.545	1.464	0.002	0.092	0.090	0.098	0.484	1.325	0.002	0.083	0.080	0.087
Ten Wheelers	Diesel	2.403	4.179	0.006	0.033	0.030	0.125	2.368	3.868	0.006	0.027	0.025	0.117	2.339	3.580	0.005	0.023	0.021	0.110	2.318	3.322	0.005	0.020	0.018	0.104
Tractor	Diesel	0.103	0.559	0.001	0.020	0.019	0.021	0.083	0.517	0.001	0.017	0.017	0.019	0.064	0.479	0.001	0.014	0.014	0.016	0.050	0.453	0.001	0.012	0.012	0.015
Construction On-Road Vehicles (grams/mile)																									
Asphalt 18 Wheeler/Tractor Trailer	Diesel	2.40	4.18	0.01	0.03	0.03	0.12	2.368	3.868	0.006	0.027	0.025	0.117	2.339	3.580	0.005	0.023	0.021	0.110	2.318	3.322	0.005	0.020	0.018	0.104
Cement Mixer/Dump Truck/Dump Truck – Asphalt/Dump Truck Subbase Material	Diesel	1.12	1.58	0.00	0.03	0.03	0.09	1.085	1.435	0.003	0.024	0.022	0.081	1.053	1.310	0.003	0.020	0.019	0.072	1.027	1.199	0.003	0.017	0.016	0.065
Passenger Car	Gasoline	3.93	0.08	0.00	0.00	0.00	0.09	3.794	0.071	0.002	0.002	0.002	0.087	3.660	0.064	0.002	0.002	0.002	0.085	3.535	0.063	0.002	0.002	0.002	0.085

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX B – 1 BIOLOGICAL ASSESSMENT FOR THE RUSTY PATCHED BUMBLE BEE



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

US Department of Transportation
Federal Aviation Administration
Great Lakes Region
Chicago Airports District Office

DRAFT BIOLOGICAL ASSESSMENT FOR THE RUSTY PATCHED BUMBLE BEE

for the Replacement Runway 5-23 Program and Airport Security Fence Replacement

at the

Waukegan National Airport

Waukegan, Lake County, Illinois

December 2022

TABLE OF CONTENTS

1 Project Description 1
1.1 Location 1
1.2 Definition of Action Area 3
1.3 Action 4
1.4 Existing Conditions 7
1.5 Purpose and Need 8
1.6 Alternatives 8
No Action Alternative 8
Fence replacement alternative – Action 8
2 Description of the action area Species and Their Habitat 9
2.1 Species with a Determination of No Effect 9
2.1.1 Northern Long-eared Bat (*Myotis septentrionalis*) 9
2.1.2 piping plover (*Charadrius melodus*) 10
2.1.3 Red Knot (*Calidris canutus rufa*) 10
2.1.4 Karner Blue Butterfly (*Lycaeides melissa samuelis*) 11
2.1.5 Eastern Prairie Fringed Orchid (*Platanthera leucophaea*) 11
2.1.6 Pitcher's thistle (*Cirsium pitcheri*) 11
2.2 Rusty Patched BumbleBee (*Bombus Affinis*) 12
2.2.1 Description of Species and General Habitat Requirements 12
2.2.2 Foraging Habitat Requirements 12
2.2.3 Nesting Habitat Requirements 13
2.2.4 Overwintering Habitat Requirements 13
2.2.5 Relationship of Habitat in action Area to Local Populations 14
2.2.6 Species Information in Action Area 15
2.2.7 Designated or Proposed Critical Habitat 16
3 Environmental Baseline 17
4 Effects of the Action 19
4.1 Direct Effects 19
4.1.1 Loss of Habitat 19
4.1.2 Direct Contact with Construction Equipment and/or Personnel 21
4.1.3 Hazardous material and Chemical Spills 21
4.2 Indirect Effects 21
4.2.1 Direct Contact with Vehicles 21
4.2.2 Chemical Applications 22
4.3 Cumulative Effects 22
5 Determination of Effect 23
5.1 Conservation Measures 23

References 24

Appendix A – Mapping and Exhibits
Appendix B – Data
Appendix C – Regulatory Coordination

1 PROJECT DESCRIPTION

1.1 LOCATION

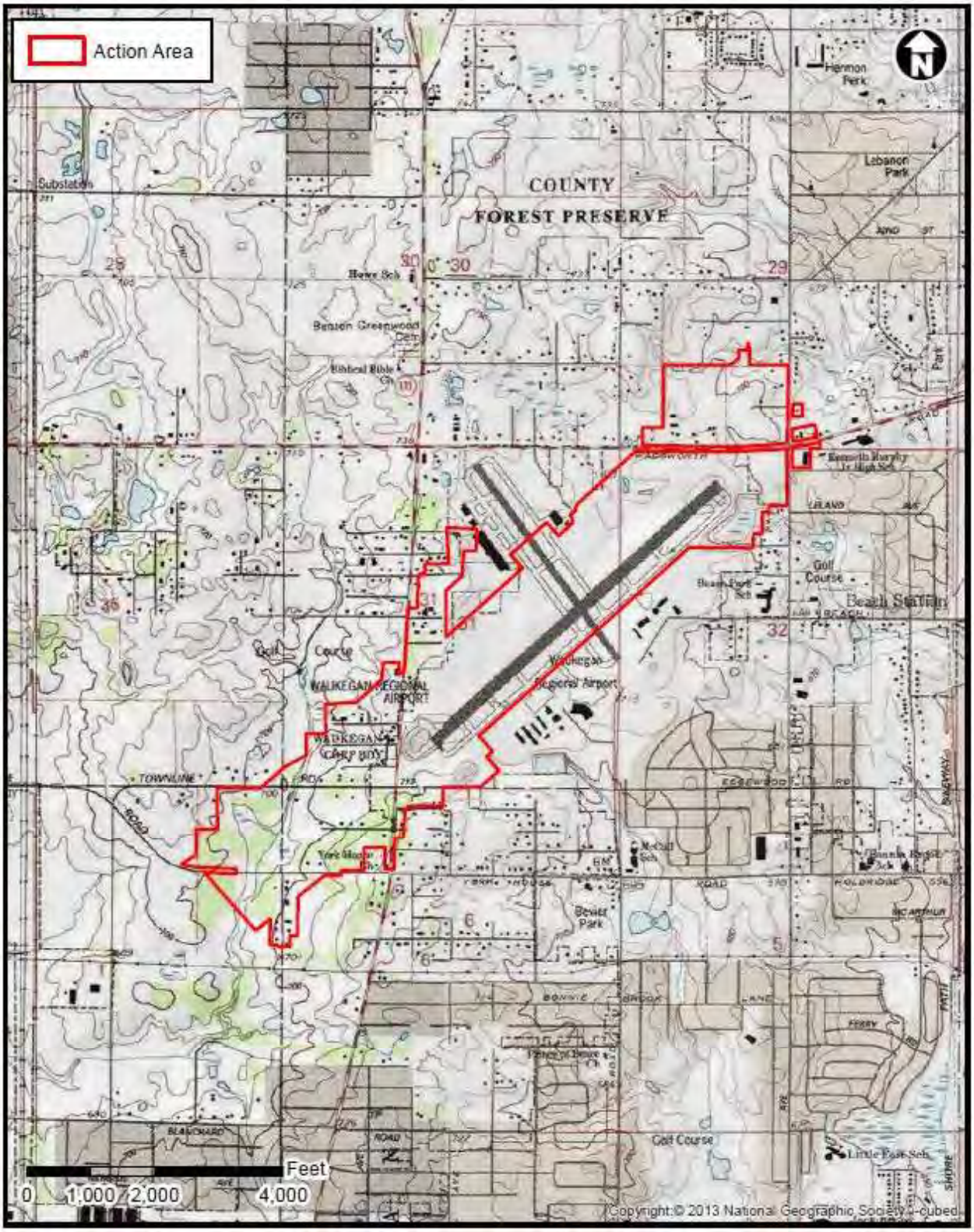
The Waukegan National Airport (UGN) is located in northern Illinois in the northern part of Lake County (Township 46N, Range 12E, Section 31 and 32), See Figure 1 below. UGN encompasses 535 acres and is generally bound by Illinois State Route 131 (North Green Bay Rd) to the west, West Wadsworth Road to the north, North Lewis Avenue to the east, and York House Road to the south.

The Sponsor's Proposed Action, as defined in the Replacement Runway 5/23 Preliminary Draft Environmental Assessment (PDEA) and Fence Replacement – Phase 5 (Northwest Area) Categorical Exclusion document, includes replacement of existing Runway 5-23 and replacement of airport security fencing, as shown in Figures 3 and 4, respectively. The Action is described in Section 1.8 of the Preliminary Draft Environmental Assessment (PDEA).

Existing land use within the project area is urbanized with residential, commercial, and some industrial areas. Most of the surface surrounding the runways, taxiways, and ramp space is mowed grass. There are various small, wooded areas surrounding the airfield as well. Additionally, residential areas, businesses, parks and natural areas, and schools make up most of the surrounding land of the airport. The Waukegan Savanna Forest Preserve is also located further to the southwest.

Additional location mapping is included in Appendix A of the PDEA.

FIGURE 1 – PROJECT LOCATION



1.2 DEFINITION OF ACTION AREA

The Action Area is a project area applicable to consultation under the Endangered Species Act. It is defined as all areas to be affected directly or indirectly by the FAA action and not merely the immediate area involved in the action (see 50 CFR § 402.02). The Action Area includes the proposed Replacement Runway 5-23 Program and the Airport Security Fence Replacement Program, both part of the Sponsor's Proposed Action (Action), as shown in Figure 2. The Action Area is a total of 527.5 acres.

FIGURE 2 – ACTION AREA



1.3 ACTION

This Action evaluated for this Biological Assessment includes two projects which are assessed under the following environmental documents:

- Preliminary Draft Environmental Assessment for the Replacement Runway 5/23, pending
- Categorical Exclusion for the Fence Replacement – Phase 5 (Northwest Area), March 2021

Based on the above-mentioned environmental documents, the Waukegan Port District proposes to replace the existing Runway 5-23 with a new runway, 400 feet northwest and parallel to the present runway. As defined in the environmental documents mentioned above, the replacement runway will address numerous airport safety and design issues, and replace parts of the airport's surrounding fence. These proposed actions have to do with increased corporate activity, as well as added operational and maintenance responsibilities. The project improvements covered by the PDEA and Categorical Exclusion mentioned above include the following:

Replacement Runway

- Acquisition of approximately 133 acres of land in fee simple title and approximately 9.2 acres in avigation easements. This includes the relocation of 28 residences and 6 businesses and purchase of approximately 52 acres from the Lake County Forest Preserve District. This action includes procedures outlined in the Federal Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs.
- Construct a new replacement Runway 5/23 of 7,000 feet long and 150 feet wide. The replacement runway would be 400 feet from centerline-to-centerline northwest of the existing Runway 5/23 with a pavement strength of 164,000 pounds dual wheel load.
- Construct a roadway tunnel allowing for replacement Runway 5-23 to be constructed over Illinois Route 131-Green Bay Road. The tunnel includes the installation of a pump station (with primary and stand-by power), a fire protection standpipe system and traffic, management of lighting (per National Fire Protection Association (NFPA) 502), and tunnel ventilation. Illinois Route 131-Green Bay Road and ancillary surface transportation improvements (bike path) will be constructed through the tunnel by the Illinois Department of Transportation, the owner of the road.
- Install High Intensity Runway Lights on replacement Runway 5/23.
- Install Precision Approach Path Indicators to serve both thresholds of replacement Runway 5/23.
- Paint precision instrument pavement markings on replacement Runway 5/23.
- Install a Localizer Antenna Array over 1,000 feet beyond the replacement Runway 5 threshold.
- Install a Glide Slope Antenna approximately 1,000 feet from the Runway 23 landing threshold.
- Co-locate a Runway Visual Range and Automated Surface Observation System with the Glide Slope Antenna.
- Install Medium Intensity Approach Light System-Runway Alignment Indicator Lights beyond the replacement Runway 23 threshold.
- Install Runway End Identifier Lights beyond the replacement threshold of Runway 5.
- Establish a Precision Standard Instrument Approach Procedure to the replacement Runway 23 threshold and a Non-Precision Standard Instrument Approach Procedure to the replacement Runway 5 threshold.

- Decommission existing Runway 5/23 and convert the former runway pavement into Taxiway A. Remove approximately 1,000 feet of the length of existing Runway 5/23 and Taxiway G pavement to the northeast.
- Conversion of existing Runway 5/23 includes pavement removal of 100 feet of the existing width to create a 50-foot-wide Taxiway A. Strengthen/reconstruct converted Taxiway A to meet pavement design strengths for replacement Runway 5/23.
- Remove existing Runway 5/23 High Intensity Runway Lights and replace them with Medium Intensity Taxiway Lights.
- Install Medium Intensity Taxiway Lights to serve the new Taxiway A pavement.
- Extend converted Taxiway A by 2,650 feet to the southwest to the new threshold of replacement Runway 5/23. This taxiway extension includes construction of a grade separation over Illinois Route 131/Green Bay Road and creates a full-length parallel taxiway to replacement Runway 5/23.
- Extend Taxiway D to the northeast from Taxiway B to the threshold of the relocated Runway 23 threshold. Extend Taxiway D to the southwest from the southwest corporate hangars to the midpoint of the southern third of the relocated Runway 5/23.
- Install Medium Intensity Taxiways Lights (MITL) adjacent to extended Taxiways A and D.
- Construct a perimeter security and wildlife fence to enclose the entire airside operations at the Airport.
- Realign approximately 880 feet of York House Road to allow for a compliant Runway Object Free Area.
- Removal of approximately 90 acres of trees for site clearing and obstruction removal within the Runway Protection Zones and Airport Imaginary Surfaces.
- Mitigation for impacts to approximately 19.82 acres of wetlands, 1,500 linear feet of stream and 26.1 acres of floodplain and floodway.
- Modification to existing airport stormwater detention facilities to reduce hazardous wildlife attractants.
- Release (under FAA Grant Assurance Number 31) of approximately 5.9 acres of Airport Property and transfer to the Illinois Department of Transportation for the construction of the realigned Illinois Route 131/Green Bay Road.
- Permanent closure and vacation of portions of the following streets: North Bayonne Avenue, West Mawman Street, West Bairstow Avenue, West Townline Road, West Zephyr Street, West Center Street, West Suddard Street, North Adelphi Avenue, West Dorothy Street, and West Renier Street.

Airport Security Replacement Fence

- Replacement of existing 4-foot Class C Fence and 6-foot Class E fence, with 10-foot Class E fence and a 2-foot direct buried vertical skirt
- Tree/brush removal
- Landscaping
- Gate replacement
- Access control enhancements
- Reconfiguration of driveways at Aviation Drive for elimination of electric gates.

The Actions are shown in Figures 3 and 4. The full-size exhibits are provided in Appendix A.

As noted in the PDEA and the Categorical Exclusion documents, approximately 19.82 acres of wetlands and ponds will be permanently impacted by the project. In addition, approximately 1,500 linear feet of stream impacts and approximately 90 acres of tree removal are anticipated.

The City of Waukegan participates in the National Flood Insurance Program (NFIP). As required by the NFIP, all new development, including paving, excavating, filling, storage of materials and construction and placement of structures in a floodplain require local permits. Encroachment of the 100-year floodplain and floodway is anticipated. Up to 26.1 acres of the Action is located within the floodplain with 9.2 acres within the floodway. The localizer equipment would be raised above the floodway and floodplain elevations through grading and the placement of fill.

All proposed stormwater management facilities required as part of the Action would be designed to accommodate the modified development as a part of the detailed design process. Proposed stormwater management facilities would be designed in compliance with and in coordination with state and local regulatory agencies, as required. All construction and stormwater permits would be secured in coordination with Federal, state, and local regulatory agencies.

FIGURE 3 – REPLACEMENT RUNWAY 5-23 PROGRAM

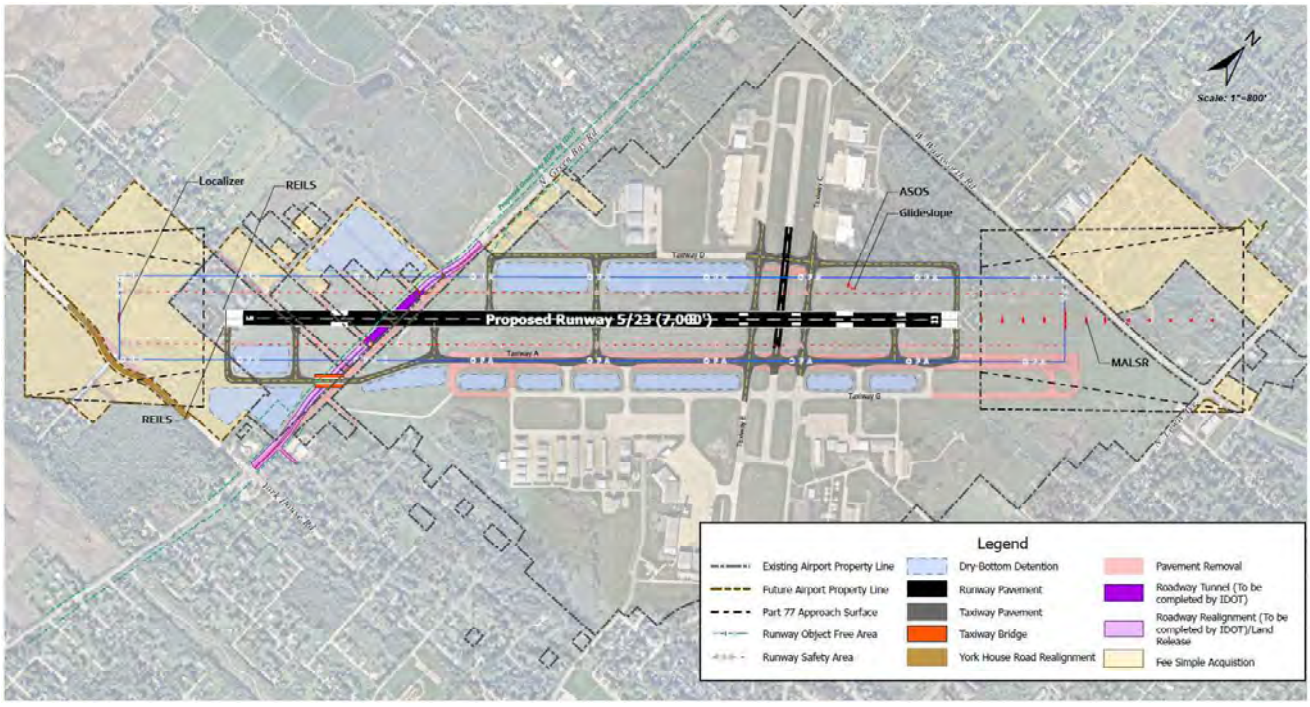


FIGURE 4 – AIRPORT SECURITY FENCE REPLACEMENT PROGRAM



1.4 EXISTING CONDITIONS

UGN has primary Runway 5/23, that is 5,999 feet long by 150 feet wide, and crosswind Runway 14-32, that is 3,750 feet long and 75 feet wide. Runway 5/23 does not have compliant Runway Safety Areas (RSA) and Runway Object Free Areas (ROFA). The Airport has seen increased demand levels for corporate aircraft operations. The District intends to implement proposed safety, capacity, and standards improvements to accommodate existing and projected aeronautical demand at the Airport, as detailed in the PDEA.

The project limits for the fence improvement program extend from south of Renier Street along Green Bay Road to the north side of Aviation Drive. The existing perimeter fence within the project limits consists of 4-foot wire fence (Class C), and 6/10-foot-tall chain link (Class E) fence, the 10-foot fence is from a previous phase, along the north side of Aviation Drive. There are four electric slide gates within the project area. One of the electric gates is located where the existing perimeter fence crosses Beach Road. The remaining three electric slide gates serve airfield entrances from Aviation Drive. The project area has public and airport owned utilities, which include telephone, sanitary, communications, electrical/power, and gas. There is a corridor of overhead electrical and communication cable located between Green Bay Road and the airport property line. The fence height and placement are not sufficient to prevent intrusion by pedestrians and not sufficient to control, to the extent practicable, hazardous wildlife.

1.5 PURPOSE AND NEED

The PDEA indicates the purpose of Sponsor's Proposed Action is to provide a primary runway and associated airfield improvements that comply with FAA design standards and meet the operational requirements of both the existing and future fleet mix. The March 2021 Categorical Exclusion for the Fence Replacement – Phase 5 (Northwest Area) identified a purpose of the Sponsor's Proposed Action was to maintain the safety aspects of the existing and future FAR Part 77 Surfaces and restricting unauthorized access by pedestrians and hazardous wildlife.

The need for Sponsor's Proposed Action is to address non-standard airfield facilities and existing insufficient runway length. Specifically, the existing primary runway does not meet current FAA design criteria, including runway and taxiway separation distance, runway surface longitudinal and transverse slopes, and violates the RSA and OFA requirements. The existing length of Runway 5/23 does not support the operational needs of the existing and future aircraft.

The fence along the western boundary of the airport is not adequately compliant with the security needs of the airport, and a portion along the western boundary is in need of replacement to address security concerns and to prevent or reduce, as feasible, hazardous wildlife on the facility.

Due to the special purpose law impacts identified and discussed in this BA, avoidance and minimization alternatives were evaluated.

1.6 ALTERNATIVES

Alternatives were evaluated for the Action to minimize or avoid impacts to natural areas which provide suitable habitat for the rusty patched bumble bee. A full discussion of the alternatives considered for the replacement runway action at UGN is provided in Chapter Two of the PDEA.

Airport Security Replacement Fence

NO ACTION ALTERNATIVE

Under the No Action Alternative, UGN would maintain its existing fence layout and not address the safety and wildlife hazards concerns. This alternative would not meet the purpose and need.

FENCE REPLACEMENT ALTERNATIVE – ACTION

The preferred alternative would replace the existing 4-foot Class C Fence and 6-foot Class E fence with 10-foot Class E fence and a 2-foot direct buried vertical skirt (Figure 4). The project includes tree/brush removal, landscaping, gate replacement, access control enhancements, and reconfiguration of driveways at Aviation Drive for elimination of electric gates. This alternative would meet the purpose and need.

2 DESCRIPTION OF THE ACTION AREA SPECIES AND THEIR HABITAT

According to the Information for Planning and Consultation (IPaC) web application maintained by the U.S. Fish and Wildlife Service (USFWS), the Action Area is within the range of the following federally listed species: Northern long-eared bat (*Myotis septentrionalis*; threatened), piping plover (*Charadrius melodus*; endangered), red knot (*Calidris canutus rufa*; threatened), Karner blue butterfly (*Lycaeides melissa samuelis*; endangered), rusty patched bumble bee (*Bombus affinis*; endangered), Eastern prairie fringed orchid (*Platanthera leucophaea*; threatened), and Pitcher's thistle (*Cirsium pitcheri*; threatened). The Action Area is also within the range of the monarch butterfly (*Danaus plexippus*; candidate). The IPaC official species list dated October 25, 2022, is provided in Appendix C.

Much of the Action Area is developed as runway, taxiway and apron pavement (44 acres), mowed airfield (242 acres), and residential (58 acres) and commercial (39 acres) development. Undeveloped and natural areas are also located within the Action Area (127 acres); of this, 52 acres is owned and managed by the Lake County Forest Preserve District (LCFPD). As described in the 2020 wetland delineation report (CMT), a total of 36 wetlands and two ponds comprising 23.67 acres are located within the Action Area. Ten wetlands meet the requirements of a high-quality aquatic resource (HQAR). An unnamed tributary of the Des Plaines River flows across the southwest portion of the project Action Area, connecting many of the wetlands in this area. The Habitat Assessment Report (CMT 2022) is provided in Appendix B.

2.1 SPECIES WITH A DETERMINATION OF NO EFFECT

The Action will have no effect on six (6) species based on the lack of species records within the Action Area, the lack of suitable habitat, and the results of field habitat assessments. Information supporting the determination for each species or species group is summarized further below.

2.1.1 NORTHERN LONG-EARED BAT (*MYOTIS SEPTENTRIONALIS*)

The Northern long-eared bat, belonging to the genus *Myotis*, is a medium-sized bat with a body length of 3 to 3.7 inches and a wingspan of 9 to 10 inches, with fur coloration of medium to dark brown on the back and tawny to pale-brown on the underside (USFWS 2015). The species is distinguished by its long ears, especially compared to other bats in its genus. Northern long-eared bats utilize caves and mines, known as hibernacula, during winter hibernation. During the summer, the bats roost singly or in colonies under tree bark and in cavities or crevices of live and snag trees that are equal to or greater than three inches diameter at breast height (dbh) (USFWS 2015).

Trees exhibiting appropriate roosting habitat are present within the Action Area for the Northern long-eared bat. A mist-net survey was completed on July 24 and 25, 2022 by Apogee. A total of nine (9) bats were captured. Of the nine captures, three (3) were big brown bats (*Eptesicus fuscus*), and six (6) were eastern red bats (*Lasiurus borealis*). No threatened or endangered bat species were captured. This summer mist-net survey was conducted under appropriate conditions and followed survey protocols to monitor the resources within the project area. The survey was approved by USFWS on August 9, 2022, and is included in Appendix B.

The survey did not encounter any Northern long-eared bats. Therefore, no effect to the Northern long-eared bat is expected.

2.1.2 PIPING PLOVER (*CHARADRIUS MELODUS*)

The piping plover is a small, approximately 17 cm-long, migratory shorebird that nests and feeds along coastal sand and gravel beaches in North America (USFWS 2022). The species is identified by its pale brown body above, lighter below, black band across forehead and orange bill with black tip. The male has a complete or incomplete black band encircling the body at the breast, and the female has an incomplete breast band and a paler head band. In the winter the birds lack the bands, and the bill is black. There are three populations of piping plover: one that occurs on the Great Lakes shorelines, one along the rivers and lakes of the Northern Great Plains, and one along the Atlantic Coast.

In the Great Lakes region, the species breed and raise young primarily on sparsely vegetated beaches and sand dune ecosystems along the shoreline. Wintering grounds range from North Carolina to Florida and along the Gulf Coast from Florida to Texas, Mexico, and the Caribbean Islands (USFWS 2003). Piping plovers feed primarily on exposed beach substrates, and select open, sparsely vegetated sandy habitats for nesting, foraging, and rearing young.

Critical habitat for the Great Lakes breeding population was designated by the USFWS in May 2001 and for the wintering population in July 2001. Coastal habitats include sand spits, small islands, tidal flats, shoals, and sandbars with inlets. Primary foraging habitats include sandy mud flats, ephemeral pools, and seasonally emergent seagrass beds (USFWS 2022).

The Action Area is located approximately 2.6 miles west of designated critical habitat; no critical habitats are present within the Action Area. No beach or sparsely vegetated sandy habitats are present within the Action Area. Therefore, no effect to the piping plover is expected.

2.1.3 RED KNOT (*CALIDRIS CANUTUS RUFA*)

The red knot is a medium-sized, approximately 10.5 inch-long, migratory shorebird that ranges across the Western Hemisphere. It has a plump body, with orange-red feathers on the ventral side and back feathers with a mix of black, rust-red and gray during the spring. The bill is short and straight, and the legs are short and green-yellow in color. Fall plumage is mainly light gray, with some dark markings on the white, ventral feathers.

The species migrates annually between their breeding grounds on the central Canadian arctic tundra and wintering regions along the Atlantic costs of South America, the western Gulf of Mexico, and the southeast United States from Florida to North Carolina. During spring and fall migrations, red knots rely on key staging and stopover areas to rest and feed along coastal and inland habitats (USFWS 2021). Illinois is located along the migration route for the species, primarily along the Great Lakes and the Mississippi River; however, the species appears to primarily migrate through Delaware Bay (USFWS 2021). Within Illinois they may be encountered in aquatic habitats, including temporary water supplies, rivers and streams, lakes, ponds and reservoirs, and Lake Michigan (IDNR 2021). Migration habitats are generally similar to wintering habitats, which include wide, sparsely vegetated beaches, shoals, tidal mud or sand flats, or mangrove-dominated shorelines; other stopover habitats may include riverine wetlands and sandbars, and manmade impoundments (USFWS 2021).

No beach or sparsely vegetated habitats, riverine wetlands, sandbars, or manmade impoundments are located within the Action Area. Therefore, no effect to the red knot is expected.

2.1.4 KARNER BLUE BUTTERFLY (*LYCAEIDES MELISSA SAMUELIS*)

The Karner blue butterfly is a small butterfly with a wingspan of approximately one inch. The male's wings are marked with a silvery or dark blue color, and the female is grayish brown on the outer portions of the wings, to blue on the topside, with irregular bands or orange crescents inside the narrow black border

The species is dependent on wild lupine (*Lupinus perennis*) as a larval host plant, and on other nectar plants. These plants historically occurred in savanna and barrens habitats typified by dry sandy soils (USFWS 2003). Wild lupine is an uncommon native wildflower found in Northeast Illinois. While the plant does occur in Lake County, it has not been observed within the Action Area.

Within the Action Area, no savanna or barren-like habitats are present. Therefore, no effect to the Karner blue butterfly is expected.

2.1.5 EASTERN PRAIRIE FRINGED ORCHID (*PLATANTHERA LEUCOPHAEA*)

The eastern prairie fringed orchid is a perennial herb that grows from underground tuber and requires full sun for optimum growth and flowering and a grassy habitat with little to no woody encroachment (USFWS 1999, USFWS 2005). The species is 8 to 40 inches tall and has an upright leafy stem; 3- to-8-inch lance-shaped leaves sheath the stem. Each plant has a single flower spike of 5 to 40 creamy white flowers; each flower has a three-part fringed lip less than 1 inch long (USFWS 2005). The orchid occurs in a variety of habitats, including mesic prairie to wetlands, such as sedge meadows, marsh edges and bogs.

In September 2019, a wetland delineation and habitat survey were completed for the airport property and adjacent property that may be part of the 5/23 runway replacement. The delineation and habitat survey identified five wetlands (Wetlands 1, 3, 4, 6 and K) that met the requirements established by the USFWS for habitat quality for the eastern prairie fringed orchid.

Meander surveys to determine the presence/absence of this species were completed by CMT biologists within Wetlands 1, 3, 4, 6 and K within and immediately adjacent to the project area on three non-consecutive days during the bloom period of the eastern prairie fringed orchid.

Survey results indicate that the orchid does not occur within the project area. No state or federally listed species were encountered. Therefore, this species is likely not present, and no effect to the eastern prairie fringed orchid is expected.

2.1.6 PITCHER'S THISTLE (*CIRSIUM PITCHERI*)

The Pitcher's thistle is a distinctive perennial, herbaceous plant inhabiting dunes of the Great Lakes region. The stems and leaves are woolly-white, and the leaves are deeply pinnatifid with lobes less than 1 cm wide and up to 4 cm long, with minute spines concentrated along the leaf margin at its base and few spines between the lobes of the leaf margins. The single branching flowering stems are up to 1 meter tall with terminal and axillary flowering heads of a cream or pinkish color.

The species is endemic to the beaches and grassland dunes of Lakes Michigan, Superior and Huron; the majority of known locations occur along Lake Michigan. The plant is found primarily in the near-

shore plant communities but may occur in all non-forested areas of Great Lakes dune systems (USFWS 2002).

There are no dune or beach habitats within the Action Area; therefore, no effect to the Pitcher's thistle is expected.

2.2 RUSTY PATCHED BUMBLEBEE (*BOMBUS AFFINIS*)

2.2.1 DESCRIPTION OF SPECIES AND GENERAL HABITAT REQUIREMENTS

The rusty patched bumble bee (RPBB) is a species of bumble bee native to eastern North America, belonging to the genus *Bombus* within the family Apidae. While all individuals have entirely black heads, the species is distinguished by a small rust-colored patch on the middle of workers' and males' second abdominal segment (USWS 2016, Xerces 2019). Queens are the largest sized bees in the colony, while workers are the smallest (USFWS 2016).

Rusty patched bumble bees live in colonies, which experience an annual cycle (USFWS 2016). A solitary queen locates a suitable nest site in spring, where she lays and fertilizes eggs. Workers hatch from the first eggs and collect food, defend the colony and care for the young, while the colony grows, and the queen continues laying eggs. New queens and males hatch in late summer, and males disperse to mate with new queens. The queen dies at the end of the season, and only new queens go into diapause over the winter, emerging in the spring to repeat the cycle.

2.2.2 FORAGING HABITAT REQUIREMENTS

The rusty patched bumble bee prefers to forage in any open, vegetated habitat, such as prairies, roadsides, meadows, and woodlands that contain nectar and pollen sources that are nearby their colony nest sites (USFWS 2016). While bumble bees can survive on low diversity of floral resources, high floral resource diversity increases the opportunities for bumble bees to forage on multiple pollen sources over a longer period which may decrease nutritional stress, thereby supporting bumble bee populations through its positive effects on colony establishment and brood production (Goodell et al. 2019; Watrous et al. 2019; Mola et al. 2021; USFWS 2021).

Early natural history surveys suggest rusty patched bumble bee queens use a range of woody and nonwoody species early in the season, while gynes foraging later in the season were found on floral genera primarily associated with open habitats, suggesting the importance of forests as forage habitat declines as the season progresses (Mola et al. 2021). A synthesis of citizen science observations in Wisconsin found the most frequently reported plant species used by the species are characteristic of native prairies and savannas (Wolf et al. 2022).

However, Wolf et al. (2022) point out that an exclusive emphasis on prairie flowers ignores critical attributes of productive rusty patched bumble bee landscapes. When native prairie flowers are largely unavailable in the spring, queens require alternative pollen and nectar sources, often found in woodlands adjacent to grassland remnants or plantings. While early spring and summer woodland wildflowers, including woody species, were not among the most visited plant species overall, they were disproportionately represented during the early season, suggesting woodland habitats are important landscape elements of viable habitat for the species. The same relationship was observed in late season flowering plants typical of wetter habitats, including wet meadows, marshes and riparian

corridors, suggesting moist habitats may be an important landscape element during the latter part of the bee's seasonal activity period. A mosaic of flower-rich grasslands, woodlands, and wet meadows or riparian floodplains forms a desirable landscape objective for RPBB habitat management (Wolf et al. 2022).

2.2.3 NESTING HABITAT REQUIREMENTS

Bumble bee nests are typically located in abandoned rodent nests or other similar underground cavities (Liczner and Colla 2019; Goodell and Lanterman 2019). Bumble bees appear to prefer nesting in sites with greater floral abundance and soil conditions that correspond to increased bare ground, lower soil moisture and warmer soil temperatures (Buckles and Harmon-Threatt 2019). Sloped ground and soil compaction appear to be the most predictive nesting resources for bumble bee species, with preferences of ground-nesting bees for softer, less compacted soils and sloped ground (Sardiñas and Kremen 2014).

Workers may forage up to about 1 km from nests (USFWS 2021). Amongst bumble bee species, underground nests were the most commonly observed, often in abandoned small mammal burrows (Liczner and Colla 2019; Goodell et al. 2019), typically one to four feet underground, but may also select nest sites at ground level in grass tussocks (Goodell et al. 2019). The rusty patched bumble bee is unlikely to nest in areas of standing water or high-water table, paved areas, areas of annual row crops, forests with invasive shrub understory, or frequently mowed areas. A recent study described three rusty patched bumble bee nests (Boone et al. 2022). Two of the nests were located in residential yards in primarily developed residential/commercial areas, one in an abandoned rodent burrow and the other between a building's foundation and insulation. The third nest was in a county park undergoing active restoration on site. The nest was situated in a wooded area dominated by common buckthorn (*Rhamnus cathartica*). These observations suggest that the rusty patched bumble bee may be tolerant of urban and degraded habitats.

The rusty patched bumble bee's active flight season is typically from mid-March through mid-October (USFWS 2021). Because the availability of forage resources influences nest density and colony survival, bumble bees may choose nesting sites near areas where spring forage is available to optimize their energy intake during foraging trips (Liczner and Colla 2019; USFWS 2021). The species is expected to prefer nesting sites with abundant floral resources in April/May through August and is typically associated with grassland-type habitat, as well as wooded areas, urban parks, and gardens (Goodell et al. 2019). Forests and forest edges are common sites of nesting for many bumble bee species, and, based on community science and anecdotal observations, it is likely that nesting and overwintering habitat for rusty patched bumble bee is favorable within forested landscapes (Mola et al. 2021).

2.2.4 OVERWINTERING HABITAT REQUIREMENTS

Little is known about overwintering preferences of bumble bees, including the rusty patched bumble bee (Liczner and Colla 2019; Williams et al. 2019; Goodell et al. 2019). Generally, overwintering bumble bee queens are most often observed in shaded areas, usually near trees and in banks without dense vegetation and are most often found in north-facing slopes; however, they may also be found in slopes facing other directions (Liczner and Colla 2019). Soil type is often described as sandy well-drained or loose, and queens appear to avoid areas with dense vegetation, preferring to overwinter in

undisturbed bare-earth, moss, under tree litter, or in bare-patches within short grass (Liczner and Colla 2019; Goodell et al. 2019). The same overwintering site may be used repeatedly (Liczner and Colla 2019). Additionally, new common eastern bumble bee (*Bombus impatiens*) queens are known to scatter widely in search of overwintering sites (Szabo and Pengelly 1973).

Overwintering habitat use is from mid-October through mid-March (Goodell et al. 2019). Based on knowledge of other bumble bee species' overwintering preferences, the overwintering sites of the rusty patched bumble bee are expected to be in uncompacted and often sandy, well-drained or loose soils on northwest exposures. It is hypothesized that queens prefer overwintering on north-facing slopes to prevent emerging too early in the winter on a warm day. Queens may overwinter in woodland areas near early blooming spring ephemeral resources (USFWS 2016; Xerces 2019; Mola et al. 2021). Woodland areas are thought to provide thermoregulation for overwintering queens and shelter from the cold from September/October through March/April, where they can avoid premature warming in March (Goodell et al. 2019). The relationship of temperature and emergence has been shown to be highly significant, as emergence is a physical response to increasing temperatures (Szabo and Pengelly 1973).

Williams et al. (2019) recorded the first data on the overwintering habitat for any western North American bumble bee. Their study suggests that overwintering, nesting, and foraging habitats are likely distinct, and that queens' selection of overwintering sites may be shaped by environmental stressors of the year. Western bumble bee queens were found overwintering in litter beneath cypress trees in mineral soils where no floral resources existed, within short distances of tree trunks and shaded from direct sun, which were similar to British species found to be overwintering beneath trees (Williams et al. 2019). While limited overwintering habitat data is recorded for other ground nesting bumble bee species, it is reasonable to consider that the same overwintering habitat distinction holds true for rusty patched bumble bee. Plath (1927) notes that buff-tailed bumble bee (*Bombus terrestris*) prefers to burrow in ground under trees and that it seems probable that queens of other species belonging to the Terrestris group, including rusty patched bumble bee, would hibernate in a similar setting. The only known record of an overwintering rusty patched bumble bee was found in a maple-oak woodland in Wisconsin in 2016 (USFWS 2021), suggesting that this species likely typically overwinters in deciduous woodland habitat.

2.2.5 RELATIONSHIP OF HABITAT IN ACTION AREA TO LOCAL POPULATIONS

Based on known typical foraging distances and dispersal movements of other bumble bee species, the rusty patched bumble bee may forage up to 1 km (0.6 mile) from the colony, and new queens may disperse up to 10 km (6 miles) (Goodell et al. 2019; USFWS 2021).

The southwest portion of the Action Area (200 acres) is located within a designated high potential zone (HPZ), where the USFWS assumes the presence of the bee in suitable habitat. The remainder of the Action Area is located within a USFWS designated primary dispersal zone (an area where the species is not likely to be present but surrounds a HPZ for the rusty patched bumble bee. Another HPZ is adjacent east of the Action Area. Currently, approximately half (50%) of the Action Area within the HPZ is mowed (100 acres), while 18% is natural areas (35 acres), and the remainder is residential (32%; 46 acres).

Between 2020-2022, 11 observations of rusty patched bumble bee have been recorded on Bumble Bee Watch and iNaturalist within 10 km of the Action Area; no observations have been recorded within

the Action Area. The nearest two records are located approximately 1.7 km (1.1 mi) west of the Action Area in a residential subdivision. Most of the records were made in primarily residential or natural areas, including Illinois Beach State Park/Nature Preserve (3.1 km/1.9 mi east) and County Forest Preserve (3.1 km/1.9 mi west). One observation of a gyne was recorded in a generally residential area (location obscured) approximately 9.6 km (6 mi) southwest of the Action Area. Two other HPZs are located within a 10 km radius of the Action Area.

Based on the presence of floral resources within the Action Area and overlap with a HPZ as well as proximity of the Action Area to other HPZs, it would be possible for rusty patched bumble bees to be found utilizing habitat within the Action Area at some point during the bee flight season. As the Action Area is within the forage and queen dispersal radius of confirmed HPZs and provides appropriate foraging, nesting, and overwintering habitat, it can be presumed that individuals may utilize the Action Area for food, nesting or overwintering. Observed suitable habitat for the rusty patched bumble bee within the Action Area is detailed below in Section 2.2.6.

Within 10 km of the Action Area, approximately 9,975 acres of potential foraging habitat, approximately 25,332 acres of potential foraging-nesting habitat, and approximately 8,859 acres of potential nesting-overwintering habitat is available to the rusty patched bumble bee. Of that, approximately 38 acres of potential foraging, 1,333 acres of potential foraging-nesting and 420 acres of potential nesting-overwintering habitat are available within 1 km of the Action Area.

Potential foraging, nesting, and overwintering habitats outside of the Action Area were inferred via currently available satellite imagery, NLDS landcover data, FEMA floodplain data, and National Wetlands Inventory data to determine potential rusty patched bumble bee habitat types at a macroscale level. Potential foraging habitat was classified by the inferred presence of grasslands/prairies, wetlands, wooded areas, and suburban/urban gardens that may provide floral resources. Potential nesting habitat was classified by the inferred presence of grassland-type or wooded habitat that is not located within wetlands or floodplains. Potential overwintering habitat was classified by the inferred presence of wooded areas not located within wetlands or floodplains. It is important to note that inferred potential habitat areas outside of the Action Area have not been verified in the field. Habitat proximity mapping is provided in Appendix A.

2.2.6 SPECIES INFORMATION IN ACTION AREA

The Rusty Patched Bumble Bee (*Bombus affinis*) Interagency Cooperation under Section 7(a)(2) of the Endangered Species Act Voluntary Implementation Guidance, dated December 2021, and the Xerces Society Rusty Patched Bumble Bee Habitat Assessment Form and Guide (Xerces 2017) were used by CMT biologists to guide habitat survey requirements for the species. Appropriate habitat for the rusty patched bumble bee was assessed throughout the limits of the Action Area. Evaluation of habitat for the bee was assessed by determining available habitat types and habitat quality throughout the Action Area. Dominant vegetation, soil types, soil saturation and surrounding available habitat were noted. The Rusty Patched Bumble Bee Habitat Assessment (CMT 2022) is provided in Appendix B.

Available suitable habitat is generally concentrated along the southwest, west and northeast portions of the Action Area. Habitat is generally absent throughout the airfield and active air operation building areas, except for a few isolated low-quality wetlands in the airfield that are typically mowed. The Xerces Society Rusty Patched Bumble Bee Habitat Assessment Form (Xerces 2017) was completed for the

existing habitat conditions within the Action Area. The current conditions' overall score was 111 out of a maximum score of 215, suggesting moderate habitat availability for the species throughout the entire Action Area. This score differs from the CMT qualitative assessment, as summarized below. The Xerces form does not consider other factors such as isolated habitat areas, the presence and extent of buckthorn-invasion in surrounding areas, and the percent cover of bee resources. Therefore, the CMT qualitative assessment will be used in the Determination of Effect presented in Section 5.

Because of the extent of buckthorn cover around many of the wetlands and open areas, no section in the Action Area is considered crucial to supporting and sustaining the rusty patched bumble bee populations. Most habitat areas, approximately 155.3 of 189.75 total acres (82%), are ranked either low-none or low in their suitability to support RPBB populations. These lowest quality areas included isolated wetlands with few bee resources, buckthorn stands, and residential areas. Approximately 5.29 acres of wetlands and 0.66 acres of open area were low-medium quality (3%). The pine stand, some open areas, and wetlands contributed to 10.65 acres of medium-quality habitat (6%). Isolated open areas and some wetlands with high plant diversity were medium-high quality, the highest ranking within the Action Area, consisting of 17.88 acres (9%). Detailed assessment results and discussion are provided in Appendix B.

TABLE 2: RUSTY PATCHED BUMBLE BEE HABITAT QUALITY SUMMARY

HABITAT QUALITY	ACREAGE WITHIN ENTIRE ACTION AREA (% OF ENTIRE ACTION AREA)	ACREAGE WITHIN HPZ ONLY IN ACTION AREA (% OF ENTIRE ACTION AREA)
Low-none	94.71 (18%)	61.7 (11.7%)
Low	60.56 (11.5%)	50.4 (9.5%)
Low-medium	5.95 (1.1%)	4.1 (0.8%)
Medium	10.65 (2%)	0.64 (0.12%)
Medium-high	17.88 (3.4%)	8.8 (1.7%)
Total	**189.75 (36%)**	**125.6 (23.8%)**
*Total acreage of Action Area = 527.5 ac.		

A total of approximately 189.75 acres of suitable habitat are present within the Action area, 125.6 acres (66.2%) of which are located within the HPZ. Habitat quality within the HPZ includes 61.7 acres (49.1%) of low-none, 50.4 acres (40.1%) of low, 4.1 acres (3.3%) of low-medium, 0.64 acres (0.5%) of medium, 8.8 acres (7%) of medium-high. 200 acres of the Action Area are within an HPZ. To date, no rusty patched bumble bees have been documented within the Action Area.

2.2.7 DESIGNATED OR PROPOSED CRITICAL HABITAT

No designated or proposed critical habitats are located within the Action Area (USFWS 2022).

3 ENVIRONMENTAL BASELINE

Populations of rusty patched bumble bee are experiencing drastic large-scale declines nationwide, despite having been historically widespread and common (Colla and Packer 2008, Grixti et al. 2009, Cameron et al. 2011, Colla et al. 2012). In a study assessing declines of North American *Bombus* species using historical and recent collection records, the rusty patched bumble bee has been noted as persisting in less than 50% of its re-sampled historical range, indicating a substantial population decline, most likely within the past decade (Colla et al. 2012).

Half of the bumble bee species found historically in Illinois have been either locally extirpated or have shown declines in distribution, including the rusty patched bumble bee, which has shown a decline in its distribution over time in Illinois (Grixti et al. 2009). The decline of bumble bee richness in Illinois occurred primarily between 1940 and 1960, coinciding with major agricultural intensification in the Midwest, including conversion of diverse crops and pastures containing a variety of floral resources to large-scale corn and soybean fields (Grixti et al. 2009). A study conducted in Britain found similar results, indicating that the large-scale decline in native and long-established plant species as forage resources have likely impacted the fitness of individual bumblebee colonies within each season, as well as the persistence of populations between years (Carvell et al. 2006). While the rusty patched bumble bee is experiencing decline throughout Illinois, observed bumble bee diversity has been found to be highest in the northern portion of the state where conservation efforts would likely be most productive (Grixti et al. 2009).

Bumblebees are more vulnerable to extinction than other animal taxa. Their long colony cycles with production of reproductive individuals occurring primarily toward the end of the colony cycle has implications for their ability to tolerate slight changes in resource acquisition and likely results in large cumulative impacts on colony development and reproductive success (Colla and Packer 2008). Additionally, their life cycle requires three types of habitats for foraging, nesting and hibernating in close proximity to each other. Declines in bumblebee populations may also be attributed to extensive use of novel pesticides, habitat loss due to intensive agriculture and urbanization, and pathogen spillover from commercial bees (Colla and Packer 2008). Declining *Bombus* populations appear to have significantly higher infection levels of the microsporidian pathogen *Nosema bombi* and lower genetic diversity compared with co-occurring populations of stable species, which may be contributing to some bumblebee species decline (Cameron et al. 2011).

200 acres of the Action Area is within a USFWS-designated HPZ for the rusty-patched bumble bee. In this area, USFWS assumes the presence of the bee in suitable habitat. The remainder of the Action Area is low dispersal, which surrounds the HPZ, but presence is not assumed. Currently, approximately half (50%) of the area within the HPZ is mowed (100 acres), while 18% is natural areas (35 acres). It is also largely residential (32%; 46 acres). Four HPZs are located within a 10 km distance of the site. The Action Area includes 189.75 acres of appropriate habitat for the rusty patched bumble bee, 82% of which was identified as low-none to low quality and 18% as low-medium to medium-high, as described above in Section 2.2.6. Much of this habitat is surrounded by invasive buckthorn which may be encroaching into better quality habitat areas (CMT 2022).

As indicated previously, the following rusty patched bumble bee habitat types are available within the 10 km dispersal zone for new queens from the Action Area:

- Approximately 9,975 acres of potential foraging habitat

- Approximately 25,332 acres of potential foraging-nesting habitat
- Approximately 8,859 acres of potential nesting-overwintering habitat

The adjacent area surrounding the Action Area has been largely developed by residential and commercial land use with some undeveloped natural areas and parks being present. Mapping depicting available habitat within the Action Area are provided in the Habitat Assessment Report located in Appendix B.

The Lake County Forest Preserve District property located adjacent west of the Action Area and residential gardens, have likely sustained the presence of suitable habitat for the rusty patched bumble bee near the Action Area. Furthermore, the presence of existing habitat within 10 km of the Action Area in designated natural areas, agricultural areas, and gardens have likely contributed to the persistence of the species within the northeast Illinois region.

4 EFFECTS OF THE ACTION

This section discusses the direct, indirect and cumulative effects of the Action on the rusty patched bumble bee (*Bombus affinis*), which is the only federally-listed species identified as being affected by the Action.

4.1 DIRECT EFFECTS

Direct effects are those effects caused by the Action that occur at the time of the action. The following potential stressors caused by the Action that could affect the rusty patched bumble bee have been identified: loss of habitat, direct contact with construction equipment and/or personnel, and hazardous material and chemical spills.

4.1.1 LOSS OF HABITAT

Approximately 129.6 acres (68%) of existing suitable bee habitat within the Action Area will be permanently lost as a result of the Action, including 106.9 acres (82.5%) of low-none and low quality, 5.7 acres (4.4%) of low-medium quality, 3 acres (2.3%) of medium quality, and 14 acres (10.8%) of medium-high quality. Construction of the replacement runway and runway extension, taxiways, and tree clearing within the safety areas and runway protection zones in the Action Area will result in permanent conversion of foraging and nesting habitat to mowed turf-grass with compacted soil and an impermeable asphalt surface devoid of pollen and nectar resources.

There will be a loss of clumping grasses that supports suitable nesting habitat, which will result in a partial loss of potential nesting sites in proximity to summer foraging areas within the Action Area. Because nesting density within the Action Area has not been determined, low to high (14-45 nests/km^2 (0.14-0.45 nests/hectare)) nest density estimates are considered (USFWS 2021). Based on this density assumption and the presence of 58.9 acres (23.8 hectares) of potential nesting habitat within the Action Area, 3.3-10.7 nests (i.e., 4-11 nests) could be present within the Action Area during any given nesting season. Loss of nesting sites in close proximity to floral resources may result in avoidance of the area, deterioration in bumble bee body condition, and reduction in reproductive output due to the need to find appropriate nesting habitat elsewhere (USFWS 2021). The loss of a single nest is not likely to occur given the low numbers in the area, other and higher-quality habitat complexes within 10 km of the project, and the conservation measures agreed to by the airport. Additionally, the project will avoid any active nests by initiating ground disturbance outside of the nesting season.

The Action would also directly reduce a portion of available nectar plant density for the rusty patched bumble bee. If severe enough, reduction or elimination of nectar plant density or diversity has the potential to result in the bee's inability to find suitable amounts of nectar and pollen which may cause avoidance of the area, potential deterioration of body condition, and reduced or no reproductive output for affected queens (USFWS 2021). These potential effects are not likely to occur here because the majority of available habitat is of low-quality, likely resulting in low numbers in the area, and the extent of other higher quality resources outside of the Action Area in the dispersal zone.

Per the USFWS (2022) during prior consultation, the assumptions and statements provided in USFWS 2021 guidance (2021) are "made in a 'hypothetical' or modeled landscape" and "consideration of the nature and extent of the habitat types present and the landscape context, in addition to the quality, is helpful in assessing the status of the species in the Action Area."

Within 200-400 meters of the Action Area the vast majority of available habitat is comprised of residential and commercial land use, which may provide low-quality foraging resources within the worker dispersal radius of a nest. Therefore, it is reasonable to conclude that there is a moderate likelihood of nesting within the Action Area. It is important to consider that of the 129.6 acres of proposed impact, approximately 107 acres (82.6%) of that has been identified as low-none and low quality habitat (see Table 3 below). 40% of the existing medium and medium-high quality habitat (7.62 and 3.93 acres, respectively) will not be impacted by the project.

TABLE 3: RUSTY PATCHED BUMBLE BEE HABITAT IMPACT SUMMARY

HABITAT QUALITY	ACREAGE	IMPACT (AC)	REMAINING (AC)
Low-none	94.71	55.55 (59%)	39.16 (41%)
Low	60.56	51.39 (85%)	9.17 (15%)
Low-medium	5.95	5.72 (96%)	0.23 (4%)
Medium	10.65	3.03 (28%)	7.62 (72%)
Medium-high	17.88	13.95 (78%)	3.93 (22%)
Total	**189.75**	**129.64 (68%)**	**60.11 (32%)**

The only available overwintering habitat (identified as medium quality) was in the pine stand at the northeast end of the Action Area outside of the HPZ and will not be temporarily or permanently impacted by the Action or disturbed by construction equipment.

70.8 acres (56.4%) of the 125.6 acres of habitat within the HPZ will be impacted. The majority of this habitat (61.5 acres, 87%) is low-none and low quality habitats, 4.4 acres (6%) is low-medium and medium quality, and 4.9 acres (7%) is medium-high quality.

Furthermore, within 10 km of the Action Area there are significantly larger habitat complexes suitable for rusty patched bumble bee foraging, nesting, and overwintering, as listed in Section 5, which are likely more preferable to the species due to proximity of the HPZs to one another and larger flight and foraging corridors. These complexes overlap with four HPZs and are located along the Des Plaines River corridor, as well as managed and protected natural areas including several parks within the Lake County Forest Preserve and IDNR systems. The available habitat in the Action Area is equivalent to approximately 0.4% of the foraging, nesting, and overwintering habitat available within a 10 km radius. Based on the analysis described in Section 2.2.5, the best apparent habitat complexes within an HPZ are located immediately adjacent to the west, which includes approximately 4,779 acres of habitat, and to the east, which includes 3,878 acres. The complex to the west includes Waukegan Savanna Forest Preserve, an active restoration site, Wadsworth Savanna Forest Preserve, and Sedge Meadow Forest Preserve. The complex to the east includes Illinois Beach State Park, and Lyons Woods Forest Preserve.

Considering the landscape context of the Action Area and the proximity of more preferable and larger higher quality habitat complexes, the Action's removal of primarily low quality habitat within the Action Area would not be expected to rise to an adverse effect and is considered to be an insignificant and discountable effect.

4.1.2 DIRECT CONTACT WITH CONSTRUCTION EQUIPMENT AND/OR PERSONNEL

Construction activities have the potential to harm or harass the rusty patched bumble bee if individuals are present within or enter the Action Area during construction. Bees could come into direct contact with construction equipment and/or personnel. It is presumed that foraging/flying individuals would be able to readily escape construction activities. Construction related disturbances such as increased vibration levels have the potential to result in alteration of normal foraging and nesting behavior. Ground disturbance or compaction also have the potential to result in immediate death or harm of individuals present in nests.

The USFWS (2021) indicates that the effects of ground disturbance that affects more than 0.25 acre of nesting habitat within an HPZ when the species is present may not be discountable. Therefore, the Waukegan Port District has intentionally agreed to conduct initial ground disturbing activities within the Action Area outside of the rusty patched bumble bee's flight season and nesting season. That way, any construction activities would avoid direct disturbance of nesting individuals and would remove foraging resources prior to the bee's flight season to avoid disturbance of foraging individuals.

The only potential overwintering habitat present within the Action Area is not located within an HPZ. This area will not be impacted by the project; therefore, no overwintering gynes (queens) within the Action Area are expected to be disturbed by the project.

4.1.3 HAZARDOUS MATERIAL AND CHEMICAL SPILLS

Hazardous materials and chemicals in the form of gasoline, engine oil, lubricants or other fluids used during construction activities have the potential to be unintentionally released or spilled due to seepage or accidental spills. Rusty patched bumble bee individuals could come into contact with these materials if they are searching for nectar and pollen resources within the Action Area. Accidental release of hazardous materials into the environment may potentially impact growth of floral resources for the bee in the immediate vicinity of the Action Area.

Direct impact to the rusty patched bumble bee from hazardous materials and chemicals could occur as the bee is searching for nectar or pollen during construction, however it is unlikely given that only less than half of the Action Area is located within a HPZ and the low numbers in the area, as well as existence of suitable habitat within 10 km of the project, and the conservation measures (see Section 5.1) agreed to by the airport.

4.2 INDIRECT EFFECTS

Indirect effects are those effects that are caused by or will result from the Action but occur later in time and are still reasonably certain to occur. The following potential indirect stressors caused by the Action have been identified for analysis: direct contact with vehicles, and chemical applications.

4.2.1 DIRECT CONTACT WITH VEHICLES

Consideration was given to accidental strikes by vehicles utilizing the existing adjacent roads and the aircraft and vehicles utilizing the proposed runway extension and associated infrastructure. The existing adjacent roads already bisect the HPZ and potential habitat areas; therefore, the project would not alter the existing risk level of a bee colliding with a vehicle. The new stretch of proposed runway

will not bisect any habitat areas. Additionally, given the width of the airfield, comprised of mowed turf and impervious surfaces, there is no foraging corridor that would facilitate the movement of the bee through the airfield. Typical speed limits of airport vehicle access drives are 15-20 mph, and as a highly mobile species with limited numbers (if at all) in the area, the bee is likely to adjust its flight path to avoid colliding with a vehicle and thus it is highly unlikely for a bee to be struck by a vehicle due to this Action. The vehicle strikes are insignificant when considering the regional population and this indirect effect is not expected to rise to the level of take.

4.2.2 CHEMICAL APPLICATIONS

Herbicide use in areas where floral resources are present have the potential to reduce availability of nectar and pollen, resulting in nutritional stress that leads to increased susceptibility to pathogens or direct mortality (USFWS 2021). However, indirect effects to the species by chemical applications is considered unlikely because no insecticides will be used on the airfield or adjacent areas after the Action. Although herbicide use is not expected, any herbicide application would be limited to selective spot-treatment of undesirable/invasive plants. A conservation measure will ensure no insecticides will be used in the mowed areas adjacent to or within any remaining habitat areas (see conservation measures in Section 5.1).

4.3 CUMULATIVE EFFECTS

Cumulative effects, as defined by 50 CFR § 402.02, include the effects of future state, tribal, local or private actions that are reasonably certain to occur within the Action Area. Future federal actions that are unrelated to this Action are not considered because they would be subject to separate consultation pursuant to Section 7 of the Endangered Species Act. While not legally required, a cumulative effects analysis is provided below.

Broadly, urbanization and land development are known to cause habitat loss, fragmentation and degradation, which affects a variety of plant and animal species, including the rusty patched bumble bee. Habitats may also be lost or degraded as a result of associated activities, including road and utility construction and maintenance, housing development and agricultural expansion. Additional threats resulting from urbanization and land development include contamination, poisoning by pesticides and competition from more generalist-bee species that have not seen the same level of decline as the rusty patched bumble bee. Some of these activities may occur without consultation with or authorization by the USFWS pursuant to Section 7 of the Endangered Species Act, limiting consideration of development activities' impacts to federally-listed species.

Within and adjacent to the Action Area, no additional development is expected after project completion. Other airport projects that are reasonably expected to occur in the future would impact mowed turf grass areas and pavement that are not suitable habitat for the rusty patched bumble bee.

As there are four HPZs and a large amount of potential foraging, nesting, and overwintering habitats as well as higher quality habitat complexes within 10 km of the Action Area (as described in section 2.2.5), and retention of 32% of habitat within the Action Area, the Action is not expected to significantly contribute to the cumulative effects that may impact the rusty patched bumble bee.

5 DETERMINATION OF EFFECT

Appropriate habitat for the piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), Karner blue butterfly (*Lycaeides melissa samuelis*), and Pitcher's thistle (*Cirsium pitcheri*) were not identified within the Action Area. While appropriate habitat for the Northern long-eared bat (*Myotis septentrionalis*) and Eastern prairie fringed orchid (*Platanthera leucophaea*) is present within the Action Area, no individuals have been observed within the Action Area either presently or historically. Therefore, we conclude that the Action will have no effect on these species.

Appropriate habitat for the rusty patched bumble bee (*Bombus affinis*) was identified within the Action Area. Because appropriate habitat is available, a portion of the Action Area is located within an HPZ, and multiple HPZs for the rusty patched bumble bee are located within 10 km of the Action Area, it is likely that the bee may be present and utilize habitat within the Action Area. The nature of the action and the conservation measures proposed below in this Biological Assessment ensures the action is not likely to adversely affect the species.

Considering that the great majority (82.6%) of impacted habitat is of low quality, roughly half of the impact is outside the HPZ, the Action will not fragment bee habitat, the proximity of higher quality habitat available within 10 km of the Action Area, including four other HPZs, and the implementation of the conservation measures as described below, we conclude that the Action **may affect, but is not likely to adversely affect** the rusty patched bumble bee. For the same reasons, the Action would not jeopardize the continued existence of the species.

The Action is not likely to result in incidental take as discussed below, including consideration of the timing of the ground disturbance prior to the flight and nesting season and that the only available overwintering habitat will not be impacted within the Action Area.

5.1 CONSERVATION MEASURES

The Airport would implement the following conservation measures as part of the Proposed Action to minimize the potential effects to the rusty patched bumble bee:

1. To prevent floral resources from blooming and nesting of the rusty patched bumble bee within the Action Area, initial ground disturbance will occur within the medium and medium-high quality habitat areas located within the rusty patched bumble bee High Potential Zone during the inactive season (Oct 15 - March 15). If the project schedule does not allow for ground clearing during the inactive season, then vegetation within the medium and medium-high quality habitat areas located within the HPZ will be mowed throughout the active season (March 16 – Oct 14) to prevent flowering of floral resources.

2. The 7.6-acre pine stand containing overwintering habitat at the north end of the Action Area will not be impacted and will remain after the Action. To prohibit encroachment during construction, the 7.6-acre pine stand shall be demarcated by posted signs.

3. Erosion control shall be implemented as specified in the Stormwater Pollution Prevention Plan to prevent sedimentation in potential habitats available outside of the Action Area.

REFERENCES

Apogee, Inc. 2022. Summer mist-net survey for federally threatened and endangered bats at the Waukegan National Airport, Lake County, IL. Apogee Project No. 22-1119.00. 23 pp.

Boone, M.L., Evans, E., Wolf, A., Minser, H., Watson, J. and T.A. Smith. 2022. Notes from rusty patched bumble bee (*Bombus affinis* Cresson) nest observations. Insect Conservation and Diversity, 1-5. Available from: https://doi.org/10.1111/icad.12564.

Buckles, B.J. and A.N. Harmon-Threatt. 2019. Bee diversity in tallgrass prairies affected by management and its effects on above- and below-ground resources. Journal of Applied Ecology, 56: 2443-2453.

Cameron S.A., Lozier J.D., Strange J.P., Koch J.B., Cordes N., Solter, L.F. and T.L. Griswold. 2011. Patterns of widespread decline in North American bumble bees. PNAS 108(2): 662-667.

Carvell C., Roy D.B., Smart S.M., Pywell R.F., Preston C.D. and D. Goulson. 2006. Declines in forage availability for bumblebees at a national scale. Biological Conservation 132: 481-489.

Colla S.R. and L. Packer. 2008. Evidence for decline in eastern North American bumblebees (Hymenoptera: Apidae), with special focus on *Bombus affinis* Cresson. Biodiversity and Conservation 17: 1379-1391.

Colla S.R., Gadal F., Richardson L., Wagner D. and L. Gall. 2012. Assessing declines of North American bumble bees (*Bombus* spp.) using museum specimens. Biodiversity and Conservation 21: 3585-3595.

Crawford, Murphy & Tilly, Inc. 2020. Eastern prairie fringed orchid (*Platanthera leucophaea*) survey, Replacement Runway 5/23, Waukegan National Airport, Lake County, Illinois. 48 pp.

Crawford, Murphy & Tilly, Inc. 2022. Habitat Survey Report for the Rusty Patched Bumble Bee, Replacement Runway 5/23, Waukegan National Airport, Lake County, Illinois. 58 pp.

Goodell, K., Mitchell, R. and J. Lanterman. 2019. Distribution and habitat use of the Rusty Patched Bumble Bee (*Bombus affinis*) and the Yellow-banded Bumble Bee (*Bombus terricola*) in Ohio. Ohio Department of Transportation, Office of Statewide Planning and Research (SJN 135490). 75 pp.

Grixti J.C., Wang L.T., Cameron S.A. and C. Favret. 2009. Decline of bumble bees (*Bombus*) in the North American Midwest. Biological Conservation 142: 75-84.

Illinois Department of Natural Resources. 2021. Biodiversity of Illinois – red knot (*Calidris canutus*). 2 pp.

iNaturalist. Available from https://www.inaturalist.org. Accessed October 28, 2022.

Liczner, A.R. and S.R. Colla. 2019. A systematic review of the nesting and overwintering habitat of bumble bees globally. Journal of Insect Conservation, 23: 787-801.

Mola, J.M., Hemberger, J., Kochanski, J., Richardson, L.L., and I.S. Pearse. 2021. The importance of forests in bumble bee biology and conservation. BioScience 71(12): 1234-1248.

Plath, O.E. 1927. Notes on the hibernation of several North American bumblebees. Annals of the Entomological Society of America, 20(2): 181-192.

Sardiñas, H.S. and C. Kremen. 2014. Evaluating nesting microhabitat for ground-nesting bees using emergence traps. Basic and Applied Ecology, 15: 161-168.

Szabo, T.I. and D.H. Pengelly. 1973. The over-wintering and emergence of Bombus (Pyrobombus) impatiens (Cresson) (Hymenoptera: Apidae) in Southern Ontario. Insectus Sociaux, 20(2): 125-132.

The Xerces Society for Invertebrate Conservation. Bumble bees: rusty patched bumble bee (*Bombus affinis*). https://xerces.org/rusty-patched-bumble-bee/. Accessed March 27, 2019.

The Xerces Society, Wildlife Preservation Canada, York University, University of Ottawa, The Montreal Insectarium, The London Natural History Museum, BeeSpotter. <year data was extracted>. Data accessed from Bumble Bee Watch, a collaborative website to track and conserve North America's bumble bees. Available from http://www.bumblebeewatch.org/app/#/bees/lists. Accessed: October 28, 2022.

U.S. Fish and Wildlife Service. 1999. Eastern Prairie Fringed Orchid (Platanthera leucophaea) Recovery Plan. Fort Snelling, Minnesota. 62 pp.

U.S. Fish and Wildlife Service. 2002. Pitcher's Thistle (*Cirsium pitcheri*) Recovery Plan. Fort Snelling, Minnesota. vii + 92 pp.

U.S. Fish and Wildlife Service. 2003. Recovery Plan for the Great Lakes Piping Plover (*Charadrius melodus*). Fort Snelling, Minnesota. 151 pp.

U.S. Fish and Wildlife Service. 2003. Final Recovery Plan for the Karner Blue Butterfly (*Lycaeides melissa samuelis*). U.S. Fish and Wildlife Service, Fort Snelling, Minnesota. 273 pp.

U.S. Fish and Wildlife Service. 2005. Eastern prairie fringed orchid (*Platanthera leucophaea*) Fact Sheet. 2pp.

U.S. Fish and Wildlife Service. 2015. Northern long-eared bat (*Myotis septentrionalis*) Fact Sheet. 2pp.

U.S. Fish and Wildlife Service. 2016. Rusty patched bumble bee (*Bombus affinis*) Fact Sheet. 2pp.

U.S. Fish and Wildlife Service. 2019. S7 Technical Assistance: Eastern prairie fringed orchid. https://www.fws.gov/midwest/Endangered/section7/s7process/plants/epfos7guide.html. Accessed December 2021.

U.S. Fish and Wildlife Service. 2021. The Rusty Patched Bumble Bee (*Bombus affinis*) – Interagency Cooperation under Section 7(a)(2) of the Endangered Species Act Voluntary Implementation Guidance, Version 3.1. USFWS, Bloomington, MN. 31 pp.

U.S. Fish and Wildlife Service. 2021. Draft recovery plan for the rufa red knot (*Calidris canutus rufa*). U.S. Fish and Wildlife Service, North Atlantic-Appalachian Region, Hadley, Massachusetts. 21 pp.

U.S. Fish and Wildlife Service. 2022. IPaC Official Species List. Generated October 25, 2022. 8 pp.

U.S. Fish and Wildlife Service. 2022. Species Profile for Piping Plover (Charadrius melodus). https://ecos.fws.gov/ecp/species/6039. Accessed October 25, 2022.

Watrous, K.M., Duennes, M.A. and S.H. Woodard. 2019. Pollen diet composition impacts early nesting success in queen bumble bees *Bombus impatiens* Cresson (Hymenoptera: Apidae). Environmental Entomology, 48(3): 711-717.

Wilhelm, Gerould, Laura Rericha, and Mary Marguerite Lowther. Flora of the Chicago Region: a floristic and ecological synthesis. Indiana Academy of Science, Indianapolis, IN. 2017.

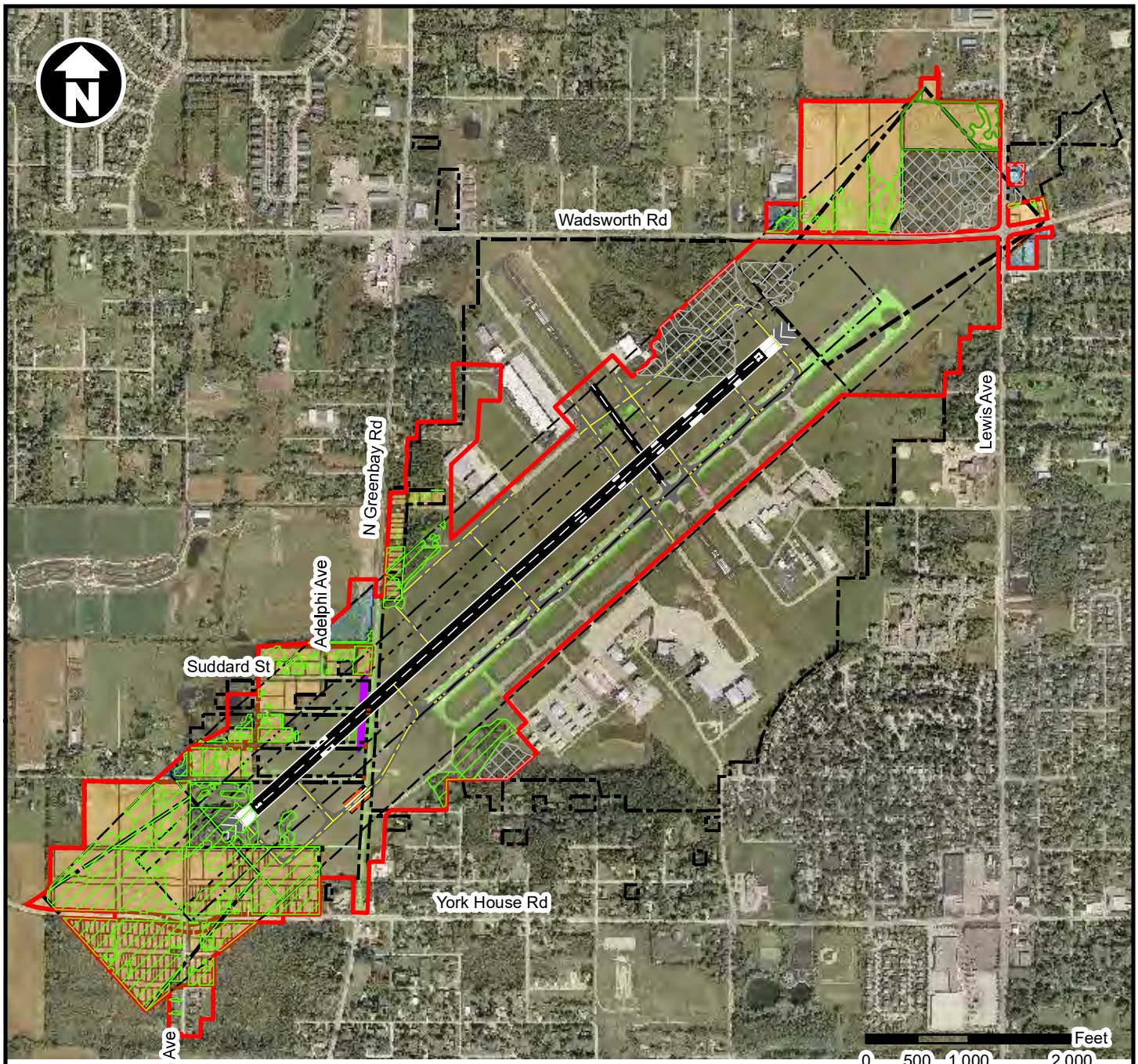
Williams, N. M., J. M. Mola, C. Stuligross, T. Harrison, M. L. Page, R. M. Brennan, N. M. Rosenberger, and M. Rundlöf. 2019. Fantastic bees and where to find them: locating the cryptic overwintering queens of a western bumble bee. Ecosphere 10(11):e02949. 10.1002/ecs2.2949.

Wolf, A.T, J.C. Watson, T.J. Hyde, S.G. Carpenter, and R.P. Jean. 2022. Floral Resources Used by the Endangered Rusty Patched Bumble Bee (*Bombus affinis*) in the Midwestern United States. Natural Areas Journal, 42(4), 301-312. Available from: https://doi.org/10.3375/22-2.

The Xerces Society for Invertebrate Conservation. Bumble bees: rusty patched bumble bee (*Bombus affinis*). https://xerces.org/rusty-patched-bumble-bee/. Accessed March 27, 2019.

The Xerces Society, Wildlife Preservation Canada, York University, University of Ottawa, The Montreal Insectarium, The London Natural History Museum, BeeSpotter. <year data was extracted>. Data accessed from Bumble Bee Watch, a collaborative website to track and conserve North America's bumble bees. Available from http://www.bumblebeewatch.org/app/#/bees/lists. Accessed: October 28, 2022.

Appendix A – Mapping and Exhibits



- Action Area
- Runway Object Free Area
- Runway Safety Area
- F-CL
- F-Marking
- F-Marking - Apron
- 50' Elevation Part 77 Surface
- Runway Protection Zones
- Future Airport Property Line
- Existing Airport Property Line
- Runway
- Airfield Pavement
- Taxiway Bridge
- Future Roadway Tunnel
- Pavement Removals
- Fee Simple Acq. & Pot. Clearing/Demo Limits
- Tree Removal Areas
- Trees Removed As Part Of Other NEPA-Approved Action
- Trees to Remain

Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Sponsor's Proposed Action

CMT
Crawford, Murphy & Tilly

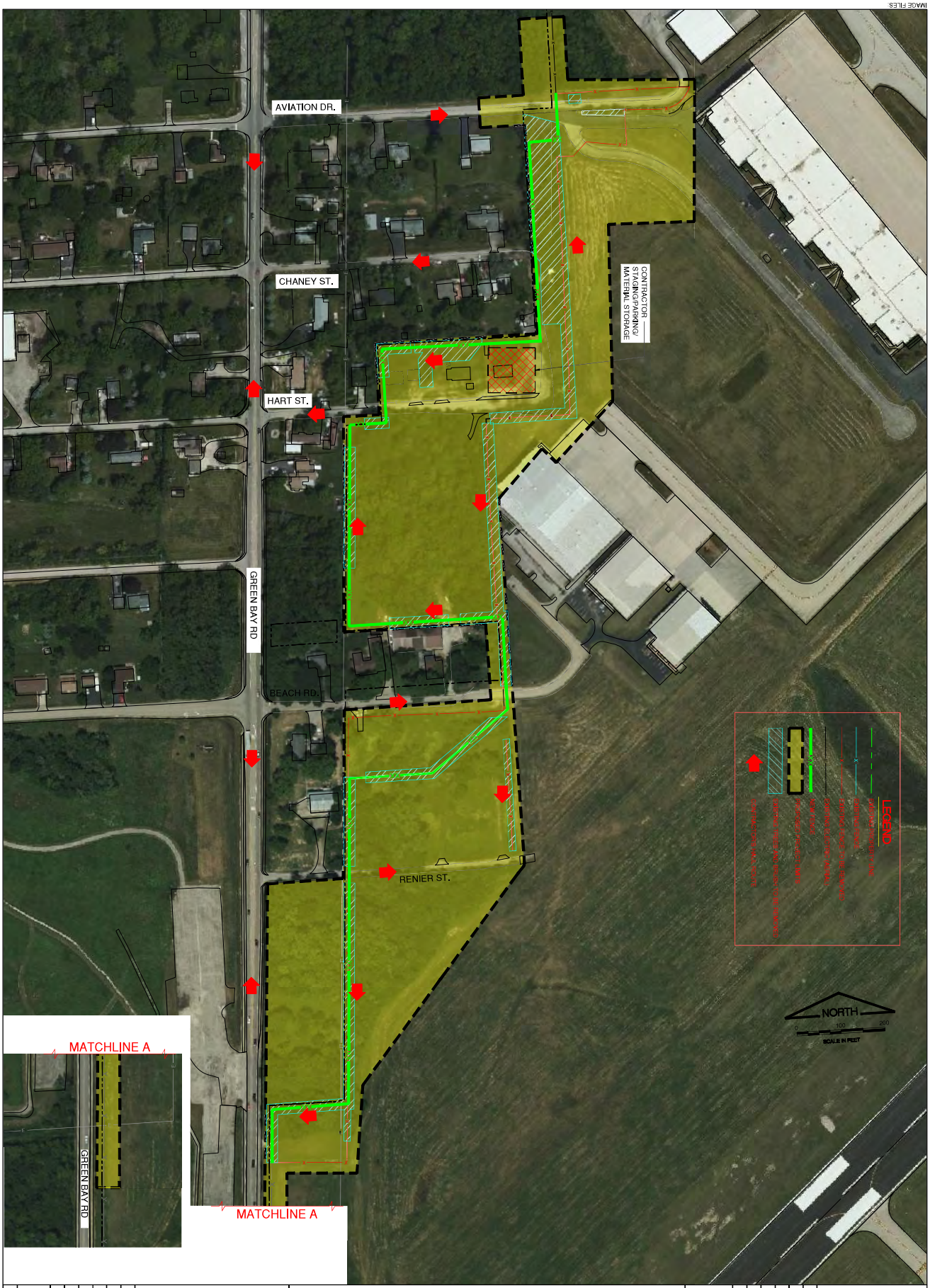


IMAGE FILES

K:\Waukegan\P\18226-02_FencePh5\Dwg\Exhibit

FILE: SPA.dwg
LAYOUT: Layout1
UPDATE BY: Tony Marin
SURVEY BOOK #:
DATE: Wednesday, February 17, 2021 2:43:02 PM
XREF DWG: Site Plan w Parcel Numbers - 100Sc

REVISIONS			
NUMBER	BY	DATE	
1	ARM	2/17/21	

THIS SHEET IS FOR PLOTTING AT FULL SCALE (24X22).
0 1 2

WAUKEGAN NATIONAL AIRPORT
WAUKEGAN, ILLINOIS

PROPOSED FENCE - PHASE 5
SPONSOR'S PROPOSED ACTION PLAN

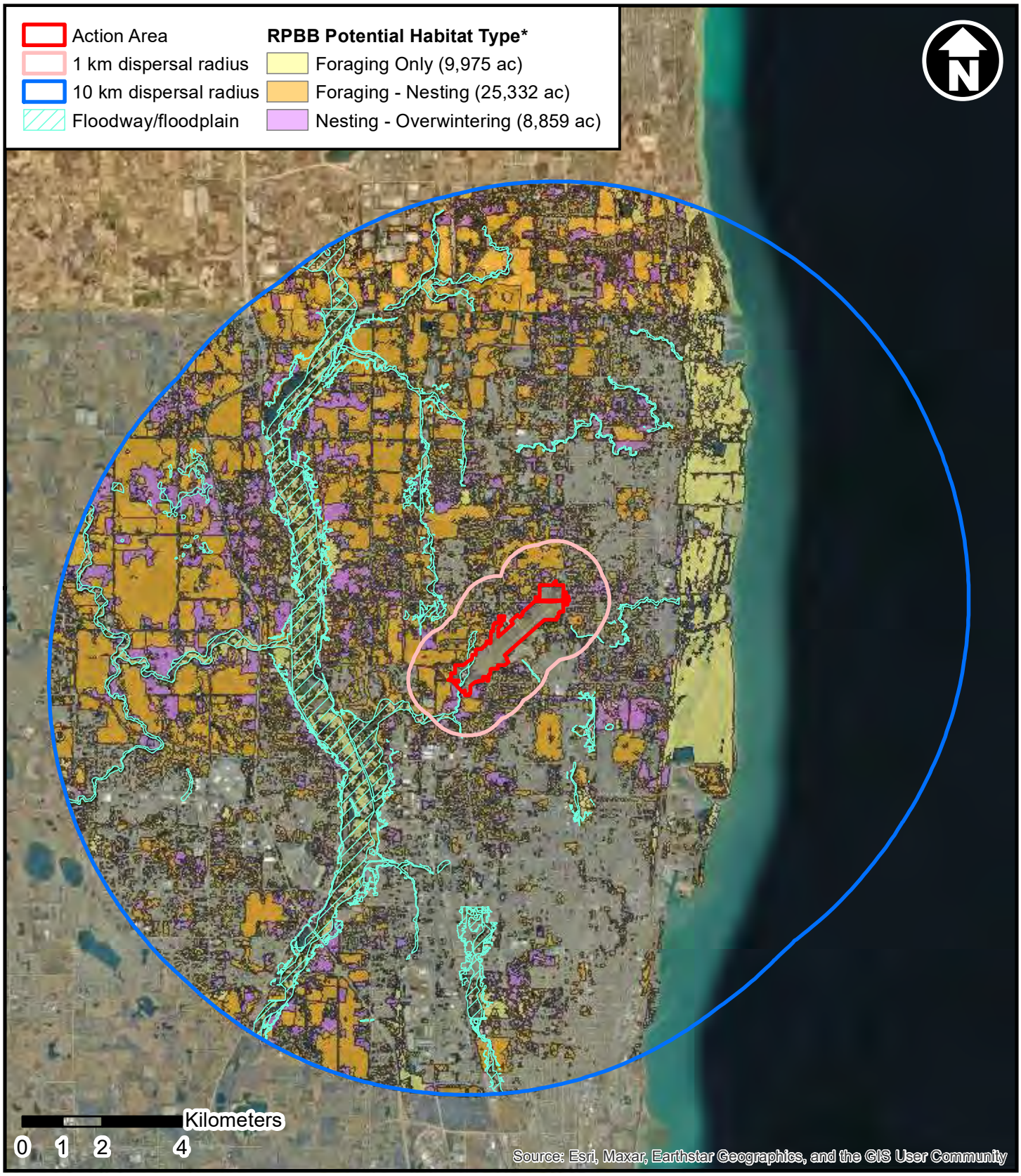
© Copyright CMT, Inc.

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
License No. 184-000613

DESIGN BY:	CAL
DRAWN BY:	JRO
CHECKED BY:	CAL
APPROVED BY:	
DATE:	10/07/2020
JOB No:	18226-01-10

EXHIBIT

SHEET 1 OF 1 SHEETS

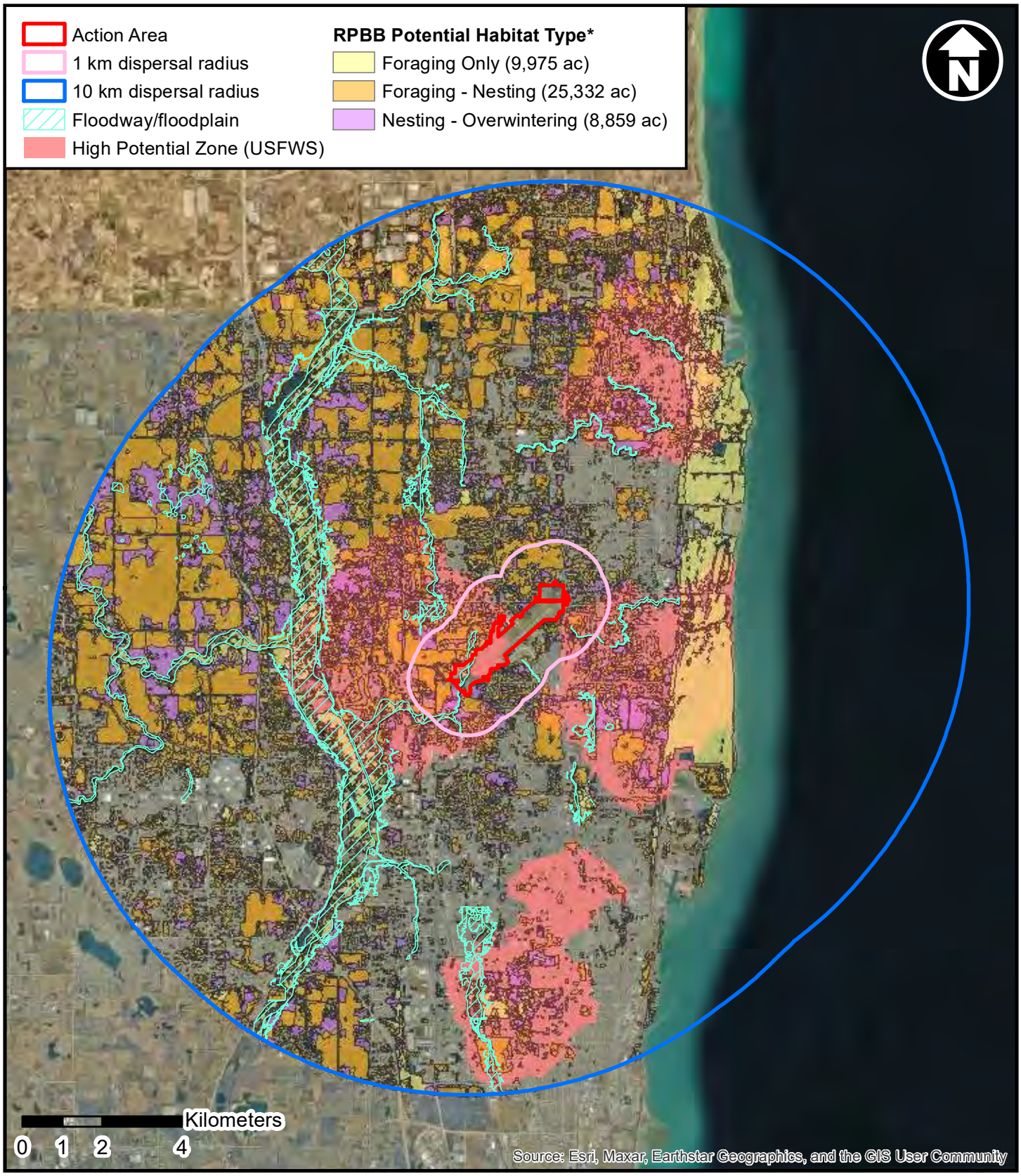


*Potential habitat type were inferred via currently available satellite imagery, NLDS landcover data, FEMA floodplain data, and National Wetlands Inventory data at a macroscale level. Potential foraging habitat was classified by the inferred presence of grasslands/prairies, wetlands, wooded areas, and suburban/urban gardens that provide floral resources; potential nesting habitat was classified by the inferred presence of grassland-type or wooded habitat that is not located within wetlands or floodplains; and potential overwintering habitat was classified by the inferred presence of wooded areas not located within wetlands or floodplains. It is important to note that inferred potential habitat areas have not been verified in the field.

Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Rusty Patched Bumble Bee Off-Site Habitat Proximity Map

CMT
Crawford, Murphy & Tilly

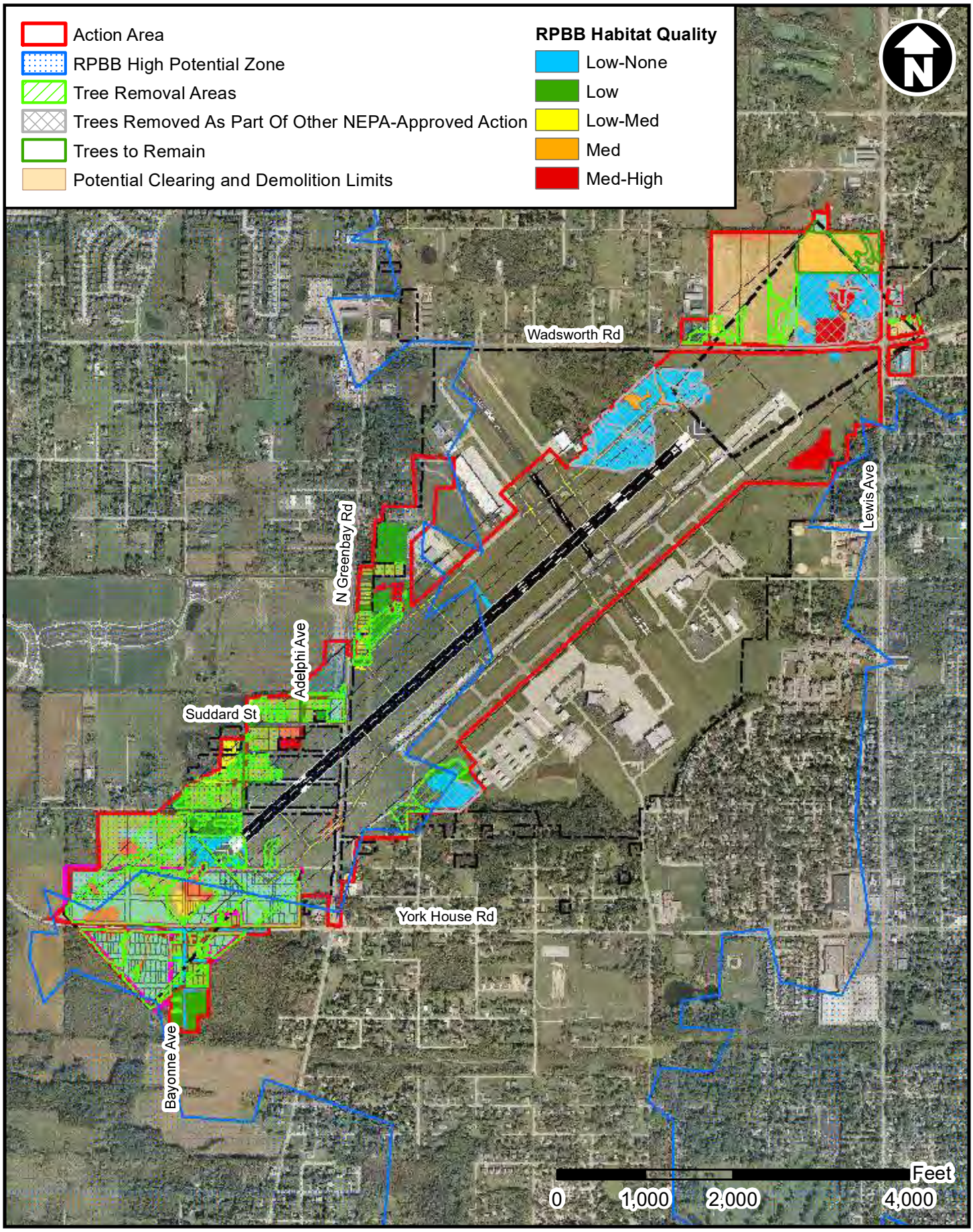


*Potential habitat type were inferred via currently available satellite imagery, NLDS landcover data, FEMA floodplain data, and National Wetlands Inventory data at a macroscale level. Potential foraging habitat was classified by the inferred presence of grasslands/prairies, wetlands, wooded areas, and suburban/urban gardens that provide floral resources; potential nesting habitat was classified by the inferred presence of grassland-type or wooded habitat that is not located within wetlands or floodplains; and potential overwintering habitat was classified by the inferred presence of wooded areas not located within wetlands or floodplains. It is important to note that inferred potential habitat areas have not been verified in the field.

Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Rusty Patched Bumble Bee Off-Site Habitat Proximity Map

CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Impact Map

CMT
Crawford, Murphy & Tilly

Appendix B – Data

Alexandra Zelles

From: Heather Lacey
Sent: Tuesday, August 9, 2022 10:32 AM
To: Cirton, Shawn
Cc: Skip Goss; Craig Louden; Terry Schaddel; Alexandra Zelles; Beauchamp, Bob; azra.hussain@faa.gov; Wes Webb; Lah, Kristopher; joe.kath@illinois.gov
Subject: RE: [EXTERNAL] RE: Waukegan National Airport (UGN) Bat Mist Net Survey Report for Review

Thank you very much Joe and Shawn for the quick turnaround.

HEATHER LACEY | Crawford, Murphy & Tilly | w 937.701.6578 | m 937.307.0744
Environmental Group Manager

From: Cirton, Shawn <shawn_cirton@fws.gov>
Sent: Tuesday, August 9, 2022 10:46 AM
To: Heather Lacey <hlacey@cmtengr.com>
Cc: Skip Goss <sgoss@waukeganport.com>; Craig Louden <clouden@cmtengr.com>; Terry Schaddel <tschaddel@cmtengr.com>; Alexandra Zelles <azelles@cmtengr.com>; Beauchamp, Bob <bobb.beauchamp@faa.gov>; azra.hussain@faa.gov; Wes Webb <wes@apogee-environmental.com>; Lah, Kristopher <kristopher_lah@fws.gov>; joe.kath@illinois.gov
Subject: Re: [EXTERNAL] RE: Waukegan National Airport (UGN) Bat Mist Net Survey Report for Review

External Message: *This email was sent from someone outside of CMT. Please use caution with links and attachments from unknown senders or receiving unexpected emails.*

Heather,

I've completed our review of the Waukegan Airport Bat Survey Report and we are content with the report.

Sincerely,

Shawn Cirton
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Chicago Illinois Field Office
230 South Dearborn Street, Suite 2938
Chicago, IL 60604
(847)366-2345

From: Kath, Joe <Joe.Kath@Illinois.gov>
Sent: Tuesday, August 9, 2022 8:47 AM
To: Heather Lacey <hlacey@cmtengr.com>; Lah, Kristopher <kristopher_lah@fws.gov>; Cirton, Shawn <shawn_cirton@fws.gov>
Cc: Skip Goss <sgoss@waukeganport.com>; Craig Louden <clouden@cmtengr.com>; Terry Schaddel

<tschaddel@cmtengr.com>; Alexandra Zelles <azelles@cmtengr.com>; Beauchamp, Bob <bobb.beauchamp@faa.gov>; azra.hussain@faa.gov <azra.hussain@faa.gov>; Wes Webb <wes@apogee-environmental.com>; joe.kath@illinois.gov <joe.kath@illinois.gov>
Subject: [EXTERNAL] RE: Waukegan National Airport (UGN) Bat Mist Net Survey Report for Review

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Thank you for providing a copy of the bat mist net survey report for the Waukegan National Airport. As no state or federally listed species were captured, there is nothing more required from the Illinois DNR. The report has been submitted to the Department's Natural Heritage Database for documentation purposes and future reference if needed.

Please do not hesitate to contact me with any questions you may have.

Thank you for your time and assistance.

-Joe-
Joseph A. Kath
Endangered Species Program Manager
Illinois Department of Natural Resources
One Natural Resources Way – Springfield, IL. 62702-1271
Office Phone: (217)785-8764
Work Cell: (217)993-2177
Fax: (217)785-2438
E-mail: Joe.Kath@illinois.gov

"The probability that we may fail in the struggle ought not to deter us from the support of a cause we believe to be just."

From: Heather Lacey <hlacey@cmtengr.com>
Sent: Monday, August 8, 2022 4:03 PM
To: kristopher_lah@fws.gov; Cirton, Shawn <shawn_cirton@fws.gov>; Kath, Joe <Joe.Kath@Illinois.gov>
Cc: Skip Goss <sgoss@waukeganport.com>; Craig Louden <clouden@cmtengr.com>; Terry Schaddel <tschaddel@cmtengr.com>; Alexandra Zelles <azelles@cmtengr.com>; Beauchamp, Bob <bobb.beauchamp@faa.gov>; azra.hussain@faa.gov; Wes Webb <wes@apogee-environmental.com>
Subject: [External] Re: Waukegan National Airport (UGN) Bat Mist Net Survey Report for Review

Good afternoon all,
I am just following up on behalf of the airport to check on the status of the review. Is there anything else we can do to assist?

Thanks,

Heather Lacey
CMT

Get Outlook for iOS

From: Heather Lacey <hlacey@cmtengr.com>
Sent: Wednesday, August 3, 2022 5:29 PM
To: kristopher_lah@fws.gov <kristopher_lah@fws.gov>; Cirton, Shawn <shawn_cirton@fws.gov>; joe.kath@illinois.gov <joe.kath@illinois.gov>
Cc: Skip Goss <sgoss@waukeganport.com>; Craig Louden <clouden@cmtengr.com>; Terry Schaddel <tschaddel@cmtengr.com>; Alexandra Zelles <azelles@cmtengr.com>; Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>; azra.hussain@faa.gov <azra.hussain@faa.gov>; Wes Webb <wes@apogee-environmental.com>
Subject: Waukegan National Airport (UGN) Bat Mist Net Survey Report for Review

At the request of Azra Hussain with the FAA, I'm transmitting the referenced survey report for your review and approval. Please let us know if you need anything else.

HEATHER LACEY | Crawford, Murphy & Tilly | w 937.701.6578 | m 937.307.0744
Environmental Group Manager

From: Hussain, Azra (FAA) <azra.hussain@faa.gov>
Sent: Wednesday, August 3, 2022 5:22 PM
To: Heather Lacey <hlacey@cmtengr.com>; Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Cc: Skip Goss <sgoss@waukeganport.com>; Craig Louden <clouden@cmtengr.com>; Terry Schaddel <tschaddel@cmtengr.com>; Alexandra Zelles <azelles@cmtengr.com>
Subject: RE: UGN Bat Mist Net Survey Report

External Message: *This email was sent from someone outside of CMT. Please use caution with links and attachments from unknown senders or receiving unexpected emails.*

Bobb is out today. Can you forward to FWS and IDNR for their review right away please, unless you need FAA approval/concurrence before their review.

Regards,
Azra

Azra Hussain, PE (IN)
Program Manager CHI-605
FAA Airports
Chicago Airports District Office
2300 E Devon Ave, Ste 312
Des Plaines, IL 60018
T 847 294 7340
C 317 238 9745
F 847 294 7046
E azra.hussain@faa.gov

From: Heather Lacey <hlacey@cmtengr.com>
Sent: Wednesday, August 3, 2022 2:31 PM
To: Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Cc: Hussain, Azra (FAA) <azra.hussain@faa.gov>; Skip Goss <sgoss@waukeganport.com>; Craig Louden <clouden@cmtengr.com>; Terry Schaddel <tschaddel@cmtengr.com>; Alexandra Zelles <azelles@cmtengr.com>
Subject: UGN Bat Mist Net Survey Report

Good afternoon Bobb,
Attached is the referenced survey report covering both the area for the obstruction removal project and the new runway project. We understand that this report needs to get approved very quickly by both IDNR and USFWS (by Friday 8/85/22). Reviewing the email correspondence, it appears the report needs to be submitted to the following individuals after your review:

Cirton, Shawn <shawn_cirton@fws.gov>
Kristopher Lah kristopher_lah@fws.gov
Kath, Joe joe.kath@illinois.gov

Please let us know if you need any revisions made prior to coordinating with USFWS and IDNR.

Thanks!

HEATHER LACEY | **Crawford, Murphy & Tilly** | w 937.701.6578 | m 937.307.0744
Environmental Group Manager

State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all attachments. Receipt by an unintended recipient does not waive attorney-client privilege, attorney work product privilege, or any other exemption from disclosure.

SUMMER MIST-NET SURVEY FOR FEDERALLY THREATENED AND ENDANGERED BATS AT THE WAUKEGAN NATIONAL AIRPORT, LAKE COUNTY, ILLINOIS

PREPARED BY:
Apogee, Inc.

PREPARED FOR:
Crawford, Murphy, & Tilly, Inc., IDNR, and U.S. Fish & Wildlife Service

APOGEE PROJECT NUMBER:
22-1119.00

July 2022

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 2

2.0 INTRODUCTION 3

3.0 PROJECT LOCATION 3

4.0 METHODS 3

4.1 Mist-Net Locations 3

4.2 White-Nose Syndrome 4

4.3 Habitat Assessment 4

5.0 RESULTS 4

5.1 Bat Captures 4

5.2 Radio Telemetry 4

5.3 Habitat Assessment 4

6.0 DISCUSSION 4

APPENDIX A. Project Location Maps

APPENDIX B. Completed Data Sheets

APPENDIX C. Mist-Net Site Photos

1.0 EXECUTIVE SUMMARY

A total of nine (9) bats were captured during survey efforts for the Waukegan Airport Bat Survey. Of the nine captures, three (3) were big brown bats (*Eptesicus fuscus*), and six (6) were eastern red bats (*Lasiurus borealis*). No threatened or endangered bat species were captured. This summer mist-net survey was conducted under appropriate conditions and followed survey protocols to monitor the resources within the project area.

2.0 INTRODUCTION

Apogee, Inc. (Apogee) was contracted by Crawford, Murphy, & Tilly, Inc. (CMTI) to assess the status of federally threatened and endangered bats for the Waukegan National Airport Project (Project) in Lake County, Illinois.

The following summer mist-net survey report details the protocols followed and the findings of field investigations conducted by Apogee. Apogee is submitting this bat survey report on behalf of CMTI to fulfill the requirements for Section 7 of the Endangered Species Act consultation process as set forth by the US Fish & Wildlife Service (USFWS).

3.0 PROJECT LOCATION

The project area surrounds the Waukegan National Airport approximately 0.51 miles west of Beach Park, Illinois. The proposed project area consists of scattered woodlots that will need to be cleared for the proposed expansion of the airport's facilities and covers approximately 101 acres. Topography surrounding the project area is characterized as generally flat (due to proximity to Lake Michigan). Elevation in the project area ranges between 650 – 775 feet above sea level. The project is located on the Zion and Wadsworth United States Geological Survey (USGS) 7.5-minute topographic quadrangle map. Project location (aerial and topo) maps can be found in Appendix A.

4.0 METHODS

4.1 Mist-Net Locations

The level of survey effort was based upon the size of the surface disturbance to potential Indiana bat (*Myotis sodalis*) and northern long-eared bat habitat (NLEB; *Myotis septentrionalis*) (approximately 101 acres). Summer mist-net surveys were conducted at two (2) sites, four (4) nets per site, and two (2) nights per site for a total of sixteen (16) net nights of survey effort. Surveys were conducted July 24th and 25th, 2022. Surveys strictly followed methods set forth by the USFWS's *2022 Indiana Bat & Northern Long-eared Bat Survey Guidelines*, dated March 2022.

After conducting *in situ* site reconnaissance, the originally selected net sites (selected via desktop) were relocated due to extremely young woods (i.e., lack of canopy closure), overgrown vegetation of water resources, and lack of quality corridors/ potential net locations. Thus, both sites were relocated in the forested stand that contained a network of trails. These trails had the best habitat available (side and top canopy closure) that provided the highest potential to capture bats and to accurately represent bat species/populations within the proposed project area. Nets were spaced at least 100 feet (30 meters) apart so as not to interfere with each other. Net locations were selected in areas that provided potential flight corridors that could serve as a natural funnel, which aided in the capture of volant bats. The net site locations were discussed with Illinois USFWS representatives before, during, and after fieldwork to meet survey protocols and to avoid false negative survey results.

Bats were captured using black nylon mist-nets (38mm mesh) ranging from six to 18 meters wide. Nets were opened at sunset (approximately at 20:35) and checked every 10 minutes for at least five hours. The capture time, species, age, sex, reproductive condition, right forearm (RFA) length, mass, wing score, net, and net capture height (in meters) were recorded. All bats captured were released unharmed at the point of capture.

Bat identification was performed by a qualified and permitted bat biologist. Completed data sheets can be found in Appendix B.

4.2 White-Nose Syndrome

In an effort to minimize the potential transmission of white-nose syndrome on captured bats, all netting and field activities followed the most recent decontamination protocols (October 2020) set forth by the USFWS. All disposable scientific equipment (bags and exam gloves) were used on only one bat and then discarded. All submersible equipment (mist-nets and ropes) were submersed in hot water that maintained a temperature of at least 55°C (131°F) for a minimum of 20 minutes on a nightly basis. All non-submersible equipment (rulers, calipers, and scales) was wiped down with Lysol® IC Quaternary Disinfectant Cleaner Wipes after each use between bats. Poles were wiped down at the end of each night.

4.3 Habitat Assessment

Qualified biologists followed methods set forth by the USFWS while conducting the habitat assessment. The entirety of the project area was reconned before initiation of the survey to determine the highest quality net site locations.

A. Summer Habitat

In order to assess the permit area for potential summer habitat, biologists conducted a desktop review of the entire permit area. Qualified biologists used the most recent aerial photography to delineate non-forested and forested areas within the permit boundaries and to determine the distance in miles to the available water sources.

B. Winter Habitat

In order to determine if potential winter habitat was present within the permit area, qualified biologists reviewed karst occurrence, mining history, and environmental resource maps to determine if any open abandoned mines or karst areas were present within or adjacent to the surface mine.

5.0 RESULTS

5.1 Bat Captures

Captures for the survey yielded a total of nine bats; three (3) big brown bats and six (6) eastern red bats. No threatened or endangered bat species were captured during the survey efforts. Data sheets can be found in Appendix B.

5.2 Radio Telemetry

No Indiana bats or NLEBs were captured during survey efforts; therefore, no telemetry or roost tree emergence counts were conducted.

5.3 Habitat Assessment

A. Summer Habitat

Desktop review of the most recent aerial photography and field reconnaissance determined there to be potential NLEB and Indiana bat summer habitat consisting of forest with snags and trees ≥ three- and five-inches diameter at breast height, respectively per species. Significant water sources were observed within or adjacent to the prosed permit area.

B. Winter Habitat

No caves, rock shelters, or abandoned underground mines were observed during the field reconnaissance. Review of the karst occurrence, mining history, and environmental resource maps also showed no previously identified portals within the project area.

6.0 DISCUSSION

This mist-net survey was conducted with the appropriate level of effort and under the appropriate conditions to investigate presence/absence of threatened or endangered bats. A total of nine (9) bats were captured during survey efforts comprised of two species. No federally threatened or endangered species were captured during the mist-net survey.

The results of this survey indicate that the project will not likely adversely affect Indiana bat or NLEB populations in the area.

APPENDIX A

PROJECT LOCATION MAPS



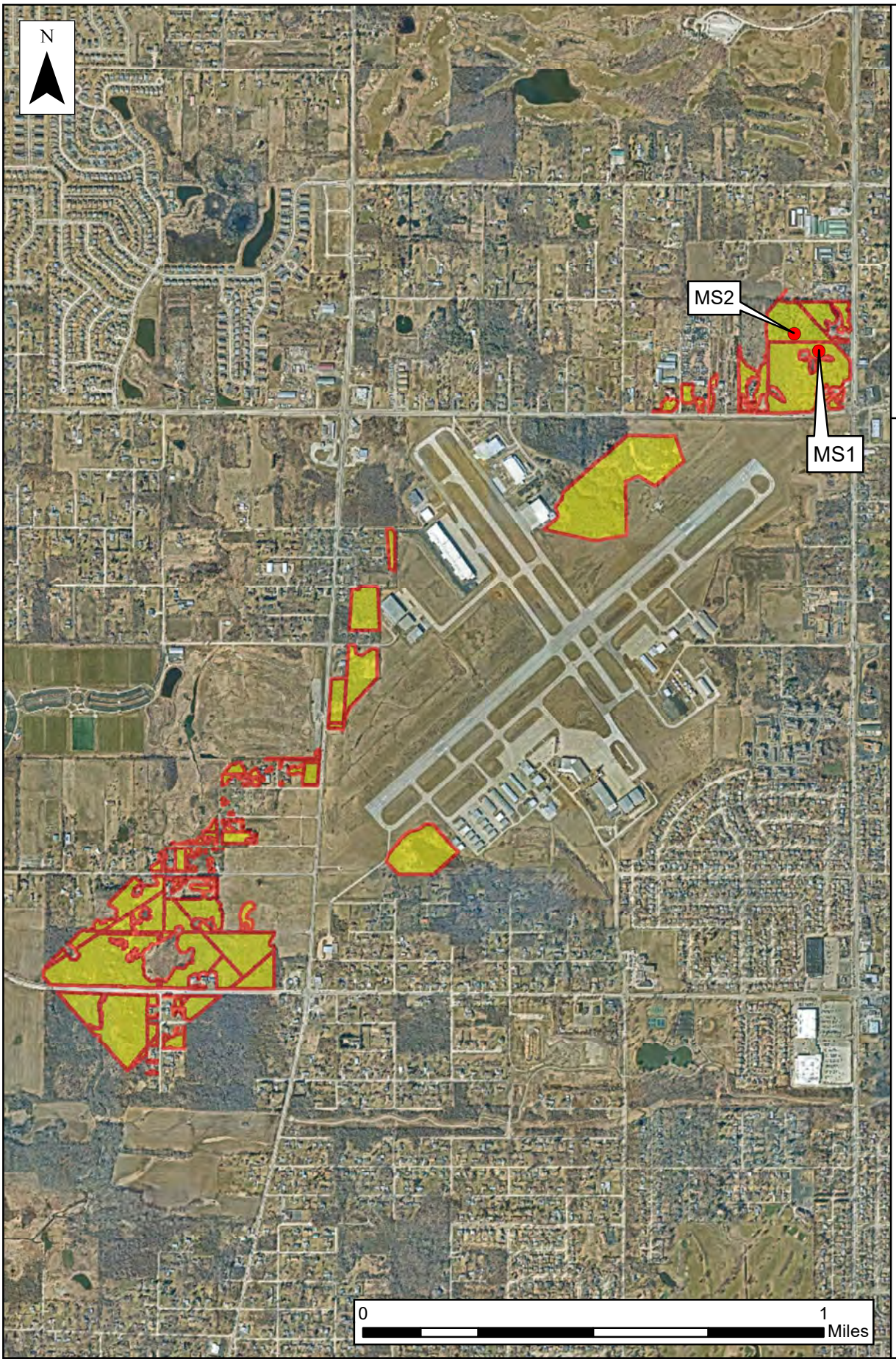
Waukegan National Airport Bat Survey

Lake County, Illinois

Project# 22-1119.00

Netting Locations

Project Area



Waukegan National Airport Bat Survey

Lake County, Illinois

Project# 22-1119.00

Netting Locations

Project Area

APPENDIX B

COMPLETED DATA SHEETS

Bat Capture Data Sheet

Site No: MS1	**Project No.:** 22-1119.00	**Company:**	**Project Name:** Waukegan Bat Survey	**Date:** 24 July, 2022
Location: Waukegan		**Pipeline Segment:** N/A	**KM Block No.** N/A	**Approx. Mile Post:** N/A
County: Lake		**State:** Illinois	**Surveyor(s):** Stephanie R Penk	
Lat/Long	N 42.430278°	**W** -87.856389°	**Quad:**	**Tract No.:**

#	Time	Species	Age	Sex	Repro. Cond **	RFA (MM)	Mass (g)	Wing Score*	Band No.	Guano/ Hair	Net Name	Net Height	Photo
1	22:45	LABO	Jv	F	NR	40	10.5	0	N/A	N/A	D	1.5	Y
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													

*Wing Score: (**0**) No Damage; (**1**) Light Damage (<50%); (**2**) Moderate Damage (>50%); (**3**) Heavy Damage **-** deteriorated wing membrane with isolated holes

** Repro. Cond (Reproductive Condition): (**P**) Pregnant; (**L**) Lactating; (**PL**) Post-lactating; (**NR**) Non-reproductive; (**TD**) Testes descended

Moon Phase: Waning crescent

	Rise	Set
Moon	0150	1742
Sun	0534	2021

Time	Temp	Sky	Wind	# Bats
2030	28°C	2	2	0
2130	26°C	2	2	0
2230	25°C	2	2	0
2330	23°C	1	1	1
0030	22°C	2	1	0
0130	22°C	1	1	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or Overcast
4	Smoke or Fog
5	Drizzle or Light Rain
6	Thunderstorm

Beauford Wind Code	
0	Calm (0 mph)
1	Light Wind (1-3 mph)
2	Light Breeze (4-7 mph)
3	Gentle Breeze (8-12 mph)
4	Moderate Breeze (13-18 mph)

Acoustic Unit Serial No: N/A

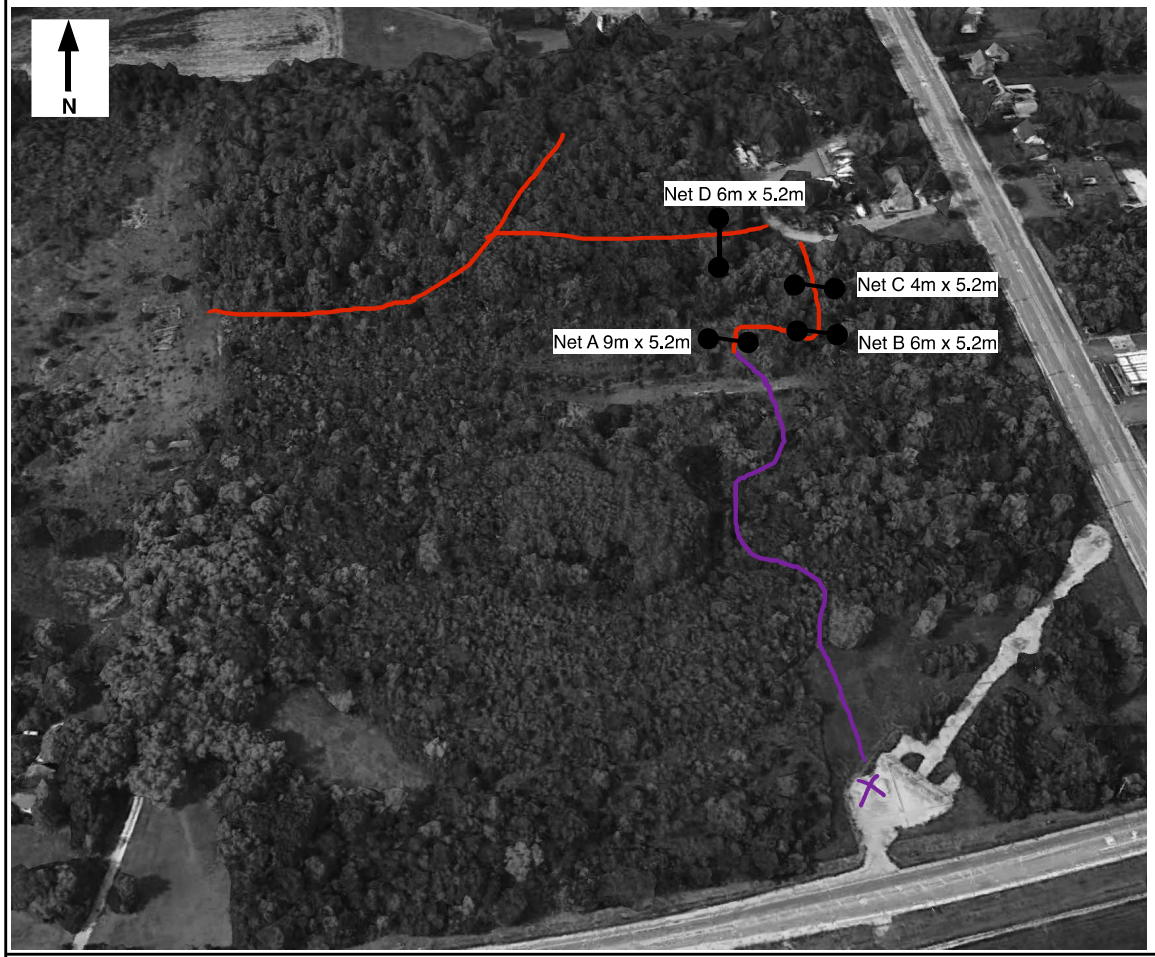
Lat: N

Long: W

Apogee,Inc.

Bat Capture Data Sheet

Net Site Diagram



Dominant Vegetation

1	Gleditsia triacanthos
2	Juglans nigra
3	Pinus strobus
4	Quercus stellata
5	Fraxinus spp.

Other Species:

Acer nigrum
Populus deltoides
Quercus palustris

Net Site(s) by Habitat

Habitat	A	B	C	D	
River					
Stream					
Pond					
Road Rut					
Corridor	X	X	X	X	
Cave/Mine					
Total	1	1	1	1	

No. of Nets	X	Net Height	X	Net Width	Total Area
A	2	X	2.6	X	9	46.8
B	2	X	2.6	X	6	31.2
C	2	X	2.6	X	4	20.8
D	2	X	2.6	X	6	31.2

Comments:

Habitat consists of a young deciduous forest and old pine plantation. Appears to be unmanaged with dense understory and invasive species.

Small, old trails were located within the stand (red lines). Two nets were placed within the forest interior across trails (C, D), one placed across trail entrance (B), and another across the trail before it enters the woods (A). To access site through airport property, park at the "x" and pass through overgrown area and ROW to trails (purple line).

Bat Capture Data Sheet

Site No: MS1	**Project No.:** 22-1119.00	**Company:**	**Project Name:** Waukegan Bat Survey	**Date:** 25 July, 2022
Location: Waukegan		**Pipeline Segment:** N/A	**KM Block No.** N/A	**Approx. Mile Post:** N/A
County: Lake		**State:** Illinois	**Surveyor(s):** Stephanie R Penk	
Lat/Long	N 42.430278°	W -87.856389°	**Quad:**	**Tract No.:** N/A

#	Time	Species	Age	Sex	Repro. Cond **	RFA (MM)	Mass (g)	Wing Score*	Band No.	Guano/ Hair	Net Name	Net Height	Photo
1	23:10	LABO	Jv	M	NR	38	9.75	0	N/A	N/A	D	1.0	N
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													

*Wing Score: (**0**) No Damage; (**1**) Light Damage (<50%); (**2**) Moderate Damage (>50%); (**3**) Heavy Damage **-** deteriorated wing membrane with isolated holes

** Repro. Cond (Reproductive Condition): (**P**) Pregnant; (**L**) Lactating; (**PL**) Post-lactating; (**NR**) Non-reproductive; (**TD**) Testes descended

Moon Phase: Waning crescent

	Rise	Set
Moon	0230	1838
Sun	0535	2020

Time	Temp	Sky	Wind	# Bats
2030	20°C	3	2	0
2130	20°C	2	1	0
2230	19°C	2	1	0
2330	19°C	1	1	1
0030	18°C	2	1	0
0130	18°C	1	1	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or Overcast
4	Smoke or Fog
5	Drizzle or Light Rain
6	Thunderstorm

Beauford Wind Code	
0	Calm (0 mph)
1	Light Wind (1-3 mph)
2	Light Breeze (4-7 mph)
3	Gentle Breeze (8-12 mph)
4	Moderate Breeze (13-18 mph)

Acoustic Unit Serial No: N/A

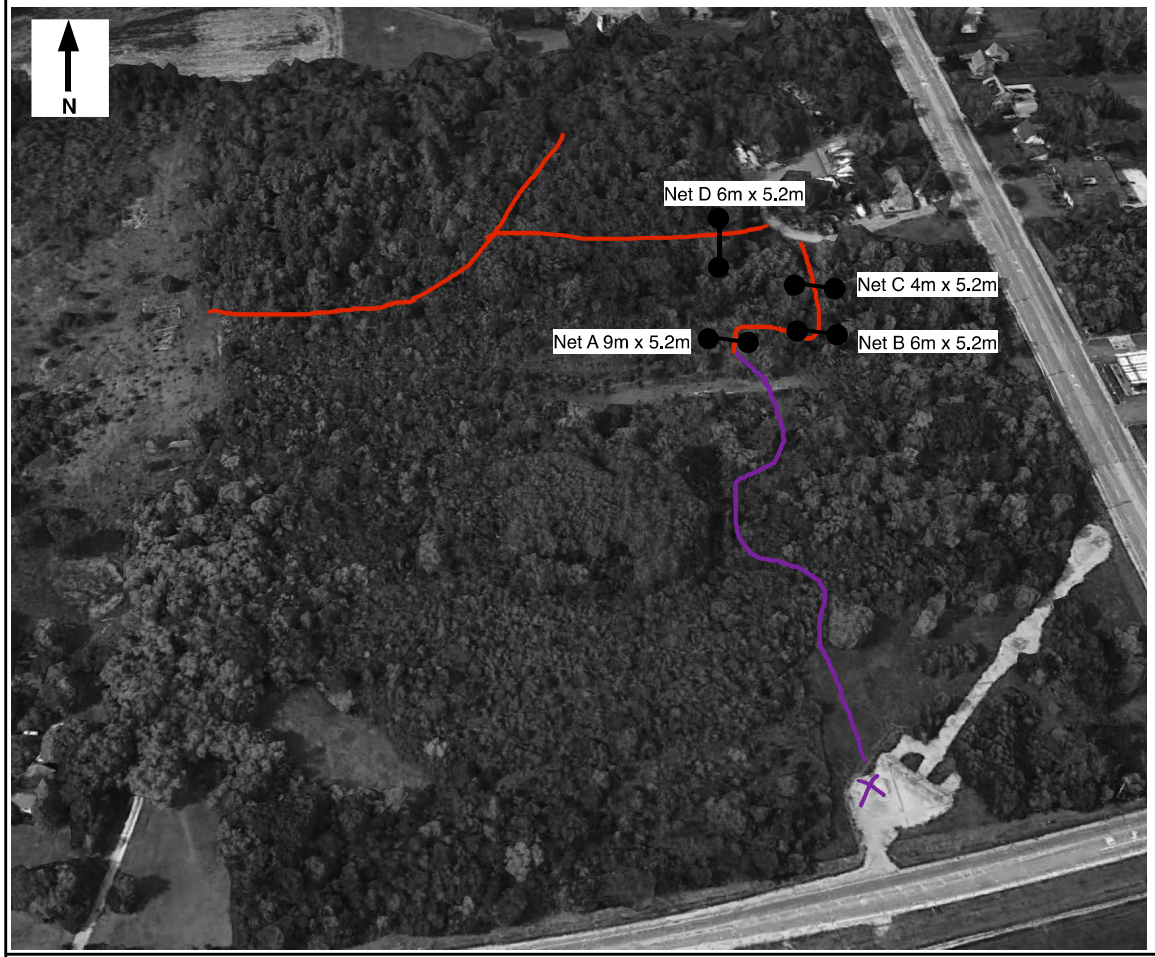
Lat: N

Long: W

Apogee,Inc.

Bat Capture Data Sheet

Net Site Diagram



Dominant Vegetation

1	Gleditsia triacanthos
2	Juglans nigra
3	Pinus strobus
4	Quercus stellata
5	Fraxinus spp.

Other Species:

Acer nigrum
Populus deltoides
Quercus palustris

Net Site(s) by Habitat

Habitat	A	B	C	D	
River					
Stream					
Pond					
Road Rut					
Corridor	X	X	X	X	
Cave/Mine					
Total	1	1	1	1	

No. of Nets	X	Net Height	X	Net Width	Total Area
A	2	X	2.6	X	9	46.8
B	2	X	2.6	X	6	31.2
C	2	X	2.6	X	4	20.8
D	2	X	2.6	X	6	31.2

Comments:

Habitat consists of a young deciduous forest and old pine plantation. Appears to be unmanaged with dense understory and invasive species.

Small, old trails were located within the stand (red lines). Two nets were placed within the forest interior across trails (C, D), one placed across trail entrance (B), and another across the trail before it enters the woods (A). To access site through airport property, park at the "x" and pass through overgrown area and ROW to trails (purple line).

Bat Capture Data Sheet

Site No: MS2	**Project No.:** 22-1119.00	**Company:**	**Project Name:** Waukegan Bat Survey	**Date:** 24 July, 2022
Location: Waukegan		**Pipeline Segment:** N/A	**KM Block No.** N/A	**Approx. Mile Post:** N/A
County: Lake		**State:** Illinois	**Surveyor(s):** Dylan L Brooks	
Lat/Long	N 42.430829°	**W** -87.857426°	**Quad:**	**Tract No.:**

#	Time	Species	Age	Sex	Repro. Cond **	RFA (MM)	Mass (g)	Wing Score*	Band No.	Guano/ Hair	Net Name	Net Height	Photo
1	2155	EPFU	Jv	M	NR	46	16	0	N/A	N/A	A	3	Y
2	2310	EPFU	Ad	F	PL	48	19	0	N/A	N/A	B	3.5	N
3	0020	LABO	Ad	F	PL	41	13	0	N/A	N/A	A	1.5	N
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													

*Wing Score: (**0**) No Damage; (**1**) Light Damage (<50%); (**2**) Moderate Damage (>50%); (**3**) Heavy Damage **-** deteriorated wing membrane with isolated holes

** Repro. Cond (Reproductive Condition): (**P**) Pregnant; (**L**) Lactating; (**PL**) Post-lactating; (**NR**) Non-reproductive; (**TD**) Testes descended

Moon Phase: Waning crescent

	Rise	Set
Moon	0150	1742
Sun	0534	2021

Time	Temp	Sky	Wind	# Bats
2030	27°C	2	2	0
2130	25°C	2	1	0
2230	25°C	2	1	2
2330	23°C	1	1	0
0030	22°C	2	1	1
0130	22°C	1	1	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or Overcast
4	Smoke or Fog
5	Drizzle or Light Rain
6	Thunderstorm

Beauford Wind Code	
0	Calm (0 mph)
1	Light Wind (1-3 mph)
2	Light Breeze (4-7 mph)
3	Gentle Breeze (8-12 mph)
4	Moderate Breeze (13-18 mph)

Acoustic Unit Serial No: N/A

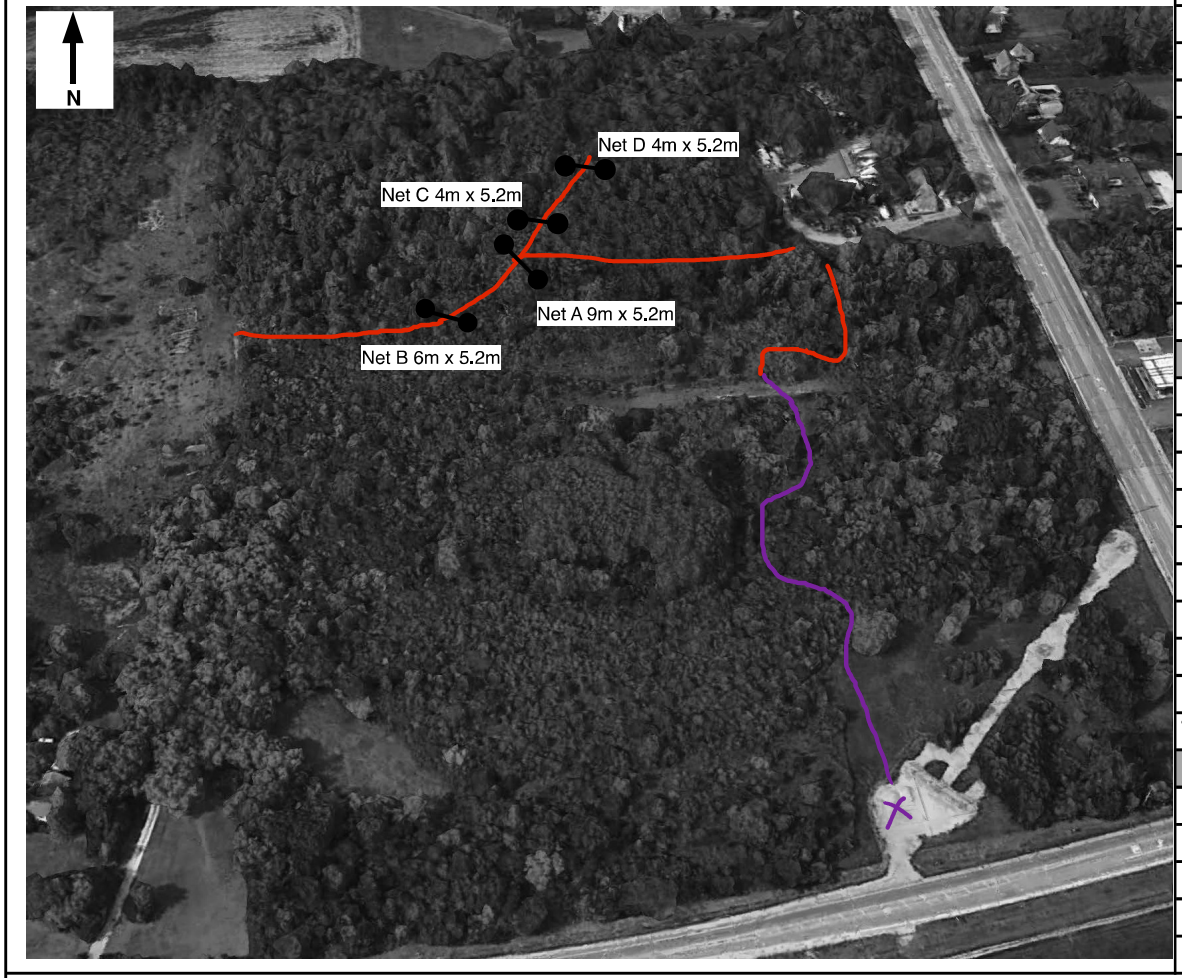
Lat: N

Long: W

Apogee,Inc.

Bat Capture Data Sheet

Net Site Diagram



Dominant Vegetation

1	Pinus strobus
2	Juglans nigra
3	Gleditsia triacanthos
4	Quercus stellata
5	

Other Species:

Acer nigrum

Fraxinus spp.

Quercus palustris

Net Site(s) by Habitat

Habitat	A	B	C	D	
River					
Stream					
Pond					
Road Rut					
Corridor	X	X	X	X	
Cave/Mine					
Total	1	1	1	1	

	No. of Nets	X	Net Height	X	Net Width	Total Area
A	2	X	2.6	X	9	46.8
B	2	X	2.6	X	6	31.2
C	2	X	2.6	X	4	20.8
D	2	X	2.6	X	4	20.8

Comments:

All nets were placed along forest trail going through mature pine plantation. Plantation understory dense with high presence of invasive species.

Bat Capture Data Sheet

Site No: MS2	**Project No.:** 22-1119.00	**Company:**	**Project Name:** Waukegan Bat Survey	**Date:** 25 July, 2022
Location: Waukegan		**Pipeline Segment:** N/A	**KM Block No.** N/A	**Approx. Mile Post:** N/A
County: Lake		**State:** Illinois	**Surveyor(s):** Dylan L Brooks	
Lat/Long	N 42.430829°	**W** -87.857426°	**Quad:**	**Tract No.:**

#	Time	Species	Age	Sex	Repro. Cond **	RFA (MM)	Mass (g)	Wing Score*	Band No.	Guano/ Hair	Net Name	Net Height	Photo
1	2140	LABO	Ad	M	TD	43	13	0	N/A	N/A	A	1.5	N
2	2200	LABO	Ad	F	PL	43	11.5	0	N/A	N/A	A	2	N
3	2245	EPFU	Ad	F	PL	48	19	0	N/A	N/A	A	2	N
4	0015	LABO	Jv	F	NR	41	10.5	0	N/A	N/A	D	3	N
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													

*Wing Score: (**0**) No Damage; (**1**) Light Damage (<50%); (**2**) Moderate Damage (>50%); (**3**) Heavy Damage **-** deteriorated wing membrane with isolated holes

** Repro. Cond (Reproductive Condition): (**P**) Pregnant; (**L**) Lactating; (**PL**) Post-lactating; (**NR**) Non-reproductive; (**TD**) Testes descended

Moon Phase: Waning crescent

	Rise	Set
Moon	0230	1838
Sun	0535	2020

Time	Temp	Sky	Wind	# Bats
2030	20°C	2	0	0
2130	20°C	2	1	0
2230	19C	0	0	2
2330	19°C	1	0	1
0030	18°C	1	1	1
0130	18°C	0	1	0

Sky Code	
0	Clear
1	Few Clouds
2	Partly Cloudy
3	Cloudy or Overcast
4	Smoke or Fog
5	Drizzle or Light Rain
6	Thunderstorm

Beauford Wind Code	
0	Calm (0 mph)
1	Light Wind (1-3 mph)
2	Light Breeze (4-7 mph)
3	Gentle Breeze (8-12 mph)
4	Moderate Breeze (13-18 mph)

Acoustic Unit Serial No: N/A

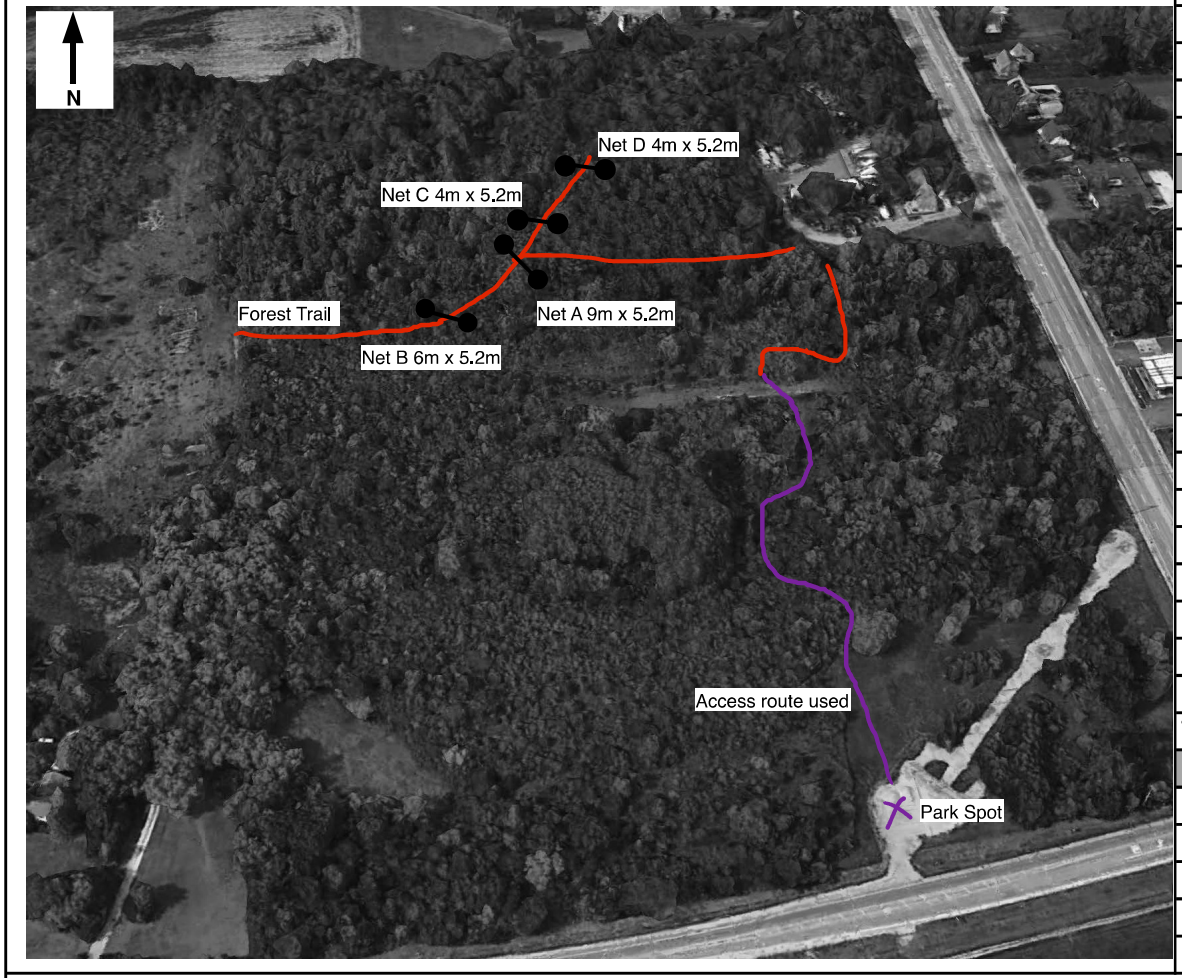
Lat: N

Long: W

Apogee,Inc.

Bat Capture Data Sheet

Net Site Diagram



Dominant Vegetation

1	Pinus strobus
2	Juglans nigra
3	Gleditsia triacanthos
4	Quercus stellata
5	

Other Species:

Acer nigrum

Fraxinus spp.

Quercus palustris

Net Site(s) by Habitat

Habitat	A	B	C	D	
River					
Stream					
Pond					
Road Rut					
Corridor	X	X	X	X	
Cave/Mine					
Total	1	1	1	1	

	No. of Nets	X	Net Height	X	Net Width	Total Area
A	2	X	2.6	X	9	46.8
B	2	X	2.6	X	6	31.2
C	2	X	2.6	X	4	20.8
D	2	X	2.6	X	4	20.8

Comments:

All nets were placed along forest trail going through mature pine plantation. Plantation understory dense with high presence of invasive species.

APPENDIX C

MIST-NET SITE PHOTOS



MS-1 Net A



MS-1 Net B



MS-1 Net C



MS-1 Net D



MS-2 Net A



MS-2 Net B



MS-2 Net C



MS-2 Net D

July 27, 2020

Waukegan Port District - Airport
2601 W Plane Rest Drive
Waukegan, IL 60087

Re: Endangered Species Act Compliance
Eastern prairie fringed orchid (*Platanthera leucophaea*) survey
Replacement Runway 5/23 Waukegan National Airport
Lake County, Illinois
ESR Seq19504A Addendum - (D1 Aero) - Lake Co

Crawford, Murphy & Tilly, Inc. (CMT) has completed an eastern prairie fringed orchid (*Platanthera leucophaea*) survey for the proposed Replacement Runway 5/23 project at Waukegan National Airport (UGN) in Lake County, Illinois. The project background, methodology, and results are presented in this correspondence.

Introduction

UGN is located on the north side of the City of Waukegan, Lake County, Illinois. Lake County is at the northeastern most tip of Illinois. The airport is situated approximately three miles west from Lake Michigan. The existing land use within the project area is mixed use with undeveloped, residential, and commercial properties. Location mapping are attached.

In September 2019, a wetland delineation and habitat survey were completed for the airport property and adjacent property that may be part of the 5/23 runway replacement. The delineation and habitat survey identified five wetlands (Wetlands 1, 3, 4, 6 and K) that met the requirements established by the U.S. Fish and Wildlife Service (USFWS) for habitat quality for the eastern prairie fringed orchid. Applicable pages from the delineation and ecological resources report are attached.

A survey to determine the presence/absence of this species was requested on July 1, 2020 by the Illinois Department of Transportation (IDOT) as part of the National Environmental Policy Act (NEPA) environmental review of the project and completed by CMT on July 6, 8, and 13, 2020. This survey provides documentation to IDOT, Illinois Department of Natural Resources (IDNR), the U.S. Army Corps of Engineers (USACE), and the USFWS that the eastern prairie fringed orchid is not present within Wetlands 1, 3, 4, 6 and K located within the limits of the project. This will serve as documentation to obtain Endangered Species Act Compliance from IDOT, IDNR, USACE, and the USFWS. The request for survey is attached.

Species Habitat and Natural History

The eastern prairie fringed orchid is listed as federally threatened by the USFWS and is listed as state endangered in Lake County by the IDNR. Remnant populations are scattered throughout the Midwest, primarily in Wisconsin, Illinois, Michigan, and Ohio. The orchid has declined more than 70 percent

from original county records in the United States; within Illinois it was historically known to occur in 33 counties across the northern two thirds of the state.

The eastern prairie fringed orchid is a long-lived perennial herbaceous plant that grows from an underground tuber and spends the early stages of its life cycle underground or as an elusive vegetative plant. Growing to a height of 8 to 40 inches, the plant has an upright leafy stem with a showy inflorescence. Leaves are lance-shaped, three to eight inches long and sheath the stem. Each individual plant has one flower spike composed of 5 to 40 creamy white flowers. Each flower has a three-part fringed lip less than one inch long and a nectar spur about one to two inches long. Flowering begins in late June to early July and lasts for 7 to 10 days. White blossoms rise just above the height of surrounding grasses and sedges. The more exposed flower clusters are more likely to be visited by pollinators but are also at greater risk of being eaten by deer. Seed capsules mature through the growing season and are dispersed by wind from late August through September.

The orchid occurs in a variety of habitats, ranging from mesic prairie to wetlands, such as sedge meadows, marsh edges, and bogs, primarily north of the Wisconsinan glacial boundary. It requires full sun for optimum growth and flowering and a grassy habitat with little or no woody encroachment. The orchid appears to be adapted to natural patch disturbances, or areas with dynamic disturbance regimes. The plant is pollinated only by hawkmoths (*Sphingidae*). Seedling development relies on a symbiotic relationship with soil fungi, called mycorrhizae, to assimilate nutrients in the soil, as well as maintenance of graminoid habitat.

Threats to this species include habitat loss, fire suppression and woody vegetation encroachment, impacts to pollinator populations, competition from non-native plant species, and over collection.

Methodology

The USFWS requires that surveys for eastern prairie fringed orchid be conducted between June 28 and July 11 on three non-consecutive days. The eastern prairie fringed orchid is a perennial herb that grows from underground tuber and requires full sun for optimum growth and flowering and a grassy habitat with little to no woody encroachment (USFWS 1999, USFWS 2005). The orchid occurs in a variety of habitats, including mesic prairie to wetlands, such as sedge meadows, marsh edges and bogs.

CMT biologists conducted meander surveys to determine the presence/absence of the orchid. Surveys were conducted on July 6, July 8, and July 13, 2020 for a total of 27.5 person hours over all five wetlands across the three survey dates. CMT coordination with Ms. Cathy Pollack of the USFWS to confirm the selected survey dates were appropriate. Ms. Pollack notified CMT that the orchid appeared to be blooming late this season and that our selected survey dates were sufficient. Due to forecasted thunderstorms, the final survey date was moved from July 10 to July 13, 2020, with the approval of Ms. Pollack.

Two surveyors stood at least six feet apart and conducted a walking meandering sweep of the area. The canopy of the vegetation was moved aside to identify any blooming plants that may have been covered by surrounding vegetation. Within the surveyed wetlands, there were areas of unsuitable habitat, exhibited by monocultures of invasive species including narrow-leaved cattail (*Typha angustifolia*), reed

550 N Commons Drive Suite 116 Aurora, Illinois 60504 PHONE 630.820.1022 FAX 630.820.0350 cmtengr.com Engineers and Consultants

canary grass (*Phalaris arundinacea*) and common buckthorn (*Rhamnus cathartica*), thick shrub or forested canopy, and low species diversity that did not meet the FQA requirements or contain the associate species of the orchid. Surveyors limited their time in the unsuitable habitat areas, focusing their survey effort in areas that exhibited suitable habitat for the orchid and where the orchid was most likely to be present.

Wetland location maps presented in the *Ecological Resource Report – Replacement Runway 5/23 Waukegan National Airport CMT Project #: 18226-02* (CMT, January 2020) and the *Wetland Determination Report – Waukegan National Airport, Lake County, Illinois IDOT Seq. #: 19504* (Illinois Natural History Survey, December 2015) were utilized as a guide for conducting the survey. The area identified as potential orchid habitat (Wetlands 1, 3, 4, 6 and K) are depicted on the attached resource mapping.

Survey Results

The temperature range on the dates of the survey was approximately 70°F to 87°F. July 6 and July 13 survey days were sunny; July 8 survey day had light rain until approximately 10am, followed by partly cloudy and humid conditions. Weather conditions did not hinder the investigation. Orchids were not encountered within the project limits of the survey (Wetlands 1, 3, 4, 6 and K). Other threatened or endangered plants species were not observed during the investigation.

Habitat types within the investigation area include sedge meadows, wet meadows, marsh wetlands, and shrub and forested wetlands. A cursory search of the investigation area was conducted on the first survey day. The following summarizes the habitat conditions of the five surveyed wetlands.

Wetland 1

Wetland 1 is associated with the riparian fringe habitat of the unnamed tributary that flows south through the project area and through the Waukegan Savanna Forest Preserve at the southwestern end of the project area, from Townline Road to south of York House Road. Dominant vegetation within Wetland 1 includes reed canary grass (*Phalaris arundinacea*) and narrow-leaved cattail (*Typha angustifolia*). The native FQI and native mean C-value for Wetland 1 within and immediately adjacent to the project area are 19.9 and 3.7, respectively, indicating high floristic quality with native character.

The majority of Wetland 1 consists of dense stands of narrow-leaved cattail and reed canary grass and areas of high shade cover. Therefore, these areas within Wetland 1 were found to be poor habitat and were only investigated during the first survey day. Small areas of Wetland 1 located along the right bank (facing downstream) of the stream south of York House Road consists of an open wet meadow and open herbaceous cover. The dominant vegetation within this portion of the wetland includes common's beggars tick (*Bidens frondosa*), common tussock sedge (*Carex stricta*), southern blue flag (*Iris virginica var. shrevei*), and rice cutgrass (*Leersia oryzoides*).

The wet meadow within Wetland 1 was determined to be the best potential habitat for the orchid and was investigated more intensely using meander surveys during each site visit. Areas immediately adjacent to this area were also investigated during each survey.

Wetland 3

Wetland 3 is associated with the wetland complex that is located in the Waukegan Savana Forest Preserve north of York House Road and west of the unnamed tributary at the southwestern end of the project area. Wetland 3 is adjacent west of the Lake County Forest Preserve District property. Dominant vegetation within Wetland 3 includes reed canary grass and narrow-leaved cattail. The native FQI and native mean C-value for Wetland 1 within and immediately adjacent to the project area are 17.2 and 4.3, respectively, indicating high floristic quality with native character.

The majority of Wetland 3 consists of marsh habitat with dense stands of cattails and forested wetland. Therefore, these areas within Wetland 3 were found to be poor habitat and were only investigated during the first survey day. Small areas of Wetland 3 located along the south and north edges of the cattail marsh consists of an open wet meadow and open herbaceous cover. The dominant vegetation within this portion of the wetland includes common tussock sedge, river bulrush (*Scirpus fluviatillis*), prairie cord grass (*Spartina pectinata*), and southern blue flag.

The wet meadow within Wetland 3 was determined to be the best potential habitat for the orchid and was investigated more intensely using meander surveys during each survey. Areas immediately adjacent to this area were also investigated during each site visit.

Wetland 4

Wetland 4 is associated with the wetland complex that is located in the Waukegan Savana Forest Preserve north of York House Road and west and east of the unnamed tributary at the southwestern end of the project area. Dominant vegetation within Wetland 4 includes common buckthorn (*Rhamnus cathartica*), narrow-leaved cattail, and reed canary grass. The native FQI and native mean C-value for Wetland 4 within and immediately adjacent to the project area are 25.7 and 4.4, respectively, indicating high floristic quality with native character.

The majority of Wetland 4 consists of wet shrubland habitat with dense stands of common buckthorn, gray dogwood (*Cornus racemosa*), narrow-leaved cattail and to a lesser extent reed canary grass. Therefore, these areas within Wetland 4 were found to be poor habitat and were only investigated during the first survey day. Small areas of Wetland 4 located in the southeast portion of the wetland east of the unnamed tributary and scattered throughout the central portion of the wetland west of the unnamed tributary consists of an open sedge/wet meadow and open herbaceous cover. The dominant vegetation within this portion of the wetland includes common tussock sedge, blue joint grass (*Calamagrostis canadensis*), marsh smartweed (*Persicaria amphibia var. stipulacea*), swamp milkweed (*Asclepias incarnata*), and foxglove beardtongue (*Penstemon digitalis*).

The sedge/wet meadow within Wetland 4 was determined to be the best potential habitat for the orchid and was investigated more intensely using meander surveys during each survey. Areas immediately adjacent to this area were also investigated during each site visit.

Wetland 6

Wetland 6 is associated with the wetland complex that is located in the Waukegan Savana Forest Preserve north of York House Road and east of the unnamed tributary at the southwestern end of the

project area. Dominant vegetation within Wetland 6 includes blue joint grass, wooly sedge (*Carex pellita*), and common yellow lake sedge (*Carex utriculata*). The native FQI and native mean C-value for Wetland 6 within and immediately adjacent to the project area are 27.3 and 4.9, respectively, indicating high floristic quality with native character.

The majority of Wetland 6 consists of open sedge meadow habitat with some small areas of shrub wetland. The dominant vegetation within the sedge meadow portion of the wetland includes common yellow lake sedge, red-rooted spike rush (*Eleocharis erythropoda*), and common bur reed (*Sparganium eurycarpum*).

The sedge meadow within Wetland 6 was determined to be the best potential habitat for the orchid and was investigated more intensely using meander surveys during each survey. Areas immediately adjacent to this area were also investigated during each site visit.

Wetland K

Wetland K is associated with an undeveloped area in the northeastern potion of UGN, south of West Wadsworth Road. Dominant vegetation within Wetland K includes grass-leaved goldenrod (*Euthamia graminifolia*), Torrey's rush (*Juncus torreyi*), dark green bulrush (*Scirpus atrovirens*), and reed canary grass. The native FQI and native mean C-value for Wetland K within and immediately adjacent to the project area are 11.7 and 3.7, respectively, indicating high floristic quality with native character.

The majority of Wetland K consists of open wet meadow habitat. The dominant vegetation within the wet meadow portion of the wetland includes grass-leaved goldenrod and brown fox sedge (*Carex vulpinoidea*). The entire area of Wetland K was determined to have potential habitat for the orchid and was investigated intensely using meander surveys during each survey. Areas immediately adjacent to this area were also investigated during each field visit.

Summary

CMT conducted meander surveys within Wetlands 1, 3, 4, 6 and K within and immediately adjacent to the project area on three non-consecutive days during the bloom period of the eastern prairie fringed orchid. Survey results indicate that the orchid does not occur within the project area. No state or federally listed species were encountered.

We look forward to your review of this survey report and guidance on any additional actions that are necessary for project compliance with the Endangered Species Act. Please contact Craig Louden at 630-907-7050 or via email at clouden@cmtengr.com or Alexandra Zelles at 630-907-7072 or via email at azelles@cmtengr.com if you have any questions or concerns.

Sincerely,

Crawford, Murphy & Tilly, Inc.

Alexandra Zelles, M.S.
Environmental Scientist
Certified Ecologist

Craig Louden, P.E.
Project Manager

References

Bowles, M., LW. Zettler, T.J. Bell and P. Kelsey. 2005. Relationships between soil characteristics, distribution and restoration potential of the federal threatened eastern prairie fringed orchid, *Platanthera leucophaea* (Nutt.) Lindl. *Am. Midl. Nat.*, 154(2): 273-285.

Crawford, Murphy and Tilly, Inc. 2020. Ecological Resource Report – Replacement Runway 5/23 Waukegan National Airport, Waukegan, Lake County, Illinois. CMT Project #: 18226-02.

Gleason, H.A. and A. Cronquist. 1922. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. Van Nostrand, Princeton, New Jersey, 2nd Edition.

Holmgren, Noel H. 1998. The Illustrated Companion to Gleason and Cronquist's Manual: Illustrations of the vascular plants of northeastern United States and adjacent Canada. The New York Botanical Garden, Bronx, New York.

Illinois Natural History Survey. 2015. Wetland Determination Report – Waukegan National Airport, Waukegan, Lake County, Illinois. Illinois IDOT Seq. #: 19504.

Knobel, Edward. 1977. Field Guide to the Grasses, Sedges and Rushes of the United States. Dover Publications, Inc. New York.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X

Mohlenbrock, R.H., ed. 1975. Guide to the Vascular Flora of Illinois. Southern Illinois University Press, Carbondale.

Newcomb, Lawrence. 1977. Newcomb's Wildflower Guide. Little, Brown and Company, Boston, New York, Toronto, London.

U.S. Fish and Wildlife Service. 1999. Eastern Prairie Fringed Orchid (*Platanthera leucophaea*) Recovery Plan. Fort Snelling, Minnesota. 62pp.

U.S. Fish and Wildlife Service. 2005. Threatened and endangered species: eastern prairie fringed orchid (*Platanthera leucophaea*) fact sheet. Chicago Illinois Field Office, Barrington. 2pp.

Wilhelm, G. and L. Rerich. 2017. Flora of the Chicago Region. A Floristic and Ecological Synthesis. Indiana Academy of Science, Indianapolis. 1392 pp.

Young, Dick. 1994. Kane County Wild Plants and Natural Areas. Kane County Forest Preserve District. Geneva, Illinois.

You'll need to address this comment below for the Waukegan project. Until then, the ESR addendum for the bio/wetlands approval is on hold.

From: Hamer, Vincent <Vincent.Hamer@illinois.gov>
Sent: Wednesday, July 1, 2020 10:59 AM
To: Borus, Richard A <Richard.Borus@illinois.gov>
Cc: Mlacnik, Alan D <Alan.Mlacnik@illinois.gov>
Subject: RE: ESR Seq19504A Addendum - (D1 Aero) - Lake Co

Hello Rick,

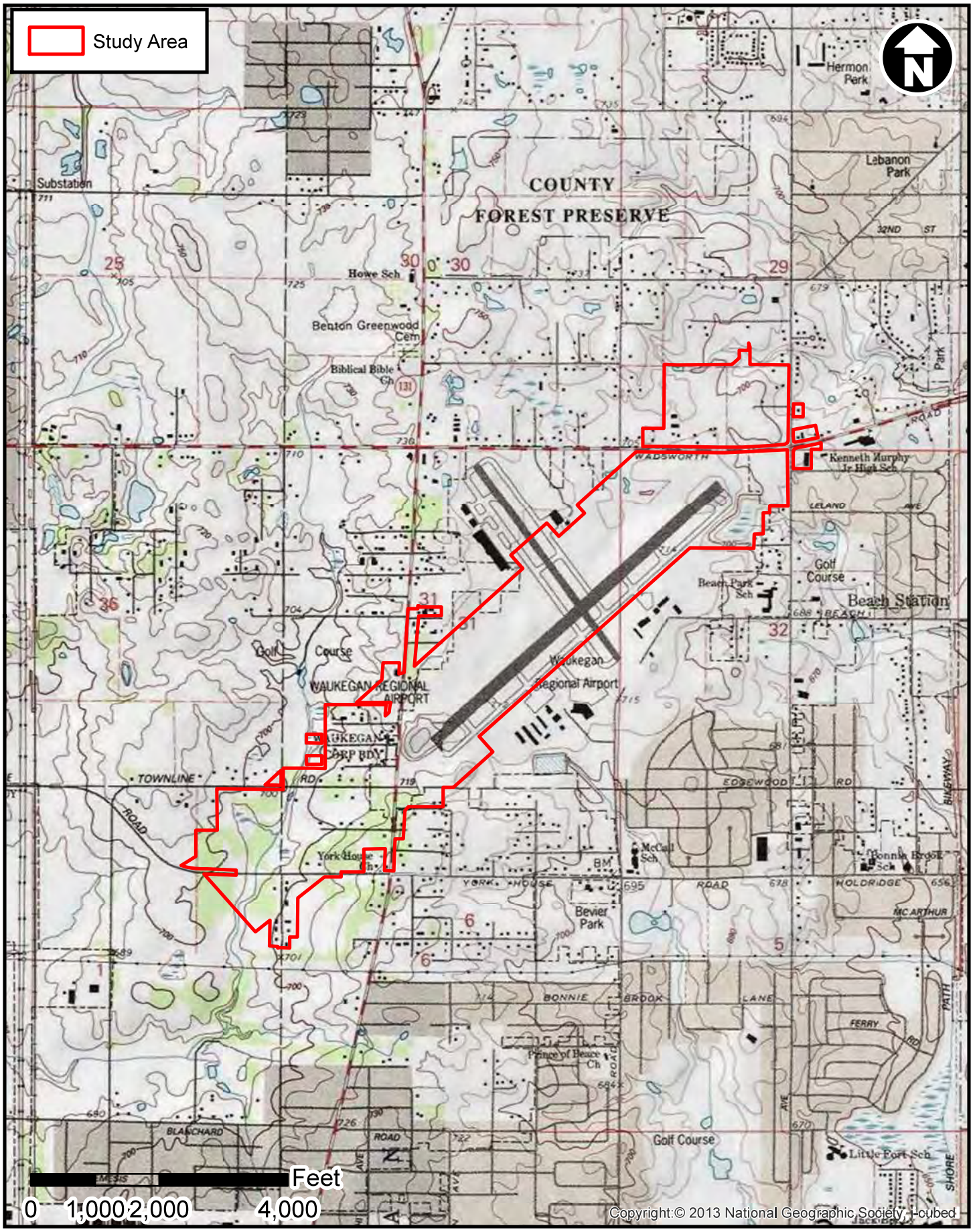
I am reviewing this addendum submittal and noticed that the wetland survey that was submitted did not include a Eastern Prairie Fringed Orchid survey for the qualified sites due do the uncertainty of the impacts of the construction. The USFWS Barrington office will not concur with an effect determination until that has been decided and the EPFO survey has been completed. A previous EPFO survey had been completed in 2017 under the original submittal but that report is not valid. That being said the project sponsor should either provide information that there will be no work performed in the EPFO areas or they will need to project an impact and survey those areas as it will be required per USFWS. It is suggested that all the qualified wetland areas be surveyed.

Should you have any questions please let me know.

Thanks!

Vince

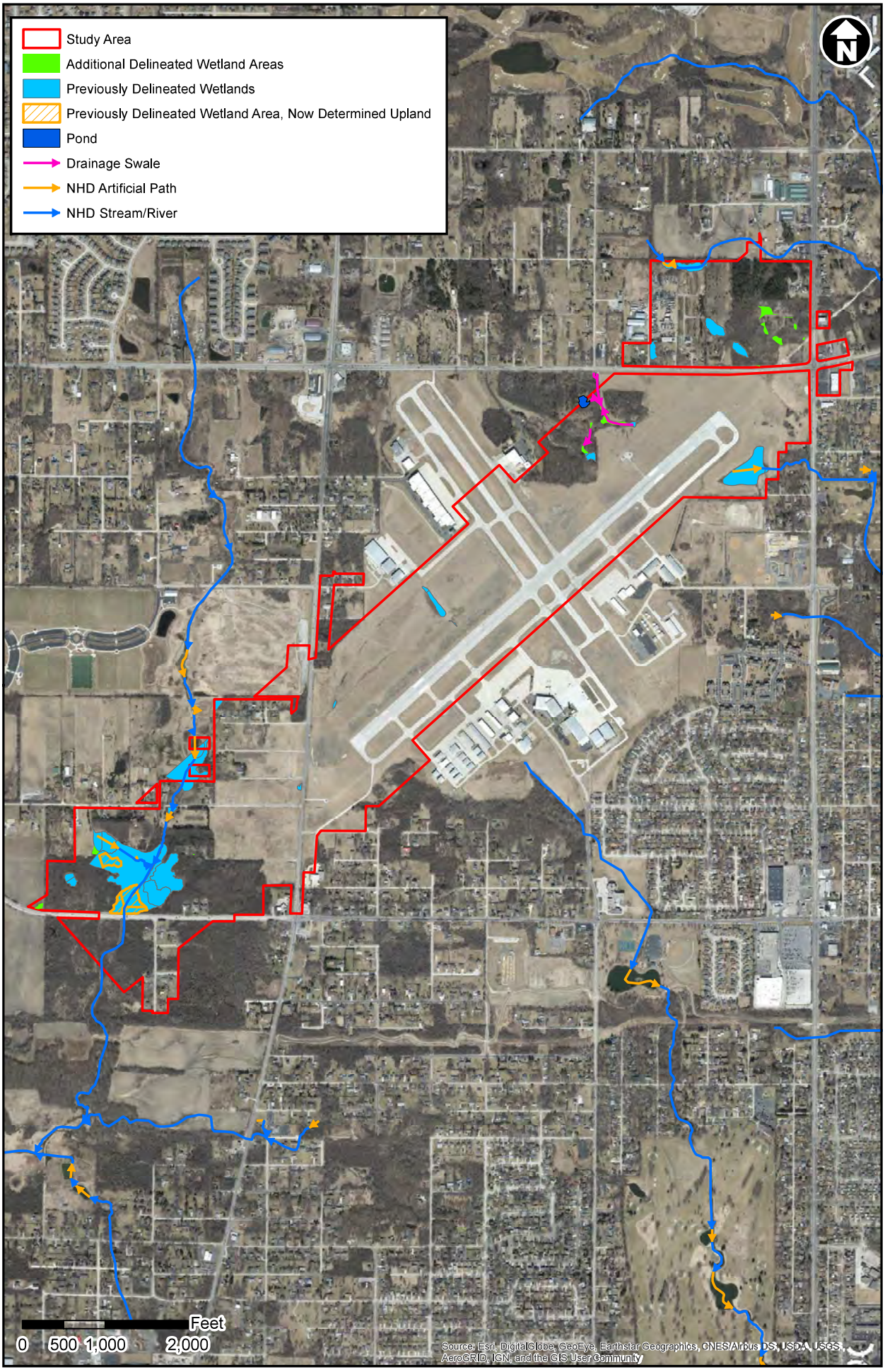
State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all attachments. Receipt by an unintended recipient does not waive attorney-client privilege, attorney work product privilege, or any other exemption from disclosure.



Replacement Runway 5/23 - Waukegan National Airport,
Waukegan, Lake Co., IL

USGS Topographic Map- Zion, IL Quadrangle

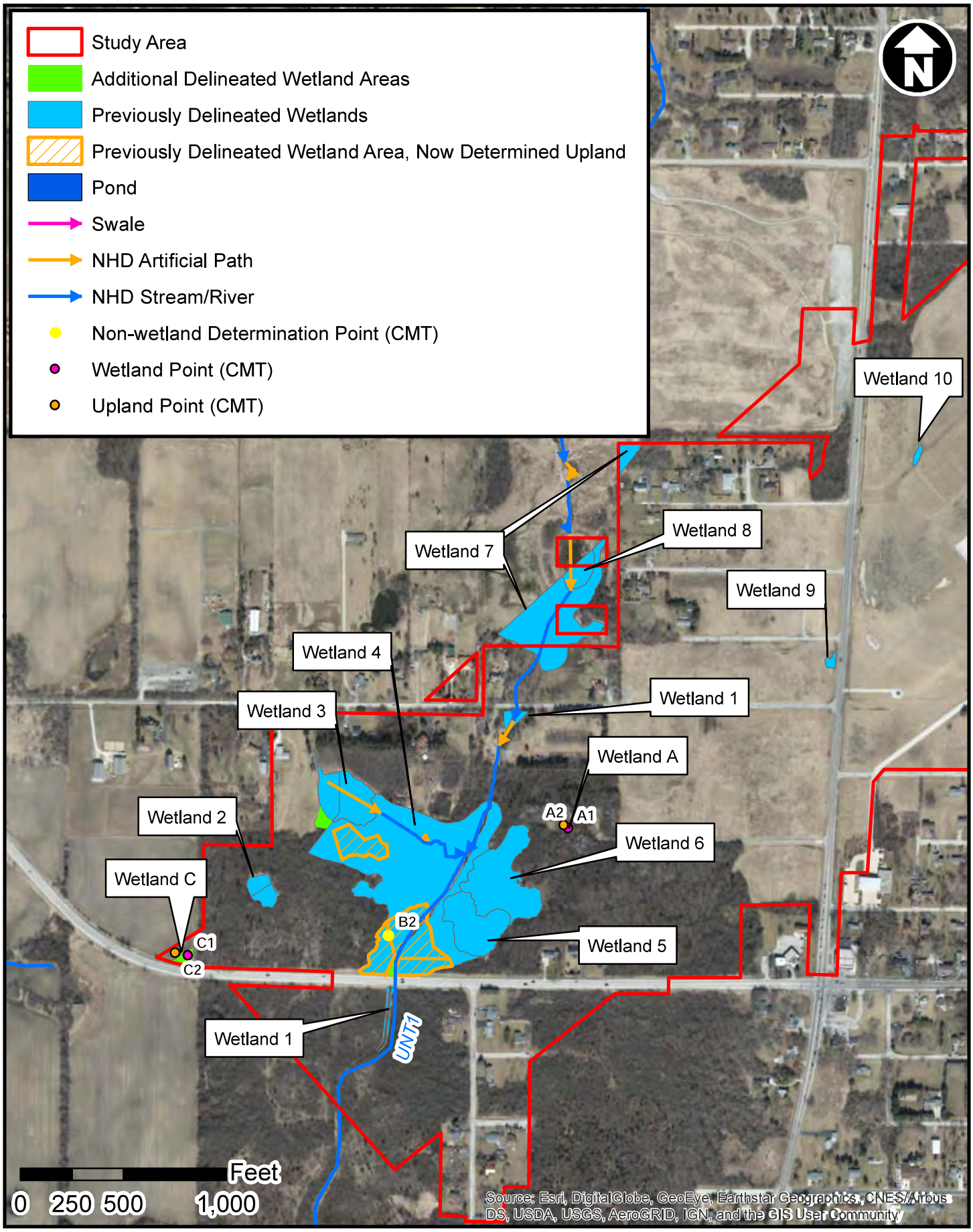
CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Wetland Delineation Map

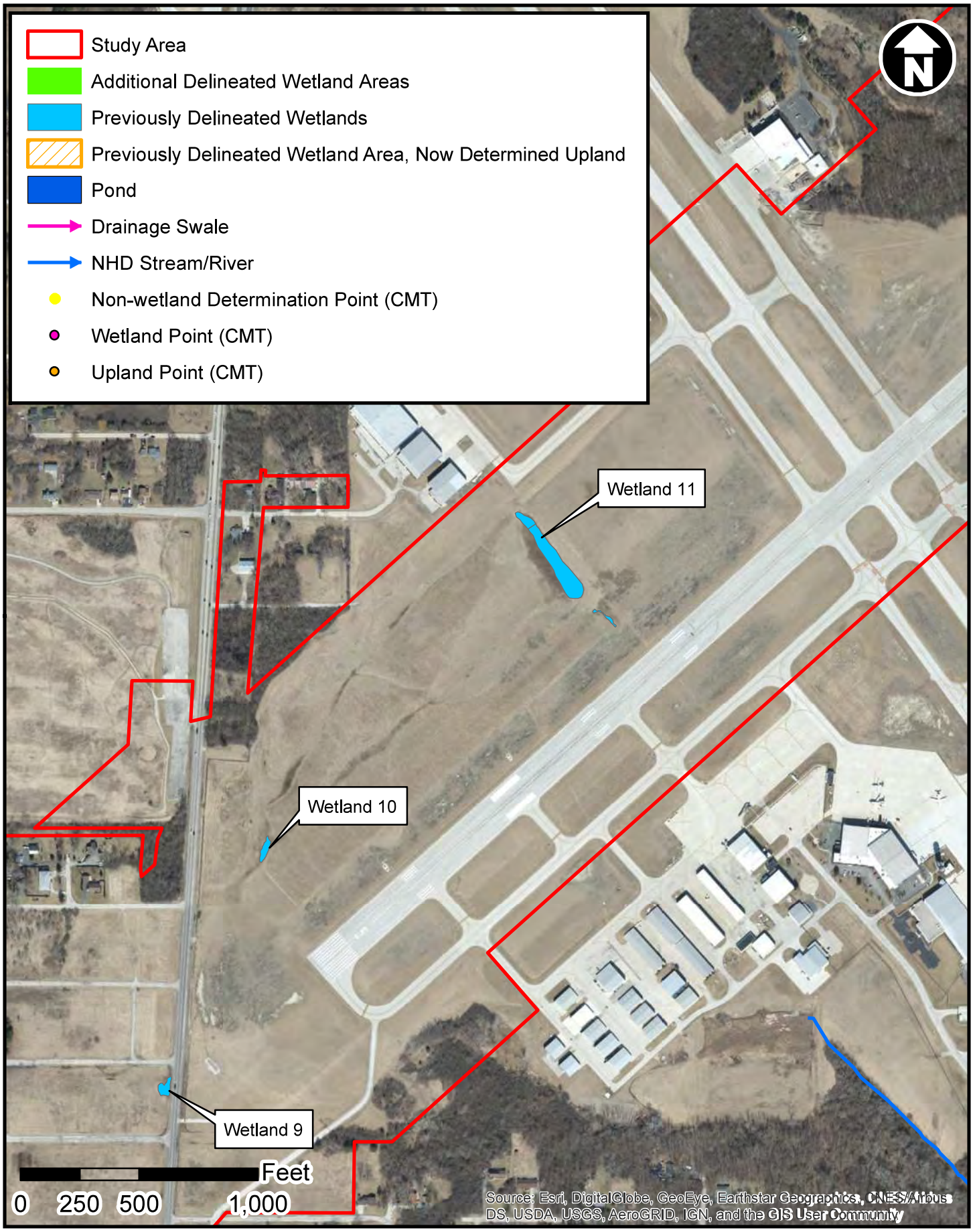
CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Wetland Delineation Map- Southwest (1 of 3)

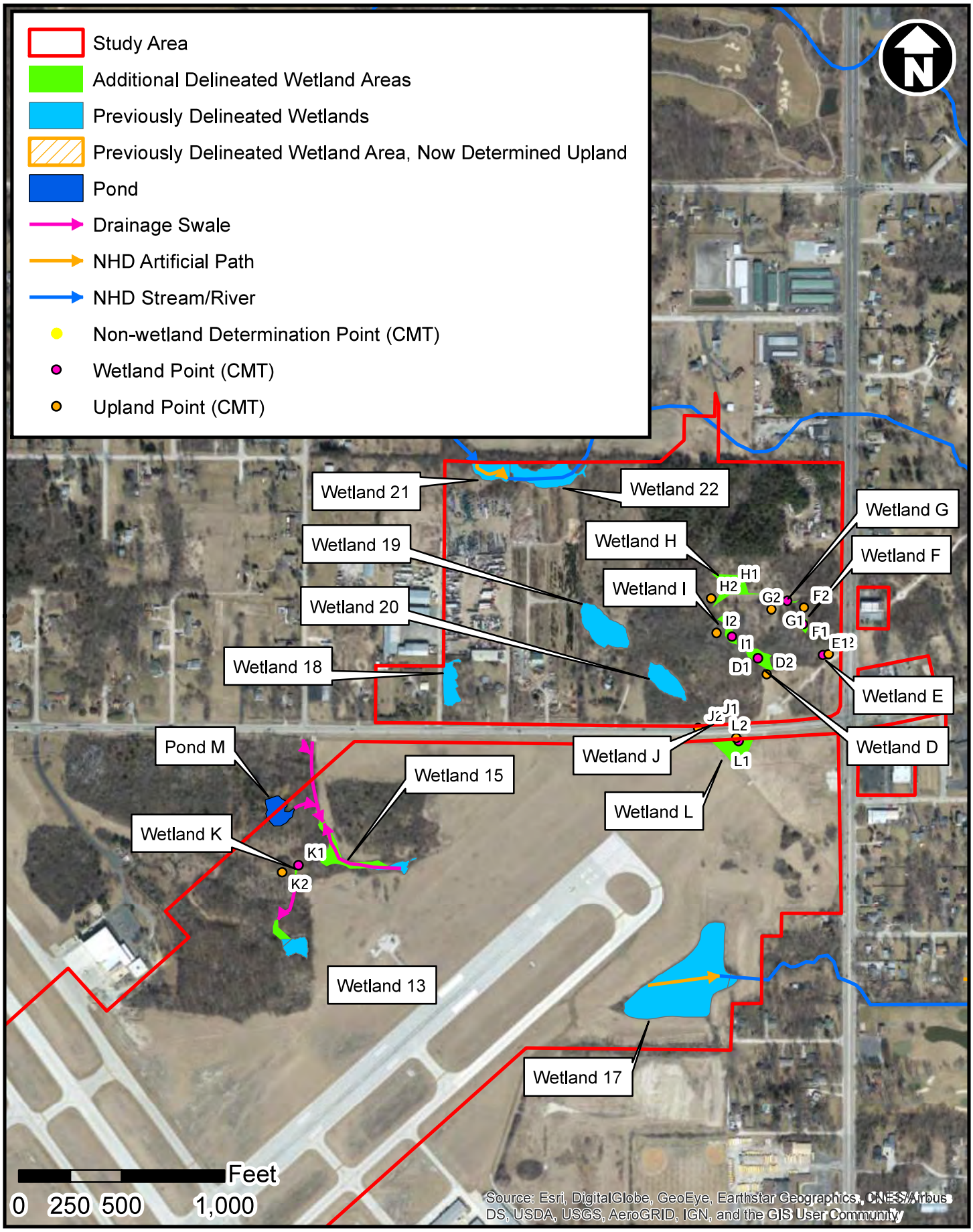
CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Wetland Delineation Map- Central (2 of 3)

CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Wetland Delineation Map- Northeast (3 of 3)

CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Eastern Prairie Fringed Orchid Survey Map (1 of 2)

CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Eastern Prairie Fringed Orchid Survey Map (2 of 2)

CMT
Crawford, Murphy & Tilly

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, CORPS OF ENGINEERS
231 SOUTH LA SALLE STREET
CHICAGO, ILLINOIS 60604-1437

REPLY TO
ATTENTION OF:

November 6, 2020

Operations Division
Regulatory Branch
LRC-2020-00937

SUBJECT: Jurisdictional Determination for the Waukegan Airport Located at 2601 West Plane Rest Drive in Waukegan, Lake County, Illinois (Latitude 42.416604, Longitude -87.869796)

Skip Goss
Waukegan National Airport
2601 West Plane Rest Drive
Waukegan, Illinois 60087

Dear Mr. Goss:

This is in response to your request that the U.S. Army Corps of Engineers complete a jurisdictional determination for the above-referenced site submitted on your behalf by CMT, Inc. The subject project has been assigned number LRC-2020-00937. Please reference this number in all future correspondence concerning this project.

Following a review of the information you submitted, this office has determined that the subject property contains "waters of the United States".

Wetlands 1, 3, 4, 5, 6, 7, 8, 15, 21 & 22, and UNT 1 & 2 have been determined to be under the jurisdiction of this office and therefore, subject to Federal regulation.

Wetlands 2, 9, 10, 11, 13, 17, 18, 19, 20, A, B, C, D, E, F, G, H, I, J, K, L, N, O, P, Q, R, S & T, and Pond M have been determined to be excluded water features, and therefore not subject to Federal regulation. Please be informed that this office does not concur with the boundaries of waters not under the jurisdiction of this office.

This office concurs with the submitted wetland delineation and wetland boundaries at the subject site. In the event an application is submitted for work within jurisdictional areas, a survey of the wetland boundary(s) stamped by a professional surveyor shall accompany the approved wetland delineation.

For a detailed description of our determination please refer to the enclosed decision document. This determination covers only your project as depicted in the Ecological Resource Report dated January 2, 2020 (updated October 29, 2020), prepared by CMT, Inc.

This determination is valid for a period of five (5) years from the date of the letter, unless new information warrants revision of the determination before the expiration date or a District Commander has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.

This letter is considered an approved jurisdictional determination for your subject site. If you object to this determination, you may appeal, according to 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and a Request for Appeal (RFA) form. If you request to appeal the above determination, you must submit a completed RFA form to the Great Lakes/Ohio River Division Office at the following address:

Jacob Siegrist
Regulatory Appeals Review Officer
US Army Corps of Engineers
Great Lakes and Ohio River Division
550 Main Street, Room 10-714
Cincinnati, Ohio 45202-3222
Phone: (513) 684-2699 Fax: (513) 684-2460

In order to be accepted, your RFA must be complete, meet the criteria for appeal and be received by the Division Office within sixty (60) days of the date of the NAP. If you concur with the determination in this letter, submittal of the RFA form to the Division office is not necessary.

This determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

It is your responsibility to obtain any required state, county, or local approvals for impacts to wetland areas not under the Department of the Army jurisdiction. For projects in unincorporated areas of Lake County, please contact Lake County Planning, Building and Development at (847) 377-2600. For projects in incorporated areas of Lake County, please contact the Lake County Stormwater Management Commission at (847) 377-7700.

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers regulates the discharge of dredged or fill material into waters of the United States, including wetlands. A Department of the Army permit is required for any proposed work involving the discharge of dredged or fill material within the jurisdiction of this office. To initiate the permit process, please submit a joint permit application form along with detailed plans of the proposed work. Information concerning our program, including the application form and an application checklist, can be found at and downloaded from our website:
http://www.lrc.usace.army.mil/Missions/Regulatory.aspx

If you have any questions, please contact Mr. Michael J. Machalek of my staff by telephone at (312) 846-5534 or email at Mike.J.Machalek@usace.army.mil.

Sincerely,

CHERNICH.KATHLEEN.G.1230365616
Digitally signed by CHERNICH.KATHLEEN.G.1230365616
Date: 2020.11.06 23:34:07 -06'00'

Kathleen G. Chernich
Chief, East Section
Regulatory Branch

Enclosures

Copy Furnished w/out Enclosures

Lake County Stormwater Management Commission (Kurt Woolford)
Lake County Planning, Building and Development Department (Eric Steffen)
CMT, Inc. (Alexandra Zelles)

U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 06-NOV-2020
ORM Number: LRC-2020-00937
Associated JDs: N/A
Review Area Location[1]:
State/Territory: IL City: Waukegan County/Parish/Borough: Lake County
Center Coordinates of Review Area: Latitude 42.416604 Longitude -87.869796

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- ☐ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A or describe rationale.
- ☐ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in section II.B).
- ☒ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in section II.C).
- ☒ There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)[2]

§ 10 Name	§ 10 Size	§ 10 Criteria	Rationale for § 10 Determination
N/A	N/A	N/A	N/A

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters)[3]

(a)(1) Name	(a)(1) Size	(a)(1) Criteria	Rationale for (a)(1) Determination
N/A	N/A	N/A	N/A

Tributaries ((a)(2) waters):

(a)(2) Name	(a)(2) Size	(a)(2) Criteria	Rationale for (a)(2) Determination
UNT 1		(a)(2) Perennial tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year	UNT 1 is a mapped blue line stream on the USGS Maps.
UNT 2	N/A	(a)(2) Intermittent tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year	UNT 2 is an intermittent to perennial tributary of Bull Creek, and was flowing strong at the time of our visit, so it at a minimum an intermittent tributary.
Wetland 1	N/A	(a)(2) Perennial tributary contributes surface water flow directly or indirectly to an (a)(1) water in a	Wetland 1 is a perennial tributary of the Des Plaines River, and mapped as a blue line stream on the USGS maps.

[1] Map(s)/Figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where independent upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD form.
[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps Districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.
[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

		typical year	

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):

(a)(3) Name	(a)(3) Size	(a)(3) Criteria	Rationale for (a)(3) Determination
N/A	N/A	N/A	N/A

Adjacent wetlands ((a)(4) waters):

(a)(4) Name	(a)(4) Size	(a)(4) Criteria	Rationale for (a)(4) Determination
Wetland 15	N/A	(a)(4) Wetland abuts an (a)(1)-(a)(3) water	Wetland 15 abuts the historic tributary to Bull Creek.
Wetland 21	N/A	(a)(4) Wetland abuts an (a)(1)-(a)(3) water	Wetland 21 is bisected by the far north mapped tributary that had flow during our visit.
Wetland 22	N/A	(a)(4) Wetland abuts an (a)(1)-(a)(3) water	Wetland 22 is bisected by the far north mapped tributary that had flow during our visit.
Wetland 3	N/A	(a)(4) Wetland abuts an (a)(1)-(a)(3) water	Wetland 3 directly abuts the perennial tributary.
Wetland 4	N/A	(a)(4) Wetland abuts an (a)(1)-(a)(3) water	Wetland 4 directly abuts the perennial tributary.
Wetland 5	N/A	(a)(4) Wetland abuts an (a)(1)-(a)(3) water	Wetland 5 directly abuts the perennial tributary
Wetland 6	N/A	(a)(4) Wetland abuts an (a)(1)-(a)(3) water	Wetland 6 directly abuts the perennial tributary
Wetland 7	N/A	(a)(4) Wetland abuts an (a)(1)-(a)(3) water	Wetland 7 directly abuts the perennial tributary
Wetland 8	N/A	(a)(4) Wetland abuts an (a)(1)-(a)(3) water	Wetland 8 directly abuts the perennial tributary

D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12))[4]:

Exclusion Name	Exclusion Size	Exclusion[5]	Rationale for Exclusion Determination
Pond M	N/A	(b)(1) Non-adjacent wetland	Pond M is a closed depression.
Wetland 10	N/A	(b)(1) Non-adjacent wetland	Wetland 10 is a small closed depression.
Wetland 11	N/A	(b)(1) Non-adjacent wetland	Wetland 11 is a closed depressional feature.
Wetland 13	N/A	(b)(1) Non-adjacent wetland	Wetland 13 is a small closed depression.
Wetland 17	N/A	(b)(10) Stormwater control feature constructed or excavated in upland or in a non-jurisdictional water to convey, treat, infiltrate, or store stormwater runoff	Wetland 17 is a constructed stormwater basin for the airport construction.
Wetland 18	N/A	(b)(1) Non-adjacent wetland	Wetland 18 is a closed depression.
Wetland 19	N/A	(b)(1) Non-adjacent wetland	Wetland 19 is a closed depression.
Wetland 2	N/A	(b)(1) Non-adjacent wetland	Wetland 2 is a closed depression.
Wetland 20	N/A	(b)(1) Non-adjacent wetland	Wetland 28 is a closed depression.
Wetland 9	N/A	(b)(1) Non-adjacent wetland	Wetland 9 is a closed depression.
Wetland A	N/A	(b)(1) Non-adjacent wetland	Wetland A is a closed depression.
Wetland C	N/A	(b)(1) Non-adjacent wetland	Wetland C is a closed depression.
Wetland D	N/A	(b)(1) Non-adjacent wetland	Wetland D is a closed depression.

[1] Map(s)/Figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where independent upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD form.
[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps Districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.
[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

Wetland E	N/A	(b)(1) Non-adjacent wetland	Wetland E is a closed depression.
Wetland F	N/A	(b)(1) Non-adjacent wetland	Wetland F is a closed depression.
Wetland G	N/A	(b)(1) Non-adjacent wetland	Wetland G is a closed depression.
Wetland H	N/A	(b)(1) Non-adjacent wetland	Wetland H is a closed depression.
Wetland I	N/A	(b)(1) Non-adjacent wetland	Wetland I is a closed depression.
Wetland J	N/A	(b)(1) Non-adjacent wetland	Wetland J is a closed depression.
Wetland K	N/A	(b)(1) Non-adjacent wetland	Wetland K is a closed depression.
Wetland L	N/A	(b)(1) Non-adjacent wetland	Wetland L is a closed depression.
Wetland N	N/A	(b)(1) Non-adjacent wetland	Wetland N is a closed depression.
Wetland O	N/A	(b)(1) Non-adjacent wetland	Wetland O is a closed depression.
Wetland P	N/A	(b)(1) Non-adjacent wetland	Wetland P is a closed depression.
Wetland Q	N/A	(b)(1) Non-adjacent wetland	Wetland Q is a closed depression.
Wetland R	N/A	(b)(1) Non-adjacent wetland	Wetland R is a closed depression.
Wetland S	N/A	(b)(1) Non-adjacent wetland	Wetland S is a closed depression.
Wetland T	N/A	(b)(1) Non-adjacent wetland	Wetland T is a closed depression.

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

_X_ Information submitted by, or on behalf of, the applicant/consultant: *Ecological Resource Report dated January 3, 2020 (updated October 29, 2020), prepared by CMT, Inc.*
This information is sufficient for purposes of this AJD.
Rationale: *N/A.*

___ Data sheets prepared by the Corps: *Title(s) and/or date(s).*

_X_ Photographs: Historical Aerials to 1939.

_X_ Corps Site visit(s) conducted on: *October 22, 2020.*

___ Previous Jurisdictional Determinations (AJDs or PJDs): *ORM Number(s) and date(s).*

___ Antecedent Precipitation Tool: *provide detailed discussion in Section III.B.*

___ USDA NRCS Soil Survey: *Title(s) and/or date(s).*

___ USFWS NWI maps: *Title(s) and/or date(s).*

___ USGS topographic maps: *Title(s) and/or date(s).*

Other data sources used to aid in this determination:

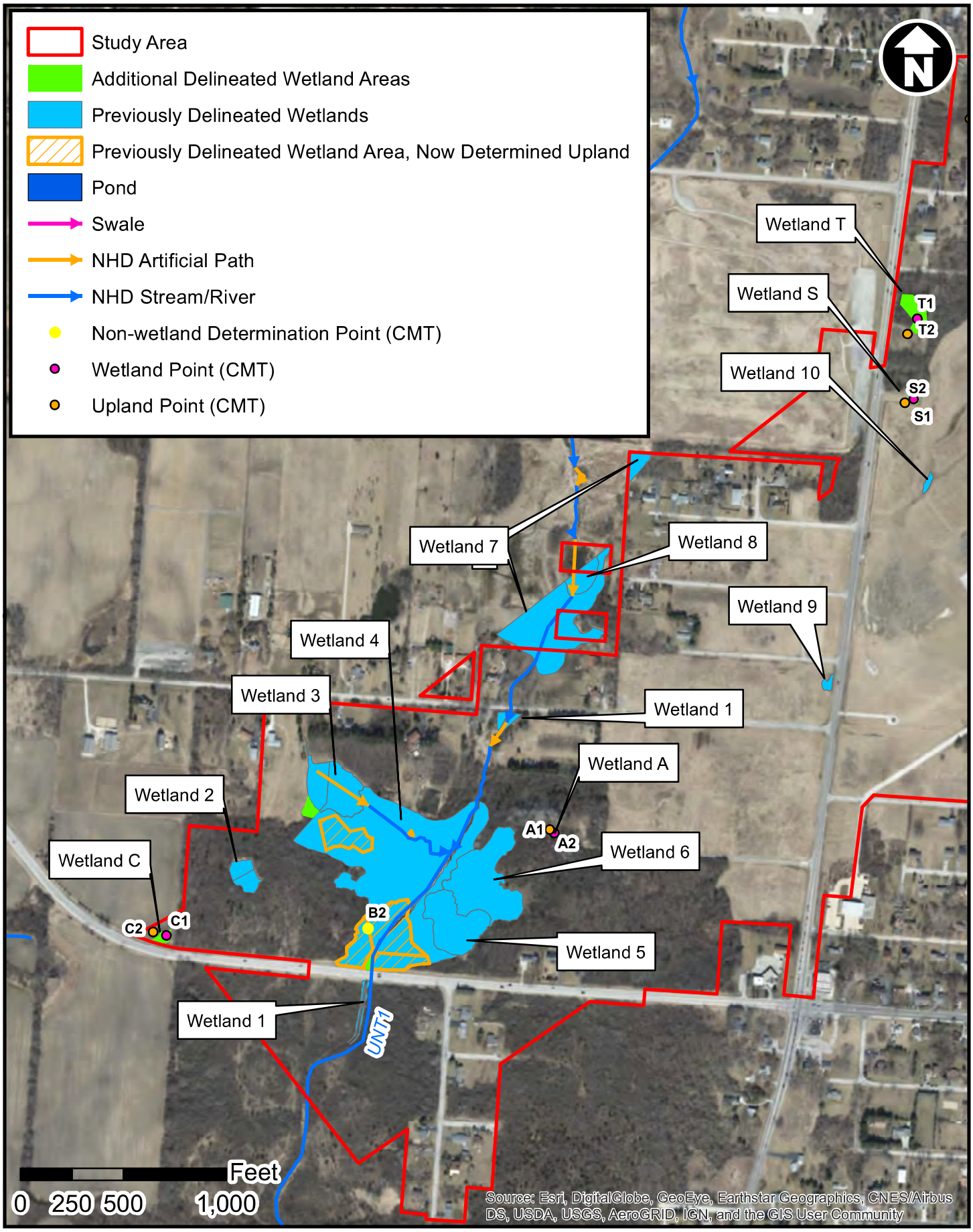
Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	N/A.
Other Sources	N/A.

B. Typical year assessment(s): N/A; all tributaries had strong flow during site visit.

[1] Map(s)/Figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where independent upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD form.
[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps Districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.
[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

C. Additional comments to support AJD: Walked site with CMT staff to look at several key areas for several hours.

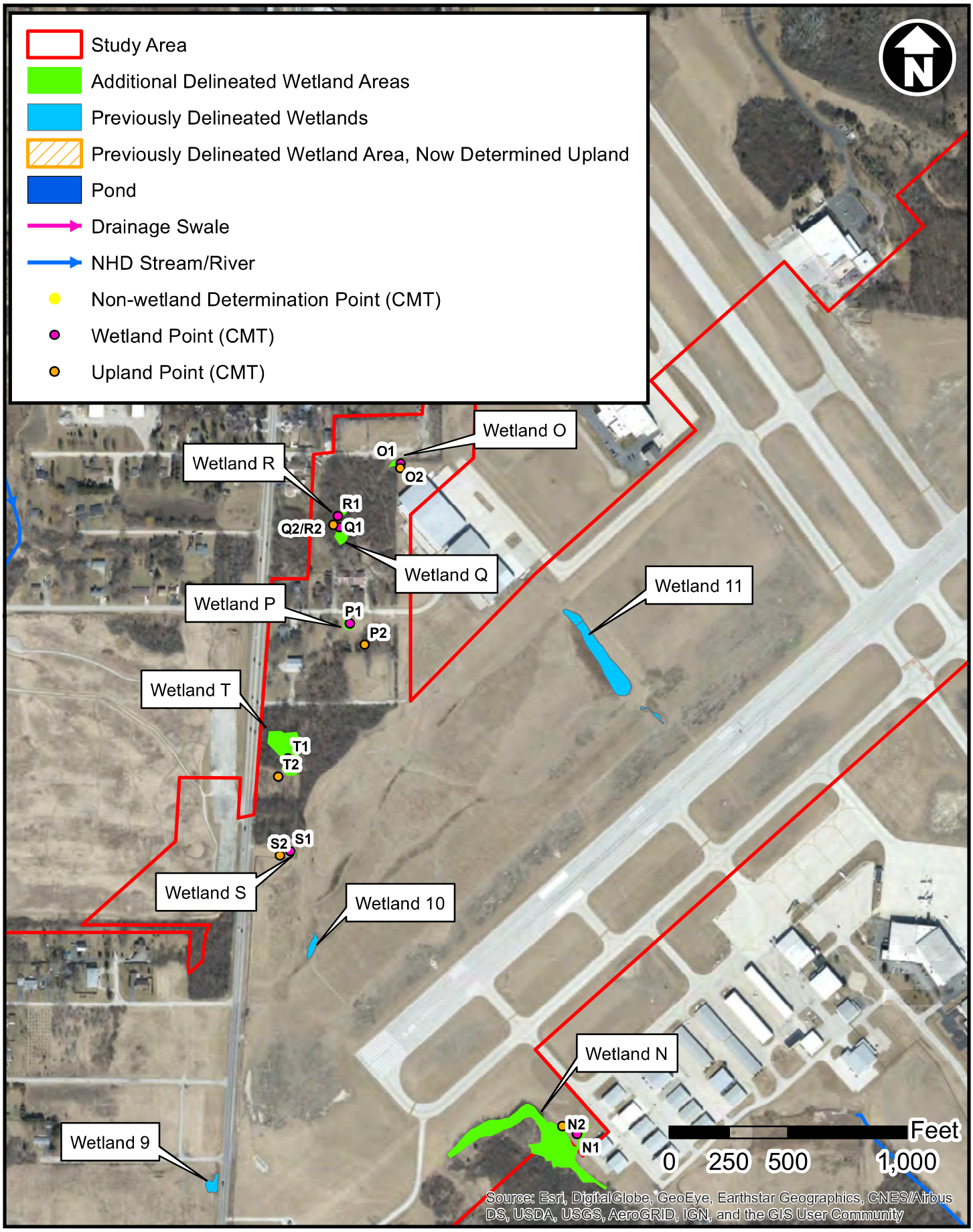
[1] Map(s)/Figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where independent upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD form.
[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps Districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.
[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Wetland Delineation Map- Southwest (1 of 3)

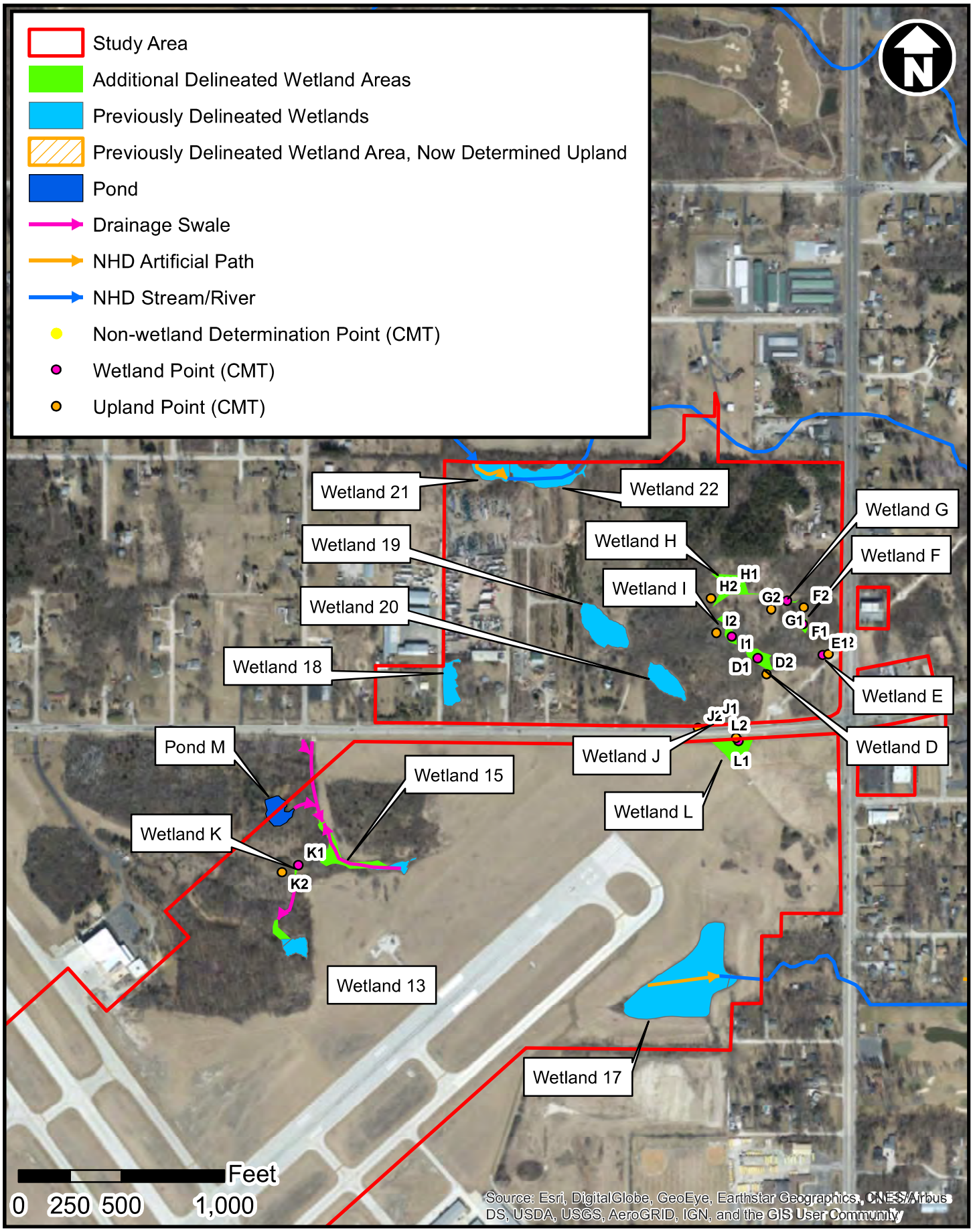
CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Wetland Delineation Map- Central (2 of 3)

CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

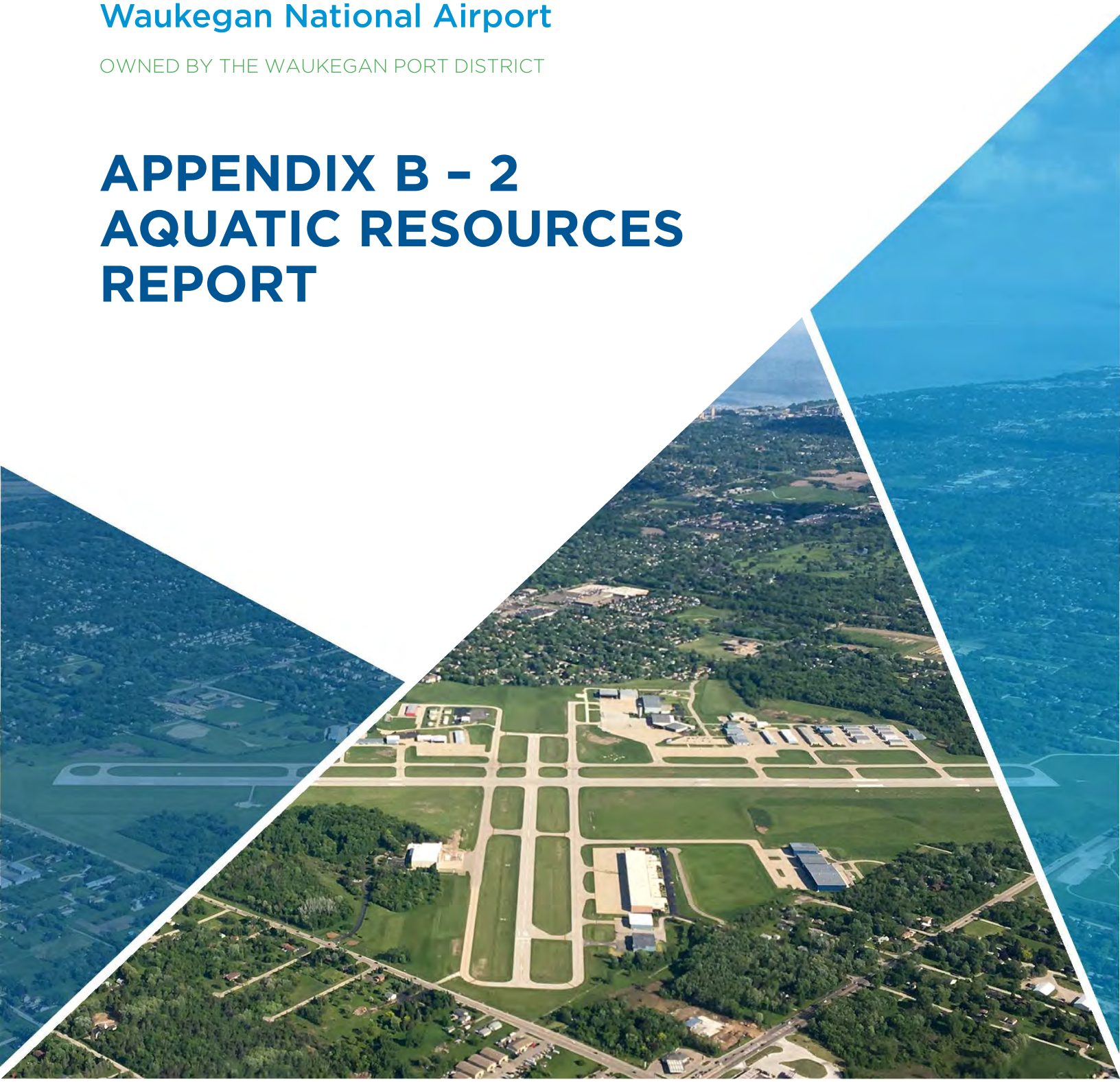
Wetland Delineation Map- Northeast (3 of 3)

CMT
Crawford, Murphy & Tilly

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX B – 2
AQUATIC RESOURCES REPORT



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

Aquatic Resources Report

Waukegan National Airport Replace Runway 5/23
Environmental Assessment (EA) Phase 3

CMT Job Number: 24006707

OCTOBER 16, 2025

REVISED FEBRUARY 2, 2026

PREPARED BY:
CRAWFORD, MURPHY & TILLY, INC.
550 N COMMONS DRIVE, SUITE 116
AURORA, IL 60504

PREPARED FOR:
WAUKEGAN PORT DISTRICT
WAUKEGAN NATIONAL AIRPORT
2601 PLANE REST DRIVE
WAUKEGAN, IL 60087

TABLE OF CONTENTS

1.0 Summary 1
2.0 Methodology 4
2.1 Streams 4
2.2 Wetlands 4
2.4 Other Aquatic Resources 7
2.6 Ecological Resource Location 7
3.0 Background Information 7
3.1 Project Description 7
3.2 Project Location 7
3.3 Historical or Published Information 10
4.0 Results 11
4.1 Streams 11
4.2 Wetlands 12
4.4 Other Aquatic Resources 24
5.0 Conclusions 24
5.0 References 26

APPENDICES

Appendix A Project Mapping
A-1 Location & Secondary Resource Maps
A-2 Aquatic Resource Maps
A-3 Previous Reports Aquatic Resource Maps
Appendix B Data Forms and Tables
B-1 Stream Forms
B-2 Wetland Delineation Forms
B-3 Floristic Quality Analyses
B-4 Wetlands with no Site Access: Prior Delineation Forms and Floristic Quality Analyses
Appendix C Site Photographs
Appendix D Lake County Jurisdictional Documentation

1.0 SUMMARY

This report has been prepared at the request of the Waukegan Port District. The purpose of this report is to describe the ecological resources located within the project area for the Waukegan National Airport (UGN) Replace Runway 5/23 project in Waukegan, Lake County, Illinois. The second revision, dated February 2, 2026, contains minor corrections to terminology and formatting.

The Clean Water Act defines wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils." Thus, in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Midwest Regional Supplement, for an area to be considered a wetland, it must meet all of the following criteria, under normal circumstances: wetland hydrology, a dominance of hydrophytic vegetation, and hydric soils.

Aquatic resources surveys were conducted in 2024 on June 18-19, July 16-18, September 11-12, and in 2025 on June 18-20 and September 22 and 24. As summarized in the table below, one (1) stream, thirty-five (35) wetlands, one (1) pond, and thirteen (13) drainage swales were identified within the project area. These aquatic resources are subject to regulation under the Clean Water Act and impacts to jurisdictional resources would require 404 authorization from the US Army Corps of Engineers (USACE), including a 401 water quality certification from the Illinois Environmental Protection Agency.

Table 1. Aquatic Resources

RESOURCE	TYPE	EXISTING CONDITION [1]	PRELIMINARY FEDERAL JURISDICTIONAL STATUS [2]	PRELIMINARY LAKE COUNTY JURISDICTIONAL STATUS [3]	LOCATION
Wetlands					
Wetland A	Emergent Wetland	Severely degraded	Not jurisdictional	IWLC	West of N Green Bay Rd
Wetland D	Scrub-shrub Wetland	Moderately degraded	Not jurisdictional	Exempt	North of Wadsworth Rd
Wetland E	Scrub-shrub Wetland	Moderately degraded	Not jurisdictional	Exempt	North of Wadsworth Rd
Wetland F	Scrub-shrub Wetland	High quality	Not jurisdictional	Exempt	North of Wadsworth Rd
Wetland G	Emergent & Forested Wetland	Degraded	Not jurisdictional	IWLC	North of Wadsworth Rd
Wetland H	Emergent Wetland	Moderately degraded	Not jurisdictional	IWLC	North of Wadsworth Rd
Wetland I	Scrub-shrub Wetland	High quality	Not jurisdictional	Exempt	North of Wadsworth Rd
Wetland J	Emergent Wetland	Moderately degraded	Not jurisdictional	IWLC	North of Wadsworth Rd
Wetland L	Emergent Wetland	Degraded	Not jurisdictional	IWLC	Between 5/23 Runway and Wadsworth Rd
Wetland S	Emergent Wetland	Degraded	Not jurisdictional	IWLC	Near south airfield, between 5/23 Runway and N Green Bay Rd
Wetland T	Forested Wetland	Degraded	Not jurisdictional	IWLC	Near south airfield, between 5/23 Runway and N Green Bay Rd
Wetland X	Emergent Drainage & Pond	High quality	Not jurisdictional	IWLC	Between 5/23 Runway and Wadsworth Rd
Wetland Y	Emergent Wetland	High quality	Not jurisdictional	IWLC	Between 5/23 Runway and Wadsworth Rd
Wetland Z	Emergent Wetland	Moderately degraded	Not jurisdictional	Exempt	North of Wadsworth Rd
Wetland AA	Emergent Wetland	Moderately degraded	Not jurisdictional	Exempt	North of Wadsworth Rd
Wetland AC	Emergent Wetland	Moderately degraded	Not jurisdictional	IWLC	North of Wadsworth Rd
Wetland AF	Emergent Wetland	Moderately degraded	Not jurisdictional	IWLC	Between 5/23 Runway and Wadsworth Rd
Wetland AG	Scrub-shrub Wetland	Moderately degraded	Not jurisdictional	IWLC	Between 5/23 Runway and Wadsworth Rd
Wetland AH	Scrub-shrub Wetland	Moderately degraded	Not jurisdictional	IWLC	Between 5/23 Runway and Wadsworth Rd
Wetland AI	Emergent & Forested Wetland	Moderately degraded	Federally Jurisdictional	Federally Jurisdictional	West of N Green Bay Rd
Wetland AK	Emergent Wetland	Moderately degraded	Not jurisdictional	IWLC	South of W York House Rd
Wetland AL	Emergent Wetland	Severely degraded	Not jurisdictional	IWLC	Between 5/23 Runway and Wadsworth Rd
Wetland 3	Emergent & Forested Wetland	Moderately degraded	Federally Jurisdictional	Federally Jurisdictional	West of N Green Bay Rd
Wetland 4	Emergent Wetland	Moderately degraded	Federally Jurisdictional	Federally Jurisdictional	West of N Green Bay Rd

RESOURCE	TYPE	EXISTING CONDITION [1]	PRELIMINARY FEDERAL JURISDICTIONAL STATUS [2]	PRELIMINARY LAKE COUNTY JURISDICTIONAL STATUS [3]	LOCATION
Wetland 5	Emergent & Forested Wetland	High quality	Federally Jurisdictional	Federally Jurisdictional	West of N Green Bay Rd
Wetland 6	Emergent Wetland	High quality	Federally Jurisdictional	Federally Jurisdictional	West of N Green Bay Rd
Wetland 7	Emergent Wetland	Moderately degraded[4]	Federally Jurisdictional	Federally Jurisdictional	West of N Green Bay Rd
Wetland 8	Ponded Wetland	Moderately degraded[4]	Federally Jurisdictional	Federally Jurisdictional	West of N Green Bay Rd
Wetland 9	Emergent Wetland	Severely degraded	Federally Jurisdictional	IWLC	West of N Green Bay Rd
Wetland 10	Emergent Wetland	Degraded	Not jurisdictional	IWLC	South airfield, between 5/23 Runway and N Green Bay Rd
Wetland 11	Emergent Wetland	Degraded	Not jurisdictional	IWLC	South airfield, between 5/23 Runway and N Green Bay Rd
Wetland 15	Emergent & Scrub-shrub Wetland	Moderately degraded	Not jurisdictional	IWLC	Between 5/23 Runway and Wadsworth Rd
Wetland 18	Forested Wetland	Degraded[4]	Not jurisdictional	IWLC	North of Wadsworth Rd
Wetland 19	Scrub-shrub Wetland	Moderately degraded[4]	Not jurisdictional	IWLC	North of Wadsworth Rd
Wetland 20	Emergent Wetland	Degraded	Not jurisdictional	IWLC	North of Wadsworth Rd
Streams					
UNT 1 to Des Plaines River	Intermittent Stream	Good quality	Federally Jurisdictional	Federally Jurisdictional	West of N Green Bay Rd
Other Surface Features					
Pond M	Freshwater Pond	NA	Not jurisdictional	IWLC	Between 5/23 Runway and Wadsworth Rd
Drainages 1-13	Drainage Swale	NA	Not jurisdictional	IWLC	Throughout Project Area

[1] Based on IL Stream Mitigation Guidance (for streams) or FQI scores (for wetlands).
[2] Based on the 2023 revised definition of "Waters of the United States" (USEPA 40 CFR 120.2(a) and USACE 33 CFR 328.3(a))
[3] See Appendix D for documentation of Lake County confirmed excluded Isolated Waters of Lake County.
[4] No site access for Wetlands 7, 8, 18, and 19. Quality score refers to CMT 2020 data.

2.0 METHODOLOGY

2.1 STREAMS

An on-site evaluation of the project area was conducted during site visits on June 20, 2025, and September 24, 2025, and referenced previous stream assessment data from an Illinois Natural History Survey (INHS) Wetland Determination Report (December 2015) and an Ecological Resource Report by Crawford, Murphy, & Tilly (January 3, 2020, updated October 8, 2020). Streams were evaluated for their jurisdictional status based on the revised definition of waters of the United States (40 CFR 120.2(a)), which requires the presence of an ordinary high water mark (OHWM) and the stream to be a relatively permanent, standing or continuously flowing body of water with an ultimate connection to downstream Section 10 Traditional Navigable Waters (TNW). Ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

The following USACE definitions for the three stream types were used:

> **Ephemeral streams** have flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow. Ephemeral streams are non-relatively permanent waters (NRPW).
>
> **Intermittent streams** have flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow. Intermittent streams are seasonal relatively permanent waters (SRPW).
>
> **Perennial Streams** have flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow. Perennial streams are relatively permanent waters (RPW).

The determination of stream designation is based on an evaluation of the size of the watershed for each stream, the presence of flow during the on-site evaluation and the evidence observed of the frequency of flow, and the presence of aquatic life. In addition to flow regime, streams were also classified according to existing conditions and rated either fully functional, moderately functional, or functionally impaired, based on the definitions in the Illinois Stream Mitigation Guidance.

2.2 WETLANDS

Site visits to evaluate for the presence of ecological resources were completed in June 18-19, 2024, July 16-18, September 11-12, 2024, and June 18-20 and September 24 & 26, 2025, and referenced previous wetland delineation data from an INHS Wetland Determination Report

(December 2015) and an Ecological Resource Report by Crawford, Murphy, & Tilly (January 3, 2020, updated October 8, 2020). Site access was not available for four (4) wetlands identified in previous reports; field assessment will be necessary for these sites before any construction activity can occur in those areas.

Site visits were conducted under the supervision of either Heather Lacey (2024) or Alexandra Zelles (2024 and 2025). Heather is a Certified Ecologist with over twenty years of experience conducting ecological investigations including wetland delineations and qualitative assessments of terrestrial and aquatic systems throughout the Midwest. She is certified by Lake County (Illinois) as a Certified Wetland Specialist (CWS) and holds a BS and a MS degree in Biological Sciences from Wright State University. Alex is a Senior Certified Ecologist with over ten years of experience conducting ecological investigations including wetland delineations and qualitative assessments of terrestrial and aquatic systems throughout the Midwest. Alex is certified by Lake County (Illinois) as a CWS and holds a BS degree in Environmental Studies from Northland College and a MS in Biology from Wright State University.

Wetland delineations in 2024 were conducted by Alexandra Zelles, Marion Wells, Christine Gurley, Dani Clooney, and Alex Tadda on June 18-19, July 16-18, and September 11-12, 2024, under the supervision of Heather Lacey, a Lake County CWS. Alexandra Zelles has been certified as a CWS since January 2025. Delineations took into consideration that vegetation and hydrology of some of these areas had been recently disturbed, and followed guidance for delineation of problematic areas provided in the Midwest Regional Supplement.

Wetland delineations in 2025 were conducted by Alexandra Zelles (CWS), Christine Gurley, Dani Clooney, and Stephanie Spence on June 18-20, 2025, and Alexandra Zelles and Christine Gurley on September 24 and 26, 2025.

CMT personnel used the routine method presented in the 1987 Corps of Engineers Wetlands Delineation Manual and the Midwest Regional Supplement. In order for an area to be classified as a jurisdictional wetland, the area has to have a dominance of hydrophytic vegetation, hydric soils, and wetland hydrology and be an adjacent wetland as defined by the 2023 definition of waters of the United States (40 CFR 120.2(a)). The specific indicators used for each of the three parameters are noted in the following paragraphs.

2.2.1 HYDROPHYTIC VEGETATION

According to Tiner (2012), a hydrophyte is a vascular plant that grows in water or on a substrate that is saturated at a frequency and duration during the growing period sufficient to affect plant occurrence. The U.S. Fish and Wildlife Service National Wetland Plant List categorizes species according to their probability of occurrence in wetlands based on the ecological region. The list identifies five general plant indicator status categories:

- Obligate (OBL): almost always is a hydrophyte, rarely in uplands.
- Facultative Wetland (FACW): Usually is a hydrophyte but occasionally found in uplands.
- Facultative (FAC): Commonly occurs as either a hydrophyte or non-hydrophyte.
- Facultative Upland (FACU): Occasionally is a hydrophyte but usually occurs in uplands.
- Obligate Upland (UPL): Rarely is a hydrophyte, almost always in uplands.

The method used during this survey for determining vegetation dominance was the 50/20 method. Using this method, plant species in each stratum are ranked according to their percent aerial cover and then cumulatively summed until 50 percent of the total dominance measure is exceeded. All species contributing to that cumulative total plus any additional species that have at least 20 percent of the total dominance measure are considered dominant in their respective stratum. To satisfy the hydrophytic vegetation criteria required for a jurisdictional wetland, the area must be dominated (over 50 percent) by obligate wetland plants, facultative wetland plants and facultative plants.

2.2.2 HYDRIC SOIL

Hydric soil is soil formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile. The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Hydric soil indicators include the presence of histosols, histic epipedons, reducing conditions, gleyed or low chroma soil colors and high organic content or organic streaking in sandy soil. The mapped soil type appearing on the local or national hydric soils list can also indicate the potential presence of hydric soil.

2.2.3 WETLAND HYDROLOGY

Wetland hydrology is defined as inundation or saturation at or near the surface for at least five percent of the growing season in most years. This can include areas that are ponded, flooded or those areas that have a water table at or near the surface. Indications of wetland hydrology can include surface water, saturation, evidence of drift deposits, drainage patterns, water-stained leaves, and oxidized root channels within 12 inches below ground surface on living plants, among others. Characteristics such as geomorphic position, dominance of hydrophytes and saturation or inundation visible on an aerial photograph can also indicate the presence of hydrology when two or more of these characteristics are present. A full list of primary and secondary wetland hydrology indicators is located on routine wetland delineation data sheets.

2.2.5 WETLAND QUALITATIVE ASSESSMENT

The wetland plant community was evaluated using the Floristic Quality Index (FQI). The FQI was determined for each wetland based on the *Flora of the Chicago Region: A Floristic and Ecological Synthesis* (2017).

The FQI is an index derived from floristic inventory data and is calculated from the number of species that occur in the plant community, as well as the species coefficient of conservatism (C) values. C-values are assigned to individual plant species. The higher the C-value is, the more likely a plant is from a minimally altered landscape. Low C-values are assigned to weeds, or species that can exist in a wide range of conditions. An area of high natural quality would include conservative native plants that are adapted to a specialized community context and would have a mean C-value of 5 or greater. The aggregate conservatism of all the plants inhabiting a site is used to determine its FQI.

The general classifications of the vegetative communities are made based on the FQI scores.

FQI	CLASSIFICATION
0-5	severely degraded
5-10	degraded
10-20	moderately degraded
20 +	high quality

2.4 OTHER AQUATIC RESOURCES

Other surface water resources include features such as lakes, ponds, drainage swales, and ditches. Determination of other surface water resources was based on the presence of an ordinary high-water mark (OHWM), flow regime, and/or on their jurisdictional status.

2.6 ECOLOGICAL RESOURCE LOCATION

The boundaries of ecological resources identified during the on-site investigation were surveyed using a handheld GPS device with sub-meter accuracy.

3.0 BACKGROUND INFORMATION

3.1 PROJECT DESCRIPTION

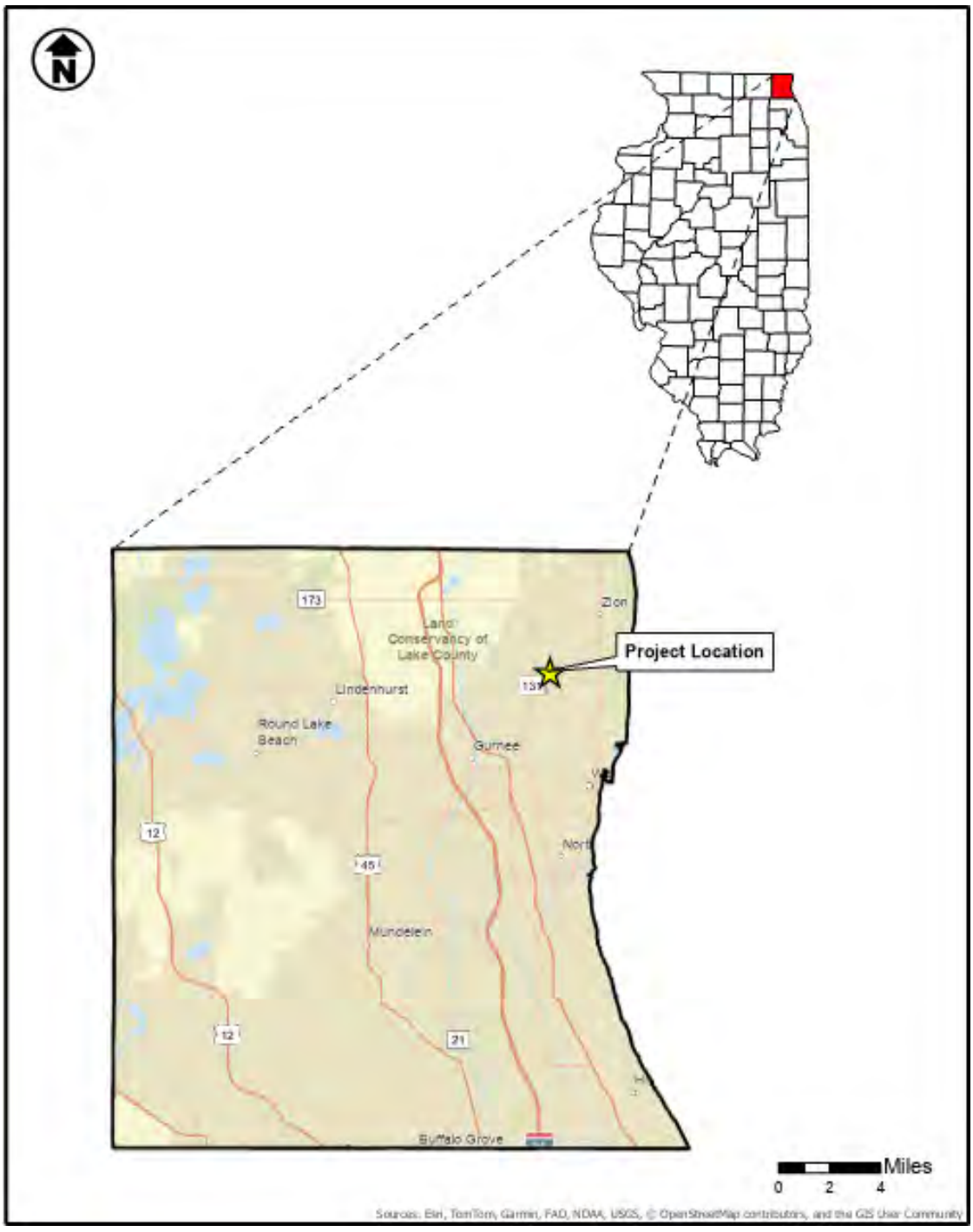
The Waukegan Port District is planning to construct a new replacement Runway 5/23 of 6,000 feet long and 150 feet wide. The replacement runway would be 400 feet from centerline-to-centerline northwest of the existing Runway 5/23. The Environmental Assessment project area covers the area for this potential project and associated staging areas, and the extent of obstruction tree trimming and removal associated with the planned approach area for the replacement runway.

Since issuance of the previous Ecological Resource Report by Crawford, Murphy, & Tilly (January 3, 2020, updated October 8, 2020), the project limits were changed significantly. This report provides an update to both INHS (2015) and CMT (2020) reports reflective of the current project area.

3.2 PROJECT LOCATION

The proposed project is located within the City of Waukegan in Lake County, Illinois. Per the USGS Wadsworth, IL, and Zion, IL Quadrangle Maps, the project is situated within Sections 31 and 32 of Township 46N, Range 12E; Section 6 of Township 45N, Range 12E; and Section 1 of Township 45N, Range 11E. The project area for this investigation includes the airport property and adjacent property that may be part of the 5/23 runway replacement, runway obstruction tree

FIGURE 1. LAKE COUNTY LOCATION MAP

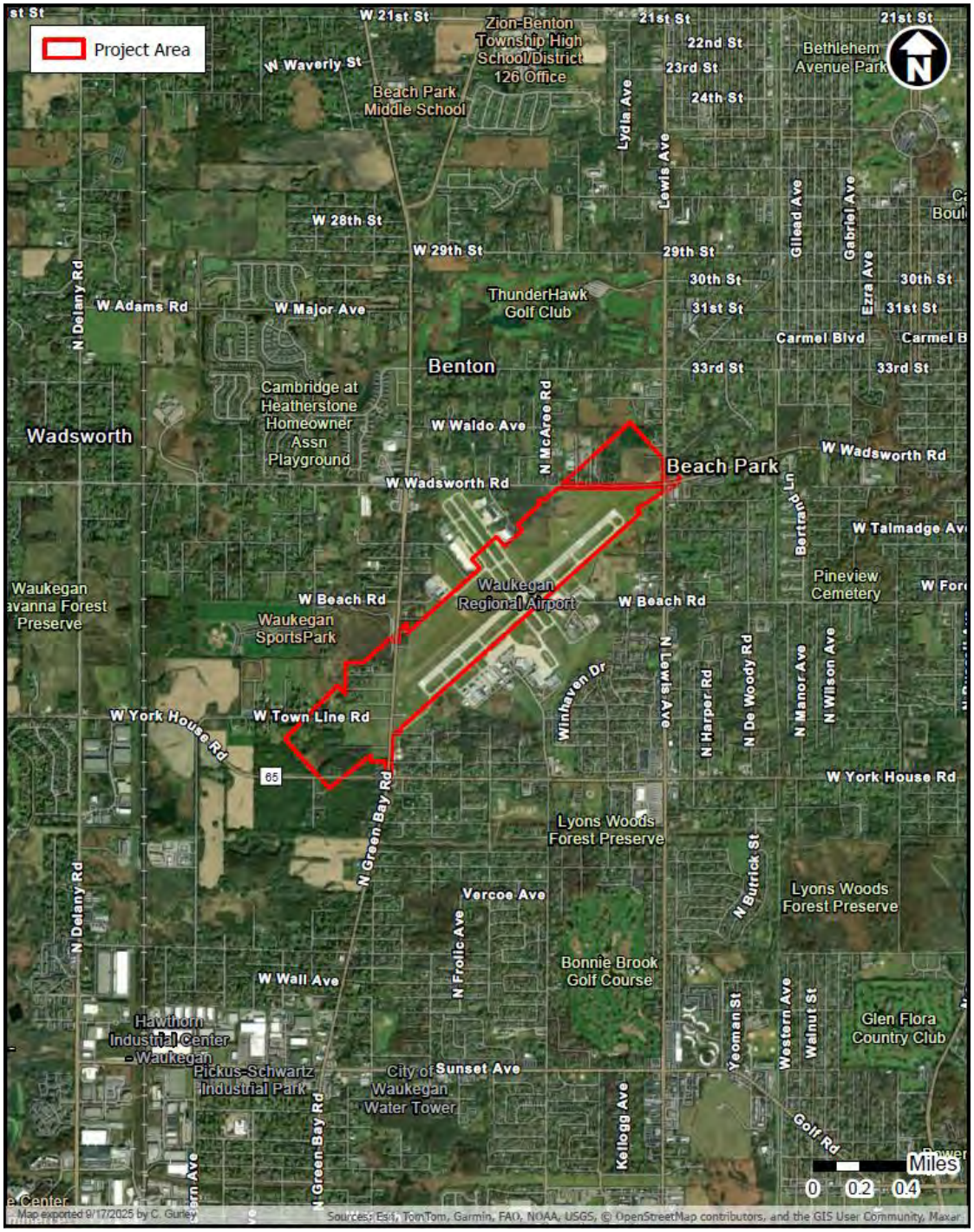


removal and trimming, proposed construction staging and access areas, and the associated safety, operational and infrastructure improvements needed to meet the established purpose and need. The project general location is shown in Figure 1 and the project area boundaries are shown in Figure 2 below.

The project area is primarily covered in airfield pavement, mowed turf grass, existing taxiways, and hangar complexes. This area has been disturbed by development of the airport, which has

been in operation since approximately 1927. The airport has experienced numerous expansions since that time including a major expansion in 1955 that incorporated 1,530 acres into the airport site. The portion of the study area located outside of the existing airport boundary includes agricultural, undeveloped open space, forested (including dedicated forest preserve), and residential and commercial properties. Presumed excavation spoil piles that are now overgrown with naturalized vegetation are present near Lot A-24.

FIGURE 2. PROJECT VICINITY MAP



3.3 HISTORICAL OR PUBLISHED INFORMATION

Historical and published information reviewed included:

- Aerial Photographs,
- USGS topographic maps,
- The National Hydrography Dataset (NHD),
- The National Wetlands Inventory (NWI),
- The Lake County Wetland Inventory,
- The Section 303(d) List,
- The Lake County Soil Survey, and
- Federal Emergency Management Agency (FEMA) National Flood Hazard Layer

The project is located within the Bull Creek-Des Plaines River watershed (hydrologic unit code (HUC) 071200040503) and the Waukegan River-Frontal Lake Michigan watershed (HUC 040400020501). According to the NHD, NWI, and USGS topographic maps, one stream (an unnamed tributary of the Des Plaines River) and four freshwater ponds are present in the project area. The Lake County Wetland Inventory shows the same stream and numerous additional wetlands and local drainage routes within the project area. Mapping is provided in Appendix A-1.

The Lake County Soil Survey indicates the following soils are present in the project area. The soils marked with an asterisk (*) are hydric. A soils map and associated hydric ratings are provided in Appendix A-1.

- *103A – Houghton muck, 0 to 2 percent slopes
- *232A – Ashkum silty clay loam, 0 to 2 percent slopes
- 298A—Beecher silt loam, 0 to 2 percent slopes
- 298B—Beecher silt loam, 2 to 4 percent slopes
- *330A—Peotone silty clay loam, 0 to 2 percent slopes
- 442A—Mundelein silt loam, 0-2% slopes
- 530B—Ozaukee silt loam, 2 to 4 percent slopes
- 530C – Ozaukee silt loam, 4 to 6 percent slopes
- 530C2 – Ozaukee silt loam, 4 to 6 percent slopes, eroded
- 530D—Ozaukee silt loam, 6-12% slopes
- 530D2 – Ozaukee silt loam, 6 to 12 percent slopes, eroded
- 531B—Markham silt loam, 2 to 4 percent slopes
- 805B—Orthents, clayey, undulating
- 840B—Zurich and Ozaukee silt loams, 2 to 4 percent slopes
- 978A – Wauconda and Beecher silt loams, 0 to 2 percent slopes
- *1330A—Peotone silty clay loam, undrained, 0 to 2 percent slopes

According to the Illinois Environmental Protection Agency Section 303(d) Listed Waters, there are no 303(d) listed impaired sections of this watershed within or adjacent to the proposed project. The unnamed stream in the project area is a tributary to the Des Plaines River, a TNW. A TNW connection map is provided in Appendix A-1.

According to the FEMA Flood Hazard Layer, the project area is partially located within a FEMA Flood Zone AE at the northeast and southwest ends of the project area. The southwest end of

the project area is also partially located within Regulatory Floodway for the unnamed tributary to the Des Plaines River. A FEMA Floodplain Map including the regulatory floodway boundary are provided in Appendix A-1.

4.0 RESULTS

One (1) stream, one (1) pond, thirty-five (35) wetlands, and thirteen (13) drainage swales were identified in the project area during the onsite investigation on June 18-19, 2024, July 16-18, and September 11-12, 2024, and June 18-20 and September 24 & 26, 2025. Since issuance of the previous Ecological Resource Report by Crawford, Murphy, & Tilly (January 3, 2020, updated October 8, 2020), the project limits were changed significantly. This report provides an update to both INHS (2015) and CMT (2020) reports reflective of the current project area.

The Aquatic Resources Map provided in Appendix A-2 depicts the location of the resources on an aerial photograph. Data forms are provided in Appendix B. Representative photographs are provided in Appendix C.

4.1 STREAMS

One (1) stream, Unnamed Tributary 1, was identified within the project area. A summary of this stream is provided in the table below.

TABLE 2. STREAM SUMMARY

Stream Name	UNT 1 - Unnamed Tributary of Des Plaines River
Receiving Waters	Des Plaines River
Stream Type	Intermittent
USACE Flow Characteristic	RPW Seasonal
12 Digit HUC	071200040503
Priority Waters	Tertiary Priority
Biological Stream Rating	None
Drainage Area (sq. miles)[1]	1.50
QHEI Score	57
Linear Feet Within Project Area	1,852

[1] Source: USGS Stream Stats

UNNAMED TRIBUTARY 1 TO DES PLAINES RIVER

An unnamed tributary of the Des Plaines River (indicated as UNT 1) flows across the southwest portion of the project area through a wetland complex and connecting many of the wetlands in the vicinity. Specifically, UNT 1 is directly abutted by Wetlands AI, 3, 4, 5, 6, and 7. This intermittent stream passes through a culvert under West Town Line Road and through a former suburban development, including between the concrete supports for a small bridge whose deck has been removed.

UNT1 was flowing at the time of the June 2025 evaluation, and according to USGS StreamStats has an estimated contributing watershed of 1.50 square miles at the most downstream end of the project area. During the September 2025 investigation, the stream was not flowing and had isolated pools of water within the project area. It is expected that the USACE will determine this stream is a relatively permanent water with an intermittent flow regime. A qualitative analysis was conducted using the qualitative habitat evaluation index (QHEI) developed by the Ohio Environmental Protection Agency. The representative stream reach described is located immediately south of the culvert crossing under West Town Line Road. Based on the QHEI score of 57, the stream is "good quality." The evaluation point for the stream was taken directly south of W Town Line Road, where the StreamStats drainage area was estimated at 1.35 square miles. A copy of the QHEI form is provided in Appendix B.

4.2 WETLANDS

Thirty-five (35) wetlands, totaling 19.47 acres, were identified in the project area. A summary of the wetlands is provided in Table 3. Details on the soil, hydrology and dominant vegetation for each wetland are provided on the Routine Wetland Determination Data Forms included in Appendix B. Site photographs, including data collection locations and soil pit results, are included in Appendix C. Suspect areas associated with data forms AB, AD, and AJ were determined not to be wetlands; data forms and photos are included but these locations are not discussed in the text. Feature names skip from AD to AF, with no AE data points, due to a field labeling error. To avoid confusion where wetland names appear to "skip" letters or numbers, grey rows in Table 3 indicate upland-only sites and wetlands previously identified in previous reports that are outside the 2025 project area.

The native FQI and native mean C values for each wetland are based on vegetation surveys with differing levels of sampling intensity. This is due in part to several of these wetlands undergoing concurrent intensive vegetation surveys by CMT under mitigation and monitoring requirements per the Lake County Watershed Development Ordinance (WDO; SMC Permit #SESC-23-129); these monitored wetlands are indicated in their individual descriptions below. Varying sampling effort should be taken into consideration when interpreting provided FQI values.

WETLAND A

Wetland A is a severely degraded, 0.01 acre emergent wetland located in the southwest portion of the project area. Wetland A receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland A is likely not federally jurisdictional.

Table 3. Wetland Summary

WETLAND NAME	WETLAND TYPE	CONNECTIVITY	PRELIMINARY FEDERAL JURISDICTIONAL STATUS[1]	NWI CLASSIFICATION	LAKE COUNTY INVENTORY	NATIVE FQI & NATIVE MEAN C	HQAR?[2]	ACRES WITHIN PROJECT AREA
A	Emergent	None	Isolated	Upland	Yes	4.92 / 2.20	No	0.01
B	Wetland B is not located within the 2025 updated project area.							0
C	Wetland C is not located within the 2025 updated project area.							0
D	Scrub-shrub	None	Isolated	Upland	No	18.43 / 2.88	No	0.17
E	Scrub-shrub	None	Isolated	Upland	No	15.95 / 2.74	No	0.02
F	Scrub-shrub	None	Isolated	Upland	No	20.87 / 3.3	Yes	0.06
G	Emergent & Forested	None	Isolated	Upland	No	8.78/2.27	No	0.02
H	Emergent	None	Isolated	Upland	No	19.04/3.26	No	0.46
I	Scrub-shrub	None	Isolated	Upland	No	21.38 / 2.86	Yes	0.12
J	Emergent	None	Isolated	Upland	Yes	19.06 / 2.91	No	0.23
K	Wetland K was in the 2020 report and is now part of larger Wetland Y.							NA
L	Emergent	None	Isolated	Freshwater Emergent	Yes	6.96/2.20	No	0.48
M through R	Wetlands M, N, O, P, Q, and R are not located within the 20205 updated project area.							0
S	Emergent	None	Isolated	Upland	No	9.90 / 3.50	No	0.04
T	Forested	None	Isolated	Upland	No	8.67/2.89	No	0.26
X	Emergent & Ponded	None	Isolated	Upland & Freshwater Pond	Yes	25.16 / 2.99	Yes	0.5
Y	Emergent	None	Isolated	Upland	Yes	33.28 / 3.25	Yes	0.68
Z	Emergent	None	Isolated	Upland	No	14.17 / 2.68	No	0.01
AA	Emergent	None	Isolated	Upland	No	14.32 / 2.53	No	0.02
AB	Site AB is non-wetland.							NA
AC	Emergent	None	Isolated	Upland	No	12.37 / 2.64	No	0.04

WETLAND NAME	WETLAND TYPE	CONNECTIVITY	PRELIMINARY FEDERAL JURISDICTIONAL STATUS[1]	NWI CLASSIFICATION	LAKE COUNTY INVENTORY	NATIVE FQI & NATIVE MEAN C	HQAR?[2]	ACRES WITHIN PROJECT AREA
AD	Site AD is non-wetland.							NA
AE	There is no site AE.							NA
AF	Emergent	> Drainage 5 > Wetland Y	Isolated	Upland	Yes	17.94 / 2.7	No	0.04
AG	Scrub-shrub	> Wetland AH	Isolated	Upland	No	12.67 / 4.22	No	0.05
AH	Scrub-shrub	None	Isolated	Upland	No	15.31 / 3.13	No	0.15
AI	Emergent & Forested	> UNT1 > Des Plaines R.	Federally Jurisdictional	Upland & Riverine	Yes	14.09 / 3.15	No	0.21
AJ	Site AJ is non-wetland.							NA
AK	Emergent	None	Isolated	Upland	No	15.21/3.40	No	0.03
AL	Emergent	None	Isolated	Upland	No	3.36/1.44	No	0.07
1	Wetland 1 was in the 2020 report and is now part of larger Wetland AI.							NA
2	Wetland 2 is not located within the 2025 updated project area.							0
3	Emergent & Forested	> Wetland 4 > UNT1 > Des Plaines R.	Federally Jurisdictional	Freshwater Pond	Yes	18.58/3.79	Yes	0.49
4	Emergent & Forested	> UNT1 > Des Plaines R.	Federally Jurisdictional	Upland, Riverine, & Forested Shrub	Yes	22.03 / 3.62	No	4.45
5	Emergent	> Wetland 4 > UNT1 > Des Plaines R.	Federally Jurisdictional	Freshwater Emergent	Yes	20.21 / 4.13	Yes	1.84
6	Emergent & Forested	> Wetland 4 > UNT1 > Des Plaines R.	Federally Jurisdictional	Freshwater Emergent	Yes	20.23 / 4.22	Yes	2.47
7	Emergent	> UNT1 > Des Plaines R.	Federally Jurisdictional	Freshwater Emergent	Yes	No site access[3]	NA	2.59

WETLAND NAME	WETLAND TYPE	CONNECTIVITY	PRELIMINARY FEDERAL JURISDICTIONAL STATUS[1]	NWI CLASSIFICATION	LAKE COUNTY INVENTORY	NATIVE FQI & NATIVE MEAN C	HQAR?[2]	ACRES WITHIN PROJECT AREA
8	Emergent & Ponded	> UNT1 > Des Plaines R.	Federally Jurisdictional	Freshwater Pond	Yes	No site access[3]	NA	0.36
9	Emergent	None	Isolated	Upland	No	5.0 / 5.0[4]	No[4]	0.06
10	Emergent	None	Isolated	Upland	Yes	11.00 / 3.67	No	0.26
11	Emergent	None	Isolated	Upland	No	9.81 / 2.83	No	1.23
12 through 14	Wetlands 12, 13, and 14 are not located within the 2025 project area.							0
15	Emergent & Scrub-shrub	None	Isolated	Upland	Yes	17.85 / 3.5	Yes	0.56
16, 17	Wetlands 16 and 17 are not located within the 2025 project area.							0
18	Forested	None	Isolated	Upland	No	No site access[3]	NA	0.34
19	Emergent	> Wetland 20	Isolated	Upland	Yes	No site access[3]	NA	0.73
20	Emergent	None	Isolated	Pond	Yes	7.33 / 2.44	No	0.42

1 Preliminary determination only based on current definition of Waters of the US; jurisdiction will be determined by USACE
2 Based on native FQI and native Mean C per Lake County Watershed Development Ordinance.
3 No site access for Wetlands 7, 8, 18, and 19. Quality score in main text refers to CMT 2020 data
4 Although Wetland 9 has a native mean C of 5, this site only contains one native plant species and should not be considered an HQAR. See text for detail.

WETLAND D

Wetland D is a moderately degraded, 0.17 acre scrub-shrub wetland located in the northeast end of the project area north of Wadsworth Road. This wetland likely developed due to past disturbance associated with the removal of historic structures in a former suburban development. Because of disturbance to the area in 2023, this wetland was monitored by CMT environmental staff (SMC Permit #SESC-23-129) in 2023 and 2024 per the Lake County Watershed Development Ordinance (WDO). In 2025, this wetland was determined by LCSMC to be an exempt Isolated Water of Lake County and is therefore exempt from further monitoring and is not regulated under the Lake County WDO. Associated documentation is available in Appendix D.

Wetland D receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland D is likely not federally jurisdictional. Wetland D currently qualifies as an exempt isolated water of Lake County under the Lake County WDO. Documentation is available in Appendix D.

WETLAND E

Wetland E is a moderately degraded, 0.02 acre scrub-shrub wetland located in the northeast end of the project area north of Wadsworth Road. This wetland likely developed due to past disturbance associated with the removal of historic structures in a former suburban development. Because of disturbance to the area in 2023, this wetland was monitored by CMT environmental staff (SMC Permit #SESC-23-129) in 2023 and 2024 per the Lake County WDO. In 2025, this wetland was determined by LCSMC to be an exempt Isolated Water of Lake County and is therefore exempt from further monitoring and is not regulated under the Lake County WDO. Associated documentation is available in Appendix D.

Wetland E receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland E is likely not federally jurisdictional. Wetland E currently qualifies as an exempt isolated water of Lake County under the Lake County WDO. Documentation is available in Appendix D.

WETLAND F

Wetland F is a high quality, 0.06 acre scrub-shrub wetland located in the northeast end of the project area north of Wadsworth Road. This wetland likely developed due to past disturbance associated with the removal of historic structures in a former suburban development. Because of disturbance to the area in 2023, this wetland was monitored by CMT environmental staff (SMC Permit #SESC-23-129) in 2023 and 2024 per the Lake County WDO. In 2025, this wetland was determined by LCSMC to be an exempt Isolated Water of Lake County and is therefore exempt from further monitoring and is not regulated under the Lake County WDO. Associated documentation is available in Appendix D.

Wetland F receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland F is likely not federally jurisdictional. Wetland F currently qualifies as an exempt isolated water of Lake County under the Lake County WDO. Documentation is available in Appendix D.

WETLAND G

Wetland G is a degraded, 0.02 acre emergent and forested wetland located in the northeast end of the project area north of Wadsworth Road. Wetland G receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland G is likely not federally jurisdictional.

WETLAND H

Wetland H is a moderately degraded, 0.46 acre emergent wetland located in the northeast end of the project area north of Wadsworth Road. Wetland H receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. It may occasionally drain to nearby isolated Wetland AC following heavy rain events. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland H is likely not federally jurisdictional.

WETLAND I

Wetland I is a high quality, 0.12 acre scrub-shrub wetland located in the northeast end of the project area north of Wadsworth Road. This wetland is small with uneven topography, and likely developed due to past disturbance associated with the removal of historic structures in a former suburban development. Because of disturbance to the area in 2023, this wetland was monitored by CMT environmental staff (SMC Permit #SESC-23-129) in 2023 and 2024 per the Lake County WDO. In 2025, this wetland was determined by LCSMC to be an exempt Isolated Water of Lake County and is therefore exempt from further monitoring and is not regulated under the Lake County WDO. Associated documentation is available in Appendix D.

Wetland I receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland I is likely not federally jurisdictional. Wetland I currently qualifies as an exempt isolated water of Lake County under the Lake County WDO. Documentation is available in Appendix D.

WETLAND J

Wetland J is a moderately degraded, 0.23 acre emergent wetland located in the northeast end of the project area north of Wadsworth Road. Wetland J has increased significantly in size since the previous assessment in 2020, likely related to tree and brush removal in and around the wetland in 2023. Because of disturbance to the area in 2023, this wetland was monitored by CMT environmental staff (SMC Permit #SESC-23-129) in 2023-2025 per the Lake County WDO. Wetland J has received conditional sign-off from LCSMC (received September 5, 2025; See Appendix D) for completion of required mitigation and monitoring, pending 2025 management activities.

Wetland J receives drainage from surface runoff and may receive some surface flow from nearby Wetland 20 during heavy rain events. Wetland J also receives drainage from Wetland L via a culvert underneath Wadsworth Road. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland J is likely not federally jurisdictional.

WETLAND L

Wetland L is a degraded 0.48 acre emergent wetland located in the northeast end of the project area immediately south of Wadsworth Road. Wetland L receives drainage from surface runoff and drains to Wetland J, an isolated wetland, via a culvert underneath Wadsworth Road. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland L is likely not federally jurisdictional.

WETLAND S

Wetland S is a degraded 0.04 acre emergent wetland located in a depression in the area east of North Green Bay Road and north of the southwest end of Runway 5/23. It receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland S is likely not federally jurisdictional.

WETLAND T

Wetland T is a degraded 0.40 acre forested wetland located in the area east of North Green Bay Road and north of the southwest end of Runway 5/23. Only part of this wetland, 0.26 acre, is located within the project area. It receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland T is likely not federally jurisdictional.

WETLAND X

Wetland X is a high quality 0.50 acre emergent wetland with some open water located within the Airport property in the area south of Wadsworth Road and north of the airfield for Runway 5/23. Because of disturbance to the area in 2023, this wetland was monitored by CMT environmental staff (SMC Permit #SESC-23-129) in 2023-2025 per the Lake County WDO. Wetland X has received conditional sign-off from LCSMC (received September 5, 2025; See Appendix D) for completion of required mitigation and monitoring, pending 2025 management activities.

Wetland X receives drainage from surface runoff and Drainages 1, 3, and 4. Wetland X does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland X is likely not federally jurisdictional.

WETLAND Y

Wetland Y is a high quality, 0.68 acre emergent wetland located within the Airport property in the area south of Wadsworth Road and north of the airfield for Runway 5/23. Wetland Y includes areas formerly delineated as two discontinuous wetlands, Wetland K and Wetland 13. The area between Wetlands K and 13, previously upland, is now wetland, resulting in a single continuous wetland that includes the previous limits of Wetland K and Wetland 13. The southeast portion of Wetland Y is largely open water and dominated by *Phalaris arundinacea*. Because of disturbance to the area in 2023, this wetland was monitored by CMT environmental staff (SMC Permit #SESC-23-129) in 2023-2025 per the Lake County WDO. Wetland Y has received conditional sign-off

from LCSMC (received September 5, 2025; See Appendix D) for completion of required mitigation and monitoring, pending 2025 management activities.

Wetland Y receives drainage from surface runoff, from Drainage 8, and from Wetland AF via Drainage 5. Wetland Y does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland Y is likely not federally jurisdictional.

WETLAND Z

Wetland Z is a moderately degraded, 0.01 acre emergent and scrub-shrub wetland located in the northeast end of the project area north of Wadsworth Road. This wetland is small with uneven topography, and likely developed due to past disturbance associated with the removal of historic structures in a former suburban development. Because of disturbance to the area in 2023, this wetland was monitored by CMT environmental staff (SMC Permit #SESC-23-129) in 2023 and 2024 per the Lake County WDO. In 2025, this wetland was determined by LCSMC to be an exempt Isolated Water of Lake County and is therefore exempt from further monitoring and is not regulated under the Lake County WDO. Associated documentation is available in Appendix D.

Wetland Z receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland Z is likely not federally jurisdictional. Wetland Z currently qualifies as an exempt isolated water of Lake County under the Lake County WDO. Documentation is available in Appendix D.

WETLAND AA

Wetland AA is a moderately degraded, 0.02 acre emergent wetland located in the northeast end of the project area north of Wadsworth Road. This wetland is small with uneven topography, and likely developed due to past disturbance associated with the removal of historic structures in a former suburban development. Because of disturbance to the area in 2023, this wetland was monitored by CMT environmental staff (SMC Permit #SESC-23-129) in 2023 and 2024 per the Lake County WDO. In 2025, this wetland was determined by LCSMC to be an exempt Isolated Water of Lake County and is therefore exempt from further monitoring and is not regulated under the Lake County WDO. Associated documentation is available in Appendix D.

Wetland AA receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland AA is likely not federally jurisdictional.

WETLAND AC

Wetland AC is a moderately degraded, 0.04 acre emergent wetland located in the northeast portion of project area, north of Wadsworth Road. This wetland has developed recently in 2023-2024 following disturbance and tree/shrub clearing to wetland and buffer areas in 2023, and its boundaries are likely to continue changing gradually for the next few years. Because of the disturbance to the area, this wetland was monitored by CMT environmental staff (SMC Permit #SESC-23-129) per the Lake County WDO and has received conditional sign-off from LCSMC

(received September 5, 2025; See Appendix D) for completion of required mitigation and monitoring, pending 2025 management activities.

Wetland AC receives drainage from surface runoff and may receive some surface flow from nearby Wetland H and Wetland I during heavy rain events. Wetland AC does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland AC is likely not federally jurisdictional.

WETLAND AF

Wetland AF is a moderately degraded, 0.04 acre emergent wetland located within the Airport property in the area south of Wadsworth Road and north of the airfield for Runway 5/23. It receives drainage from surface runoff from the surrounding area and Drainage 5 and then drains along Drainage 5 to Wetland Y, an isolated wetland. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland AF is likely not federally jurisdictional.

WETLAND AG

Wetland AG is a moderately degraded, 0.05 acre scrub-shrub wetland located within the Airport property in the area south of Wadsworth Road and north of the airfield for Runway 5/23. It receives drainage from surface runoff and drains to the abutting Wetland AH, which is isolated. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland AG is likely not federally jurisdictional.

WETLAND AH

Wetland AH is a moderately degraded, 0.23 acre scrub-shrub wetland located within the Airport property in the area south of Wadsworth Road and north of the airfield for Runway 5/23. This wetland extends partly outside the project area, with 0.15 acre located within the project area and 0.08 acres outside the project area. It receives drainage from surface runoff and the abutting Wetland AG, and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland AH is likely not federally jurisdictional.

WETLAND AI

Wetland AI is a moderately degraded, 0.21 acre forested and emergent wetland located entirely within the project area south of West Town Line Road near the southwest corner of the project area. This wetland receives drainage from surface runoff and directly abuts UNT 1, which is a tributary of the Des Plaines River, a TNW. As this wetland directly abuts a tributary to a TNW, Wetland AI is likely federally jurisdictional.

WETLAND AK

Wetland AK is a moderately degraded, 0.03 acre emergent wetland located entirely within the project area south of West York House Road near the southwest corner of the project area. This wetland is located within Waukegan Savanna, which is owned and managed by the Lake County Forest Preserve District. This wetland receives drainage from surface runoff and Drainage 11 and Drainage 12. These drainages flow directly to Wetland AK and do not appear to drain to any

adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland AK is likely not federally jurisdictional.

WETLAND AL

Wetland AL is a severely degraded, 0.07 acre emergent wetland located within the Airport property in the area south of Wadsworth Road and north of the airfield for Runway 5/23. It receives drainage from surface runoff and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland AL is likely not federally jurisdictional.

WETLAND 3

Wetland 3 is a moderately degraded forested and wet meadow emergent wetland located near the southwest end of the project area. Wetlands 3, 4, 5, and 6 are part of a single continuous wetland complex that totals approximately 23 acres; 0.49 acres of Wetland 3 are located within the project area. This wetland receives drainage from surface runoff and directly abuts UNT 1, which is a tributary of the Des Plaines River, a TNW. As this wetland complex directly abuts a tributary to a TNW, Wetland 3 is likely federally jurisdictional.

WETLAND 4

Wetland 4 is a moderately degraded forested and emergent wetland located near the southwest end of the project area. Wetlands 3, 4, 5, and 6 are part of a single continuous wetland complex that totals approximately 23 acres; 4.45 acres of Wetland 4 are located within the project area. This wetland receives drainage from surface runoff and directly abuts UNT 1, which is a tributary of the Des Plaines River, a TNW. As this wetland directly abuts a tributary to a TNW, Wetland 4 is likely federally jurisdictional.

WETLAND 5

Wetland 5 is a high quality, approximately 2-acre emergent wetland located near the southwest boundary of the project area. Wetlands 3, 4, 5, and 6 are part of a single continuous wetland complex that totals approximately 23 acres; 1.84 acres of Wetland 5 are located within the project area. This wetland receives drainage from surface runoff and is continuous with Wetland 6, which abuts UNT 1, which is a tributary of the Des Plaines River, a TNW. As this wetland complex directly abuts a tributary to a TNW, Wetland 5 is likely federally jurisdictional.

WETLAND 6

Wetland 6 is a high quality 2.47 acre emergent and forested wetland located near the southwest end of the project area. Wetlands 3, 4, 5, and 6 are part of a single continuous wetland complex that totals approximately 23 acres; the entire 2.47 acres of Wetland 6 are located within the project area. This wetland receives drainage from surface runoff and is continuous with Wetland 4, which directly abuts UNT 1, which is a tributary of the Des Plaines River, a TNW. As this wetland complex directly abuts a tributary to a TNW, Wetland 6 is likely federally jurisdictional.

WETLAND 7

Wetland 7 is an approximately 12-acre emergent wetland with an estimated 2.59 acres located in the southwest end of the project area. CMT environmental scientists were not able to gain access from landowners of this site. From the accessible areas, this wetland appeared to be dominated by European Common Reed (*Phragmites australis*). The CMT 2020 wetland update of this site reported the wetland as moderately degraded (native FQI= 16.3, native mean C=3.2), which this report was not able to confirm or update. Previously collected data are provided in Appendix B-4 and previous report maps are provided in Appendix A-3. Site access will be necessary to update this information before any permitting or construction activities can occur.

Wetland 7 surrounds the ponded Wetland 8, and UNT 1 flows through this wetland complex. This wetland receives drainage from surface runoff and directly abuts UNT 1, which is a tributary of the Des Plaines River, a TNW. As this wetland directly abuts a tributary to a TNW, Wetland 7 is likely federally jurisdictional.

WETLAND 8

Wetland 8 is an approximately 1.5-acre ponded and emergent wetland with an estimated 0.36 acres located in the southwest end of the project area. CMT environmental scientists were not able to gain access from landowners of this site. The CMT 2020 wetland update of this site reported the wetland as moderately degraded (native FQI= 10.6, native mean C=4), which this report was not able to confirm or update. Previously collected data are provided in Appendix B-4 and previous report maps are provided in Appendix A-3. Site access will be necessary to update this information before any permitting or construction activities can occur.

Wetland 7 surrounds the ponded Wetland 8, and UNT 1 flows through this wetland complex. Wetland 8 receives drainage from surface runoff and directly abuts UNT 1, which is a tributary of the Des Plaines River, a TNW. As this wetland directly abuts a tributary to a TNW, Wetland 8 is likely federally jurisdictional.

WETLAND 9

Wetland 9 is a severely degraded, 0.06 acre emergent wetland located along the west side of N Green Bay Rd and extends outside of the roadside ditch. It is heavily invaded by Narrowleaf Cattail (*Typha angustifolia*) and apparently only contains a single native plant species, *Carex stricta* (C = 5). As a result, this wetland has a deceptively high native mean C value, but is in fact a low quality wetland. It receives drainage from surface runoff within the frequently mowed field and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland 9 is likely not federally jurisdictional.

WETLAND 10

Wetland 10 is a degraded, 0.26 acre emergent wetland located in a depression in the area east of North Green Bay Road and north of the southwest end of Runway 5/23. It receives drainage from surface runoff within the frequently mowed airfield and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland 10 is likely not federally jurisdictional.

WETLAND 11

Wetland 11 is a degraded, 1.23 acre emergent wetland located in a depression in the area east of North Green Bay Road and north of the southwest end of Runway 5/23. This wetland is heavily invaded and dominated by European Common Reed (*Phragmites australis*) and invasive Cattails (*Typha angustifolia*). This wetland is split into two pieces by a short culvert underneath a driving route. It receives drainage from surface runoff and indirect surface runoff from the surrounding airport via surface runoff and a culvert at the north end of the wetland, and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland 11 is likely not federally jurisdictional.

WETLAND 15

Wetland 15 is a moderately degraded, 0.56 acre scrub-shrub and emergent wetland located within the Airport property in the area south of Wadsworth Road and north of the airfield for Runway 5/23. It receives overflow drainage from Pond M via Drainage 7 flowing into Drainage 6, from a culvert underneath Wadsworth Road via Drainage 6, and from surface runoff, as well as from Drainage 8 and 9. It does not drain to any adjacent drainages, waterways, or culverts. Based on historical mapping and imagery, Wetland 15 appears to have abutted a historic tributary to Bull Creek prior to development of the airport. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland 15 is likely not federally jurisdictional.

WETLAND 18

Wetland 18 is an approximately 0.34 acre forested wetland located in the northeast portion of project area, north of Wadsworth Road. CMT environmental scientists were not able to gain access from landowners of this site. The CMT 2020 wetland update of this site reported the wetland as degraded (native FQI=5.7, native mean C=2), which this report is not able to confirm or update. Site access will be necessary to update this information before any permitting or construction activities can occur. Wetland 18 receives drainage from surface runoff; aerial imagery, INHS and CMT prior data, and visual inspection from the road right-of-way indicate that this wetland likely does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland 18 is likely not federally jurisdictional.

WETLAND 19

Wetland 19 is an approximately 0.73 acre emergent wetland located in the northeast portion of project area, north of Wadsworth Road. CMT environmental scientists were not able to gain access from landowners of this site. The CMT 2020 wetland update of this site reported the wetland as moderately degraded (native FQI=10.1, native mean C=2.6), which this report is not able to confirm or update. Previously collected data are provided in Appendix B-4 and previous report maps are provided in Appendix A-3. Site access will be necessary to update this information before any construction activities can occur. Wetland 19 receives drainage from surface runoff, and based on aerial and topographic imagery likely drains to Wetland 20, an isolated wetland, via a drainage swale. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland 19 is likely not federally jurisdictional.

WETLAND 20

Wetland 20 is a degraded, 0.42 acre emergent wetland located in the northeast portion of project area, north of Wadsworth Road. This wetland is heavily invaded by Reed Canary Grass (*Phalaris arundinacea*). Wetland 20 receives drainage from surface runoff and possibly from nearby Wetland 19, and does not drain to any adjacent drainages, waterways, or culverts. Due to the lack of a continuous surface hydrologic connection to a TNW, Wetland 20 is likely not federally jurisdictional.

4.4 OTHER AQUATIC RESOURCES

Fourteen (14) other surface water features (SF), consisting of one (1) pond and thirteen (13) drainage swales, were identified in the project area.

Drainages 1-13 are drainage swales and are not likely federally jurisdictional. Drainages 1-10, 12, and 13 are short drainage paths that collect and direct surface runoff toward nearby wetlands and streams. The drainages except for Drainage 11 did not exhibit a continuous, defined OHWM and only carry water during or for a short duration after storm events.

Drainage 11 did display an OHWM adjacent to Wetland AK, but was determined not to be a stream. There was no surface water in this drainage swale during the September 2025 site visit. It appeared to be receiving drainage from a roadside ditch to the northwest and surface runoff from both the east and west, with a downward slope from the east into Wetland AK. Drainage 11 therefore was not a stream connecting to another waterway or connecting Wetland AK to any other surface features.

Pond M is an 0.34-acre freshwater pond located within the Airport property in the area south of Wadsworth Road and north of the airfield for Runway 5/23. This pond is recorded in the NWI and the LCWI. Overflow from Pond M during heavy rain events flows to a likely isolated wetland (Wetland 15) via Drainage 7 and Drainage 6. Due to lack of a continuous surface hydrologic connection to a TNW, Pond M is likely not federally jurisdictional.

5.0 CONCLUSIONS

One (1) stream totaling approximately 1,852 feet was identified within the project area. Seven (7) likely jurisdictional wetlands, totaling 12.41 acres, and twenty-eight (28) isolated wetlands, totaling approximately 7.06 acres, were identified within the project area. One (1) isolated pond totaling 0.34 acre was also identified within the project area.

Wetlands AI, 3, 4, 5, 6, 7, and 8 are hydrologically connected wetlands via a continuous surface connection that directly abut UNT1 to the Des Plaines River. These seven (7) are likely considered jurisdictional waters of the U.S. due to directly abutting a tributary of the Des Plaines River, TNW. Two (2) of these, specifically Wetlands 7 and 8, could not be delineated due to lack of site access; additional information will be needed for these sites before any project activities in or around those wetlands can occur.

The other twenty-eight (28) wetlands in the project area (see Table 3 for complete list) are not known to connect to any other surface water and are not likely jurisdictional waters of the U.S. due to the lack of apparent hydrologic connectivity to known waters of the U.S. Two (2) of these,

specifically Wetlands 18 and 19, could not be delineated due to lack of site access; additional information will be needed for these sites before any project activities in or around those wetlands can occur.

Wetlands and other aquatic resources that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act and the jurisdictional regulatory authority lies with the U.S. Army Corps of Engineers. Additionally, the IDNR has regulatory authority over wetlands under the Interagency Wetlands Policy Act for state or state-funded projects. Any wetlands or waters that are not under federal jurisdiction will be regulated by the Lake County Watershed Development Ordinance.

5.0 REFERENCES

The following references were consulted during the investigation:

- Brown, Lauren, Grasses: An Identification Guide. Houghton Mifflin Company. New York, 1979.
- Brown, Lauren, 1997. Wildflowers and Winter Weeds. W.W. Norton and Company. New York.
- Chayka, C., and Dziuk, P. 2025. Minnesota Wildflowers: a field guide to the flora of Minnesota. Minnesota Wildflowers Information. Available online at: https://www.minnesotawildflowers.info Accessed August 2025.
- Cowardin, L.M., V. Carter, F.C. Golet and E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Biological Survey Program FWS/OBS-79/31.
- Crow, Garrett E. and Barre Hellquist. Aquatic and Wetland Plants of Northeastern North America, Volume 2 Angiosperms: Monocotyledons. The University of Wisconsin Press. Madison, Wisconsin, 2000.
- Herman, B., Sliwinski, R. and S. Whitaker. 2017. Chicago Region FQA (Floristic Quality Assessment) Calculator. U.S. Army Corps of Engineers, Chicago, IL. Version: 28 November 2022, "Chicago Region FQA Calculator_11.28.22FINAL_public.xlsm" Accessed online on 2025 at https://www.lrc.usace.army.mil/Missions/Regulatory/FQA/
- Kartesz, J.T. 2015. The Biota of North America Program (BONAP). North American Plant Atlas. Chapel Hill, N.C. [Maps generated from Kartesz, J.T. 2015. Floristic Synthesis of North America, Version 1.0. Biota of North America Program (BONAP). (in press)]. Available online at: http://bonap.net/napa Accessed July 2025.
- Knobel, Edward, Field Guide to the Grasses, Sedges and Rushes of the United States. Dover Publications, Inc. New York, 1977.
- Lake County Watershed Development Ordinance of Lake County, Illinois. 11 July 2023 Revision. Approved as Amended by the Lake County Board. Accessed online in September 2025 at https://www.lakecountyil.gov/DocumentCenter/View/3445/Lake-County-Watershed-Development-Ordinance-July-11-2023-PDF
- Lake County Wetland Inventory. Lake County, IL, Open Data And Records Hub. Accessed online at https://data-lakecountyil.opendata.arcgis.com/maps/lake-county-wetland-inventory
- Munsell Soil Color Charts. 1994 Revised Edition. Macbeth Division of Kollmorgen Instruments Corporation. New Windsor, New York.
- Illinois Environmental Protection Agency. 2024. Section 303(d) Listed Waters, 2024 List and Prioritization. Available online at: https://epa.illinois.gov/topics/water-quality/watershed-management/tmdls/303d-list.html
- National Wetlands Inventory – Version 2, Surface Waters and Wetlands Inventory. U. S. Fish and Wildlife Service. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Accessed online in September 2025 at https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

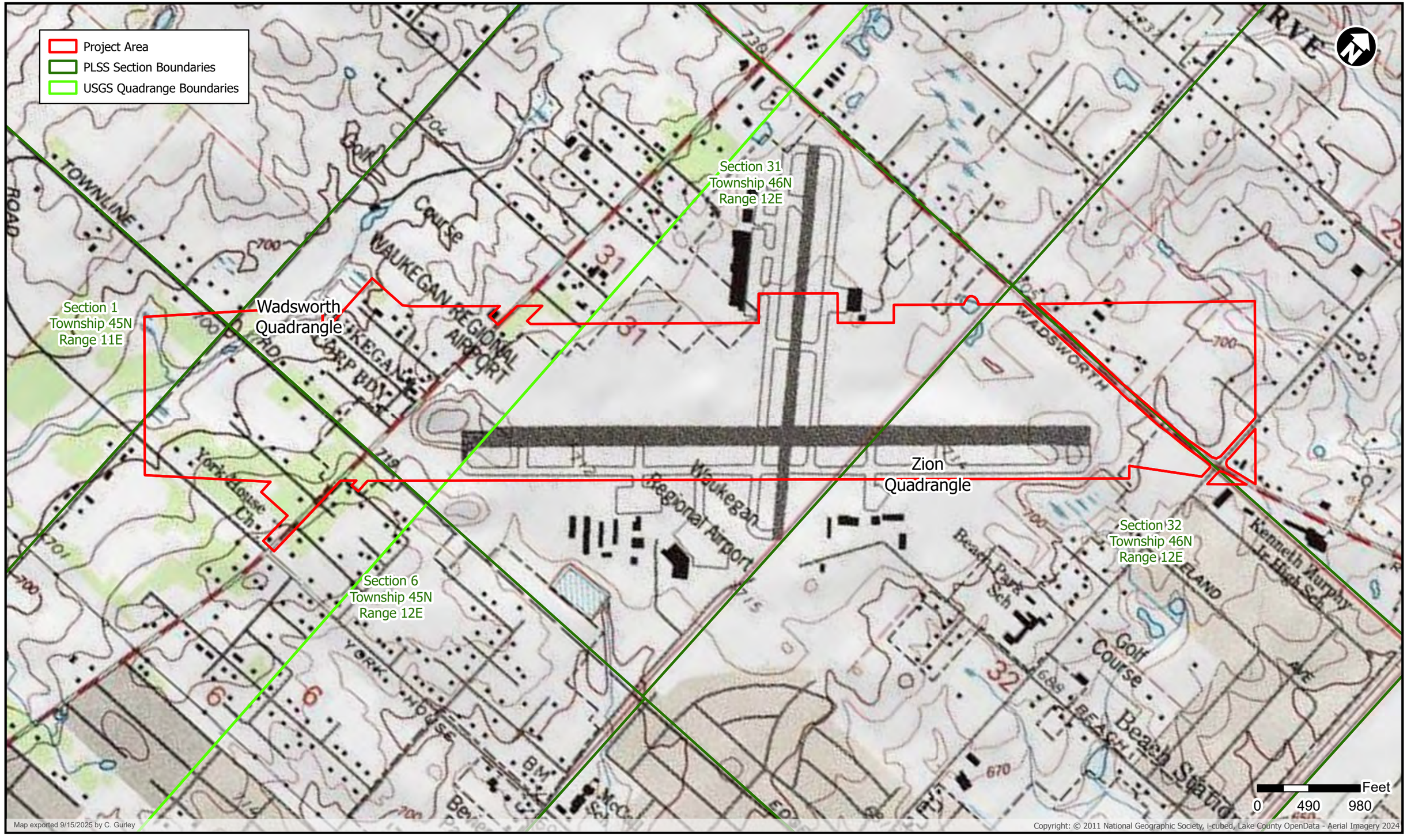
- Natural Resources Conservation Service (NRCS) Soil Survey of Lake County, Illinois.
- Newcomb, Lawrence, Newcomb's Wildflower Guide. Little, Brown and Company, Boston, New York, Toronto, London, 1977.
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at: http://websoilsurvey.sc.egov.usda.gov/. Accessed September 2025.
- Tiner, Ralph W. Defining Hydrophytes for Wetland Identification and Delineation ERDC/CRREL CR-12-1. January 2012.
- U.S. Army Corps of Engineers. 2020. National Wetland Plant List, version 3.4. U.S. Army Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH. Available online at: https://nwpl.sec.usace.army.mil/
- U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- Natural Resources Conservation Service. 2025. The PLANTS Database (. United States Department of Agriculture (USDA), National Plant Data Team, Greensboro, NC 27401-4901 USA. Available online at: http://plants.usda.gov Accessed August 2025.
- United States Department of Agriculture (USDA) *Midwestern wetland flora: Field office guide to plant species.* USDA Soil Conservation Service, Midwest National Technical Center, Lincoln, Nebraska. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. https://www.biodiversitylibrary.org/item/183197#page/1/mode/1up (Version 16JUL97).
- United States Geological Survey (USGS): The National Map. Available online at https://apps.nationalmap.gov/viewer. Reston, VA 20192 USA.
- Wilhelm, G. and L. Rericha. 2017. Flora of the Chicago Region. A Floristic and Ecological Synthesis. Indiana Academy of Science, Indianapolis. 1392 pp.
- Wisconsin Department of Natural Resources. Timed-Meander Sampling Protocol for Wetland Floristic Quality Assessment. Available online at https://dnr.wisconsin.gov/sites/default/files/topic/Wetlands/TimedMeanderSamplingProtocol.pdf

UGN Aquatic Resources Report (2025)

APPENDIX A: MAPS

Appendix A-1

Location & Secondary Resource Maps



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

USGS Topographic Map - Wadsworth, IL and Zion, IL Quadrangles

CMT
Crawford, Murphy & Tilly

Project Area

W Beach Rd
N Green Bay Rd
W Waukegan Rd
W Suddard St
W Center St
W Zephyr St
W Town Line Rd
W Eastwood Rd
W Dorothy St
W Blossom Ave
W York House Rd
W Beach Rd
N Lewis Ave

B4 C3 B3 C D1 D B2

Runway 5/23

A1 A2 A3 A4 B C A5 A6 A A7

S1 S2 S3 M1 E3 E4 B1 C1 M2 E1 F M3

Feet
0 420 840

Map exported 9/15/2025 by C. Gurley

Maxar, Lake County OpenData - Aerial Imagery 2024

Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Aerial Map

CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

National Wetland Inventory Map

CMT
Crawford, Murphy & Tilly

Project Area
Lake County Wetland Inventory

Lake County Hydro Lines (2002)
- Lake
- Pond
- River/Stream
- Detention Basin
- Dam-single line
- Culvert-single line
- Local drainage, apparent
- Stream less than five feet in width

W Beach Rd
N Green Bay Rd
W Wadsworth Rd
W Suddard St
W Center St
W Zephyr St
W Town Line Rd
W Eastwood Rd
W Dorothy St
W Blossom Ave
W York House Rd
N Lewis Ave
W Beach Rd

Runway 5/23

A1 A2 A3 A4 B C A5 A6 A7 A
S1 S2 S3 M1 E3 E4
B4 C3 B3 C D1 D B2
B1 C1 M2 E1 F M3

Feet
0 420 840

Map exported 9/15/2025 by C. Gurley

Lake County, Illinois, Maxar, Lake County OpenData - Aerial Imagery 2024

Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Lake County Wetland Inventory & Hydro Lines Map

CMT
Crawford, Murphy & Tilly

Project Area

NHD Flowline Type

Stream/River

Artificial Path

W Beach Rd

N Green Bay Rd

W Waukegan Rd

W Suddard St

W Center St

W Zephyr St

W Town Line Rd

W Eastwood Rd

W Dorothy St

W Blossom Ave

W York House Rd

W Beach Rd

N Lewis Ave

Runway 5/23

A1 A2 A3 A4 B C A5 A6 A7 A

S1 S2 S3 M1 E3 E4

B4 C3 B3 C D1 D B2

B1 C1 M2 E1 F M3

Feet

0 420 840

Map exported 10/14/2025 by C. Gurley

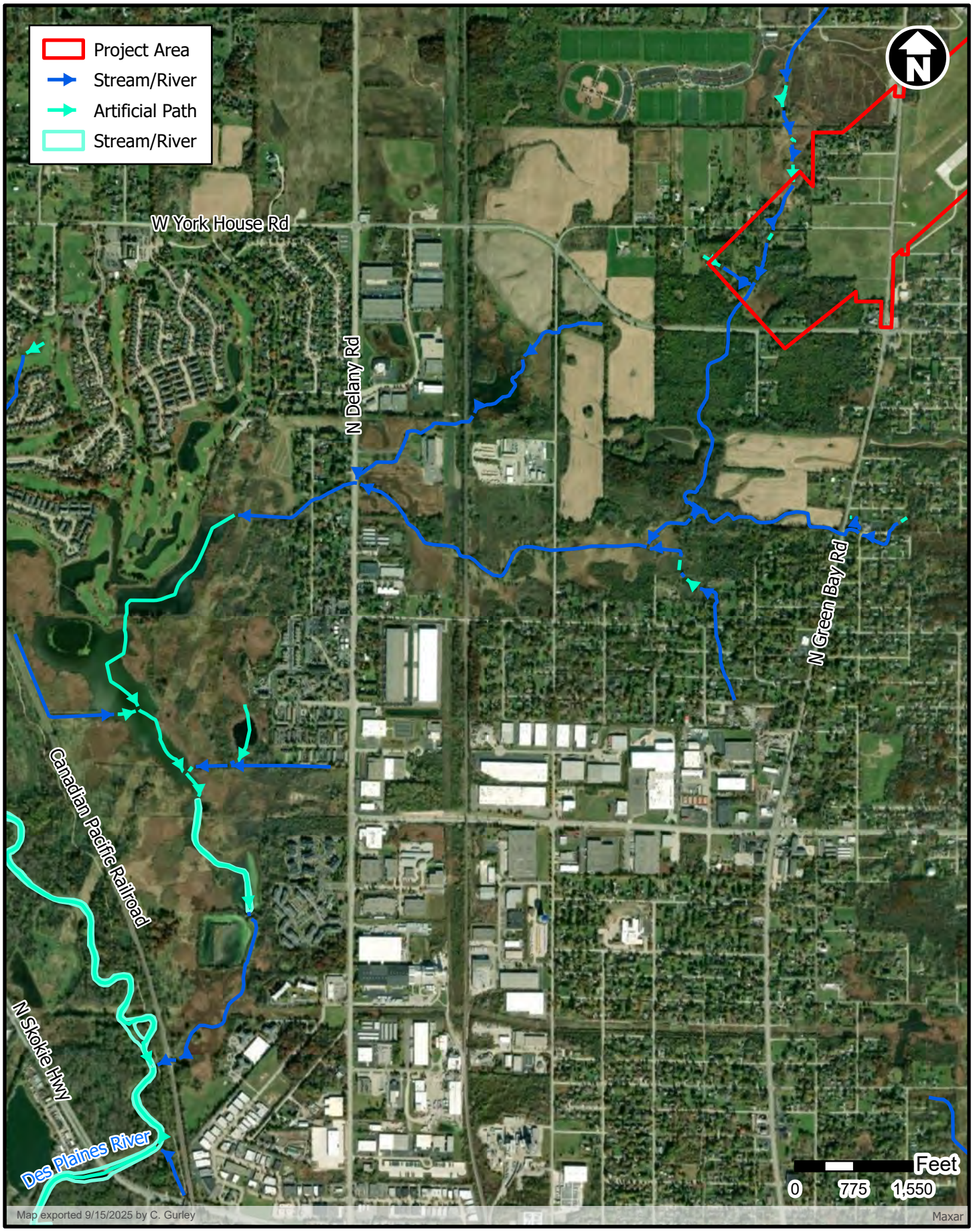
Maxar, Lake County OpenData - Aerial Imagery 2024

Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

National Hydrography Dataset Map

CMT

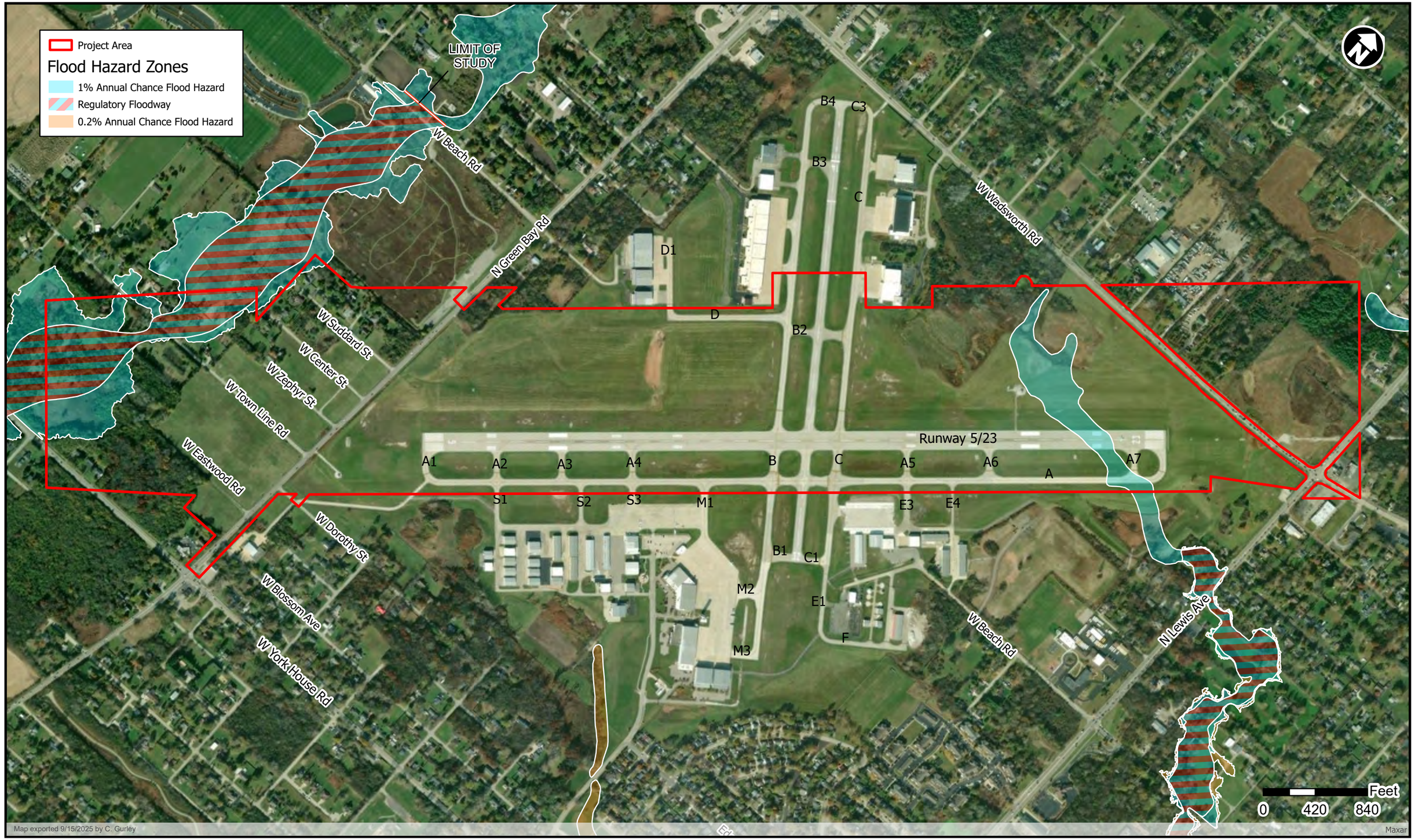
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

National Hydrography Dataset: TNW Connection Map

CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

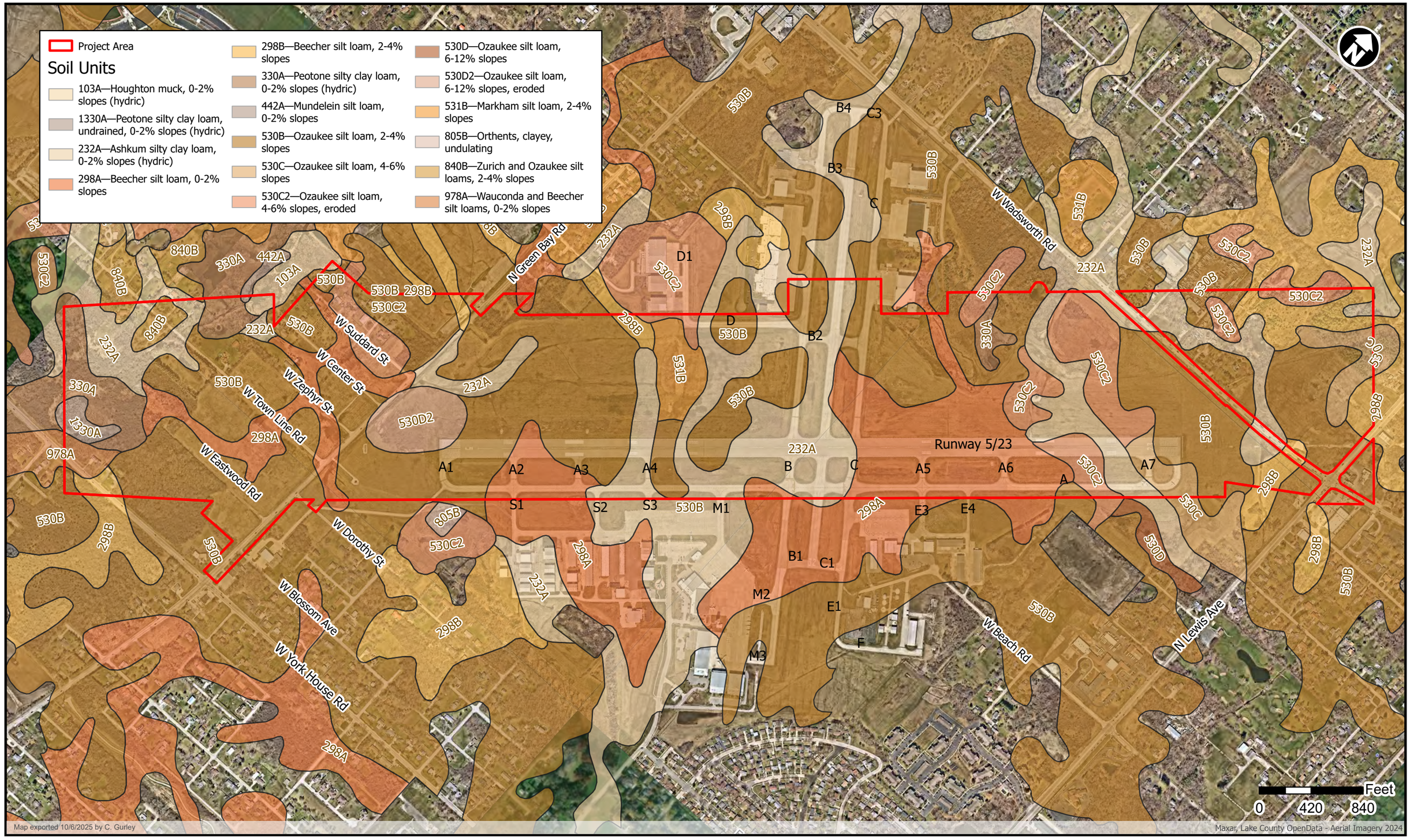
FEMA Flood Zone Map

CMT
Crawford, Murphy & Tilly

Project Area

Soil Units

- 103A—Houghton muck, 0-2% slopes (hydric)
- 1330A—Peotone silty clay loam, undrained, 0-2% slopes (hydric)
- 232A—Ashkum silty clay loam, 0-2% slopes (hydric)
- 298A—Beecher silt loam, 0-2% slopes
- 298B—Beecher silt loam, 2-4% slopes
- 330A—Peotone silty clay loam, 0-2% slopes (hydric)
- 442A—Mundelein silt loam, 0-2% slopes
- 530B—Ozaukee silt loam, 2-4% slopes
- 530C—Ozaukee silt loam, 4-6% slopes
- 530C2—Ozaukee silt loam, 4-6% slopes, eroded
- 530D—Ozaukee silt loam, 6-12% slopes
- 530D2—Ozaukee silt loam, 6-12% slopes, eroded
- 531B—Markham silt loam, 2-4% slopes
- 805B—Orthents, clayey, undulating
- 840B—Zurich and Ozaukee silt loams, 2-4% slopes
- 978A—Wauconda and Beecher silt loams, 0-2% slopes



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

NRCS Soil Survey Map

CMT
Crawford, Murphy & Tilly

Appendix A-2

Aquatic Resource Maps

Project Area

Wetland

Wetland

Wetland (Isolated, Exempt IWLC)

Presumed Wetland (No site access)

Pond

Previously Delineated Wetland

Drainage Swale

Drainage Swale inside Wetland

Stream

Wetland Extends Beyond Project Area

Wetland 3

Wetland AI

Wetland 8

Wetland 7

Wetland 4

Wetland 6

Wetland A

Wetland 5

Page 1

Page 2

Wetland 7

Wetland 9

Wetland AK

W Suddard St

W Center St

W Zephyr St

W Town Line Rd

W Beach Rd

N Green Bay Rd

Wetland T

Wetland S

Wetland 11

Wetland 10

Page 3

D1

D

B2

B4

C3

B3

C

W Wadsworth Rd

Wetland AH

Page 4

Pond M

Wetland AG

Wetland AF

Wetland Y

Wetland X

Wetland 15

Wetland 18

Wetland 19

Wetland AL

Page 5

Wetland G

Wetland H

Wetland F

Wetland 20

Wetland J

Wetland L

Wetland E

Wetlands AA, AC, I, and D

Runway 5/23

A1

A2

A3

A4

B

C

A5

A

S1

S2

S3

M1

E3

E4

B1

C1

M2

E1

F

M3

W York House Rd

N Lewis Ave

W Beach Rd

Feet

0

420

840

Map exported 9/30/2025 by C. Gurley

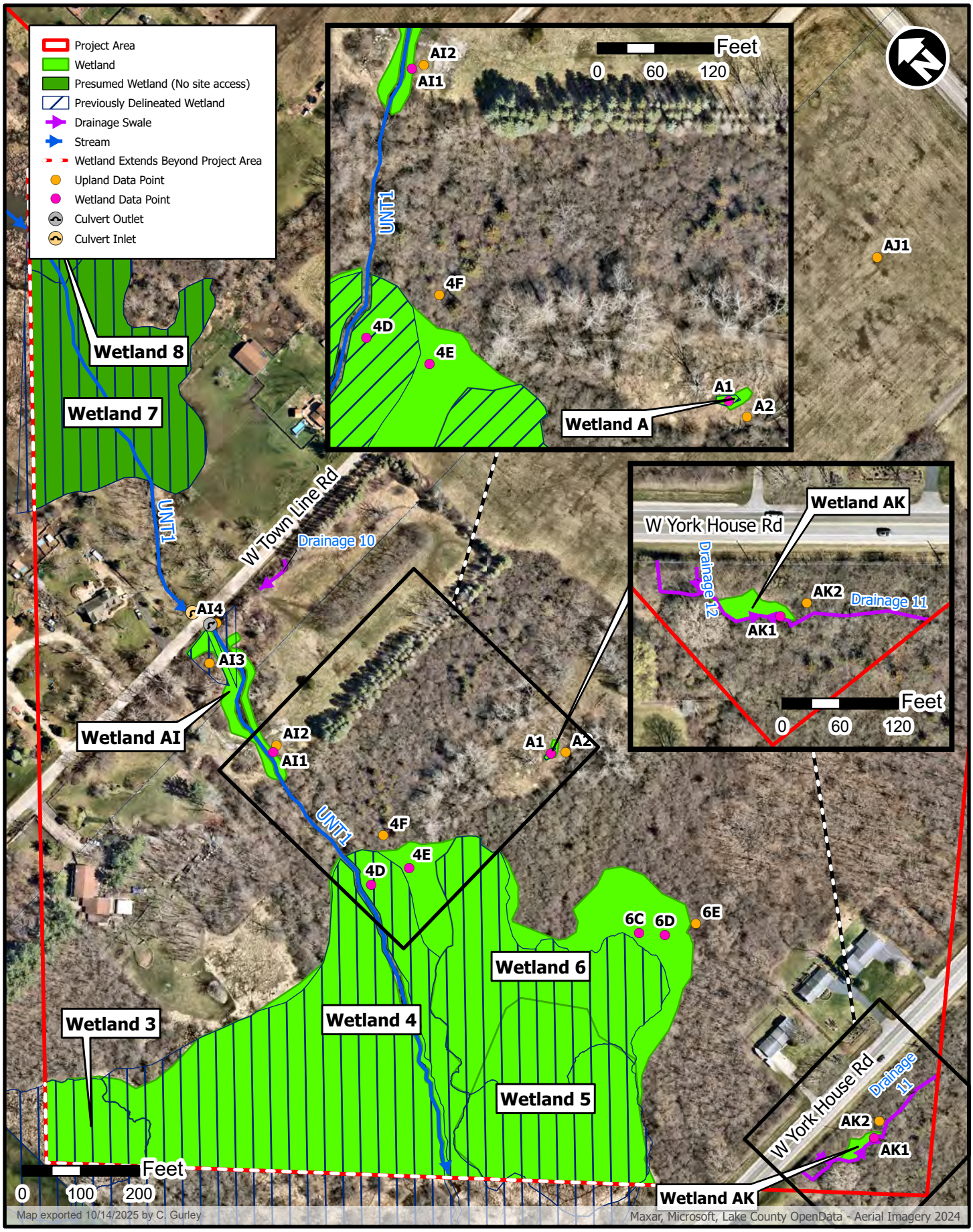
Maxar, Lake County OpenData - Aerial Imagery 2024

Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Aquatic Resource Map (Overview)

CMT

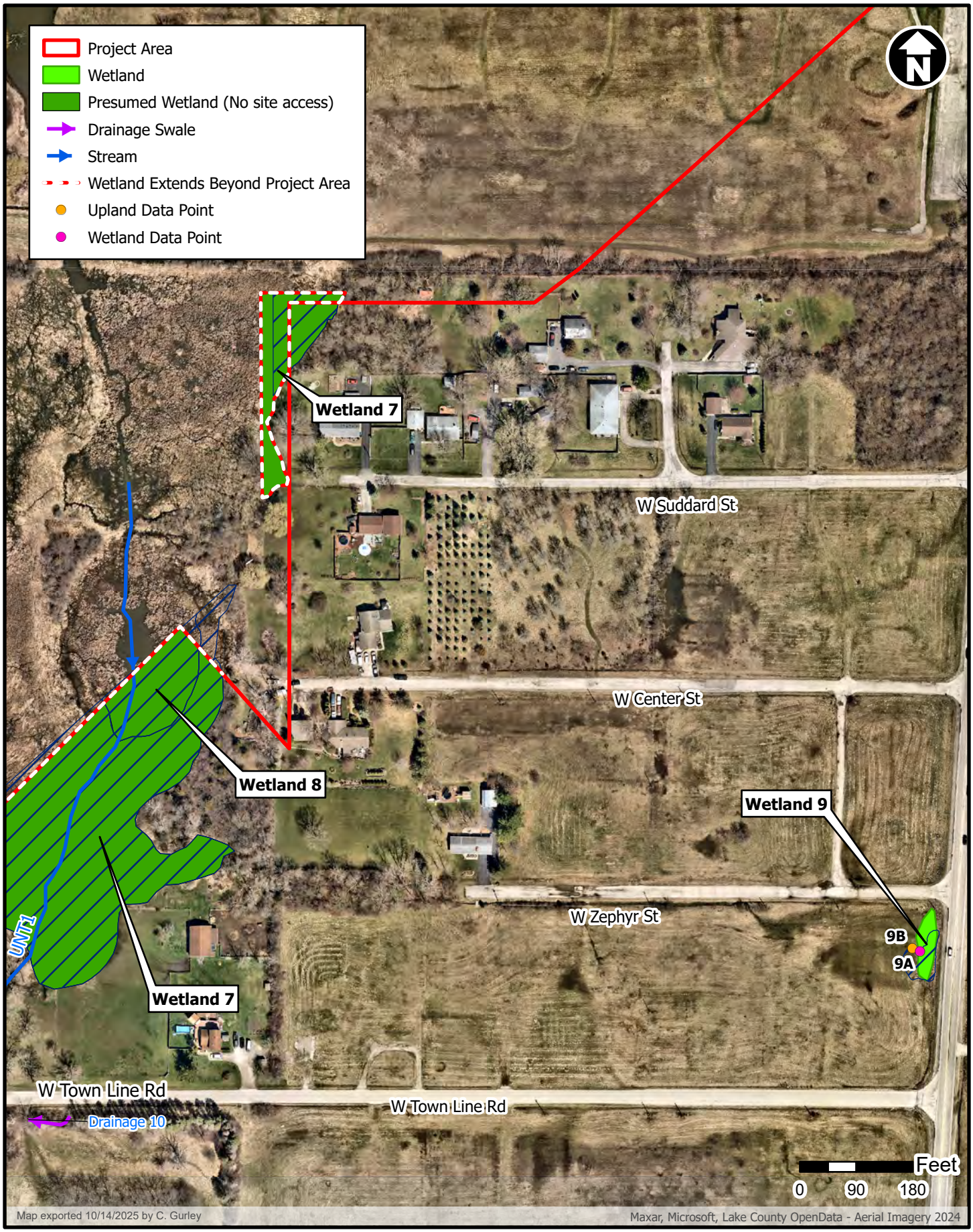
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Aquatic Resources Map (Detail, page 1 of 5)

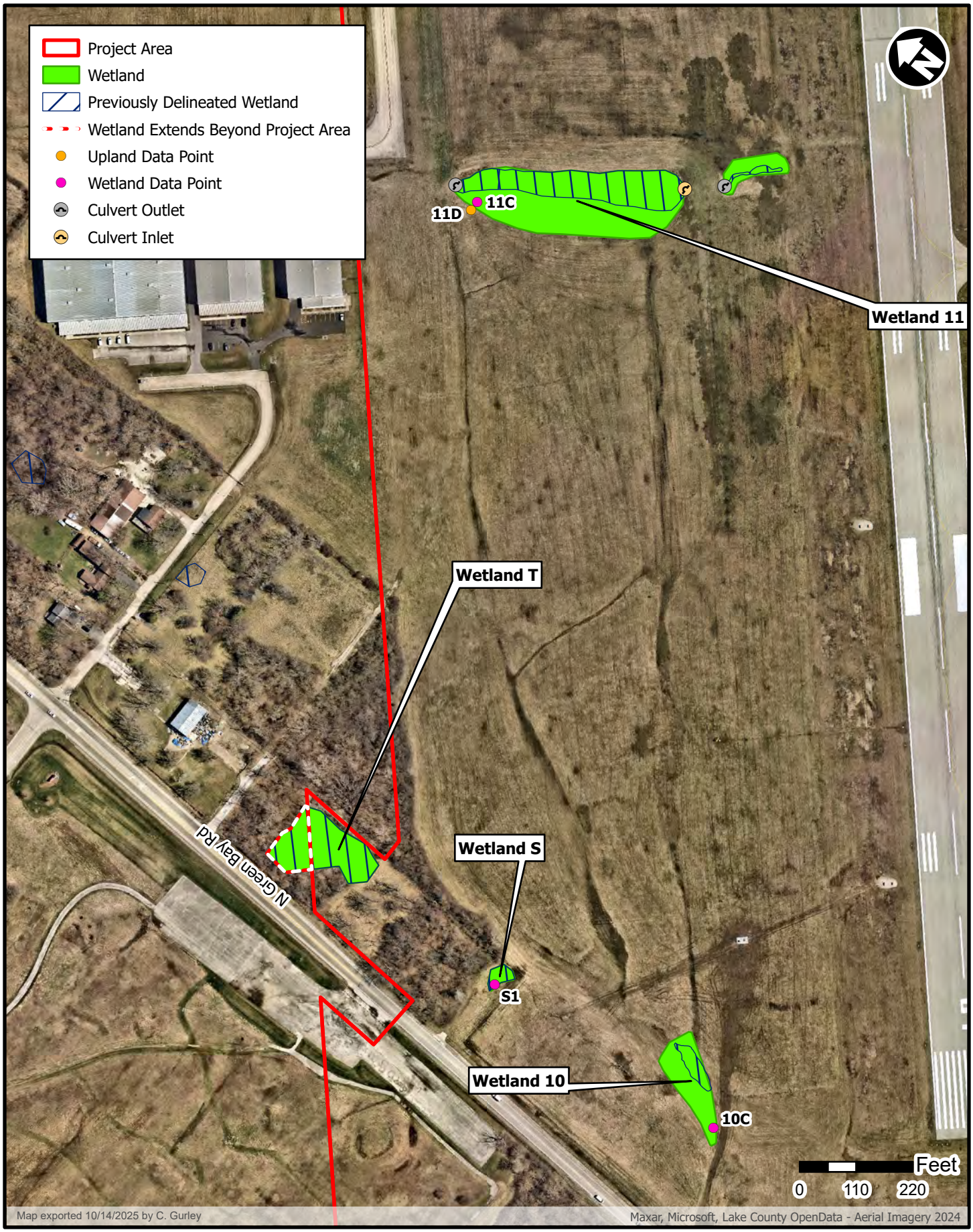
CMT
Crawford, Murphy & Tilly



Environmental Assessment Phase 3 - Waukegan National Airport, Waukegan, Lake Co., IL

Aquatic Resources Map (Detail, page 2 of 5)

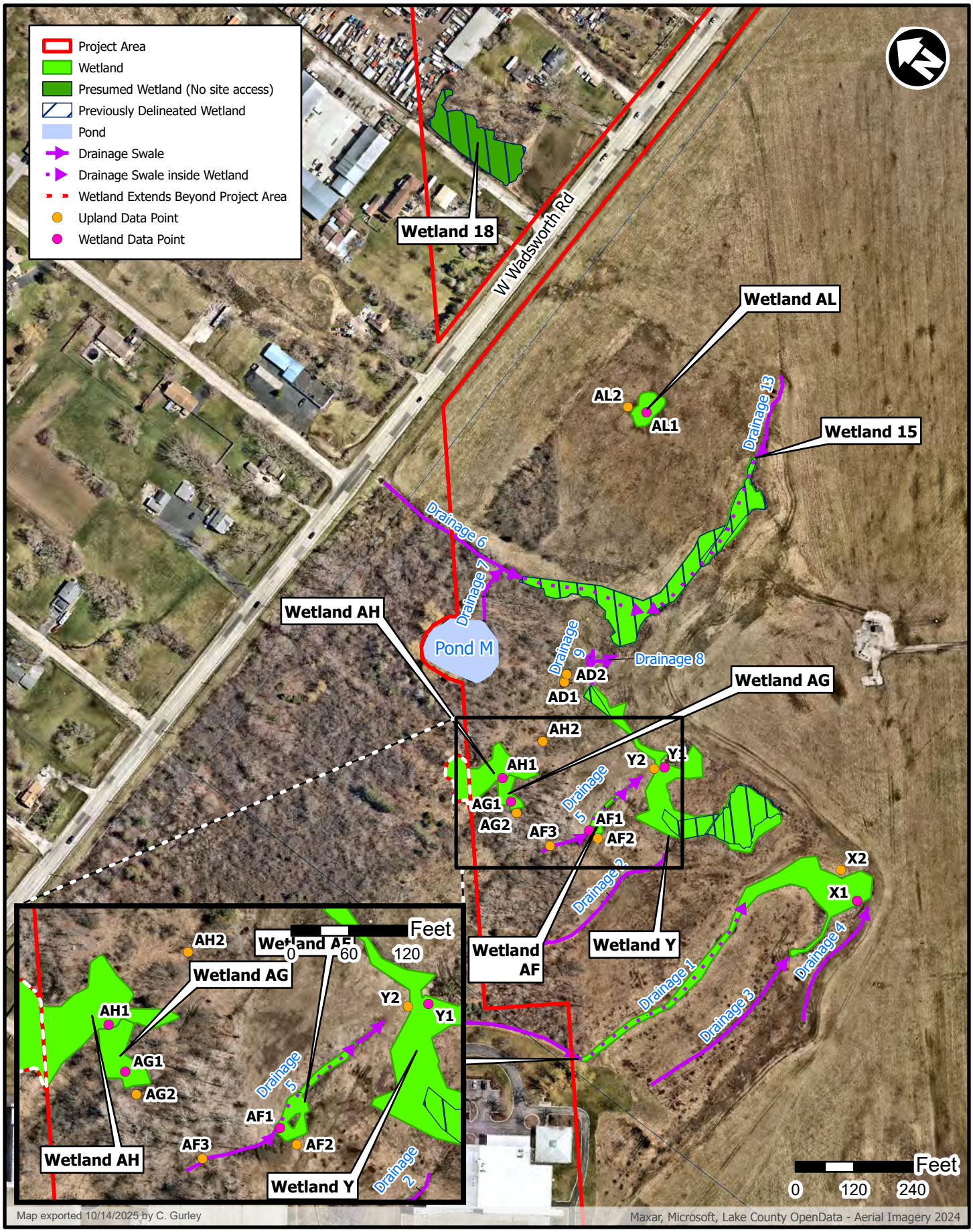
CMT
Crawford, Murphy & Tilly



Environmental Assessment Phase 3 - Waukegan National Airport, Waukegan, Lake Co., IL

Aquatic Resources Map (Detail, page 3 of 5)

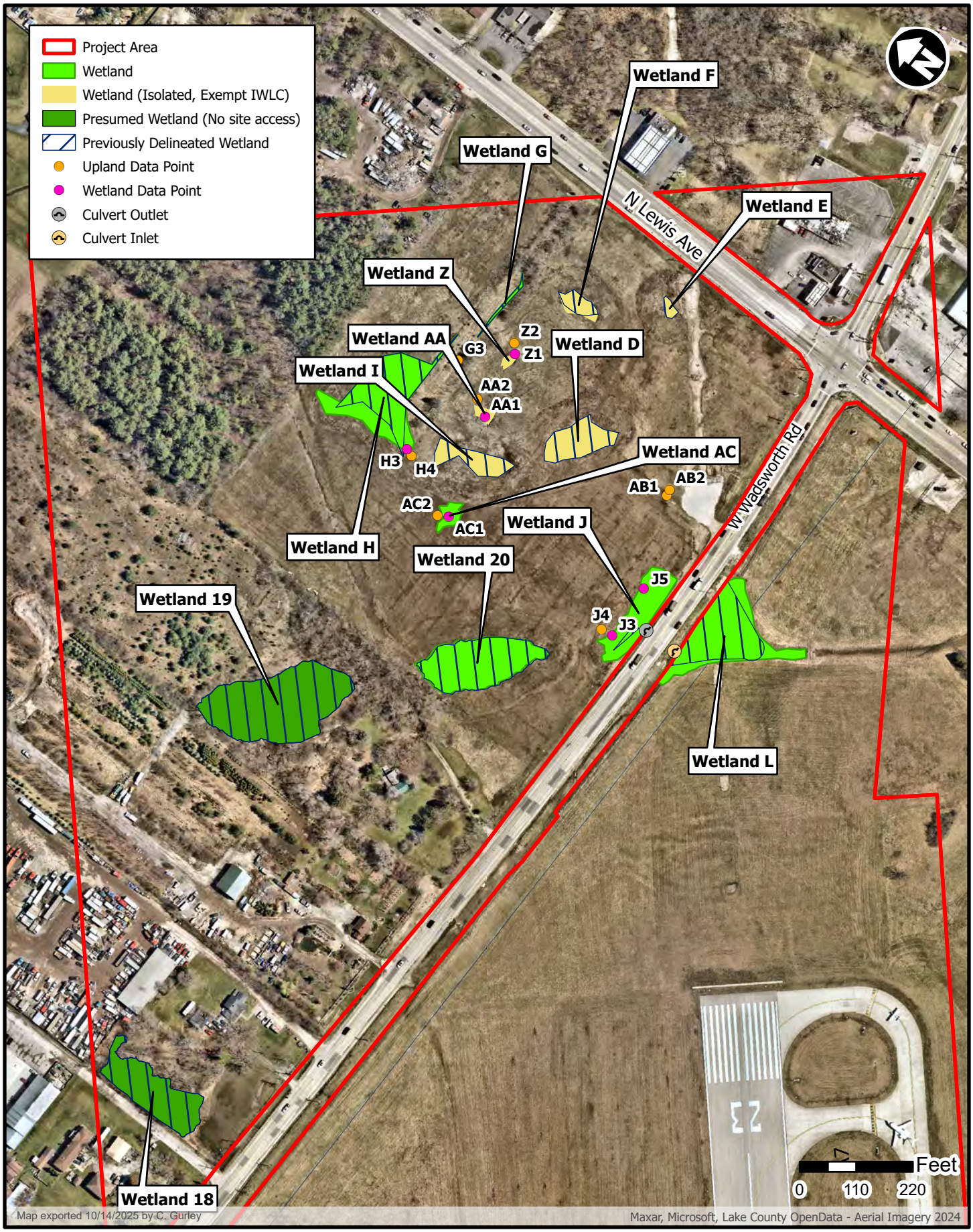
CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Aquatic Resources Map (Detail, page 4 of 5)

CMT
Crawford, Murphy & Tilly



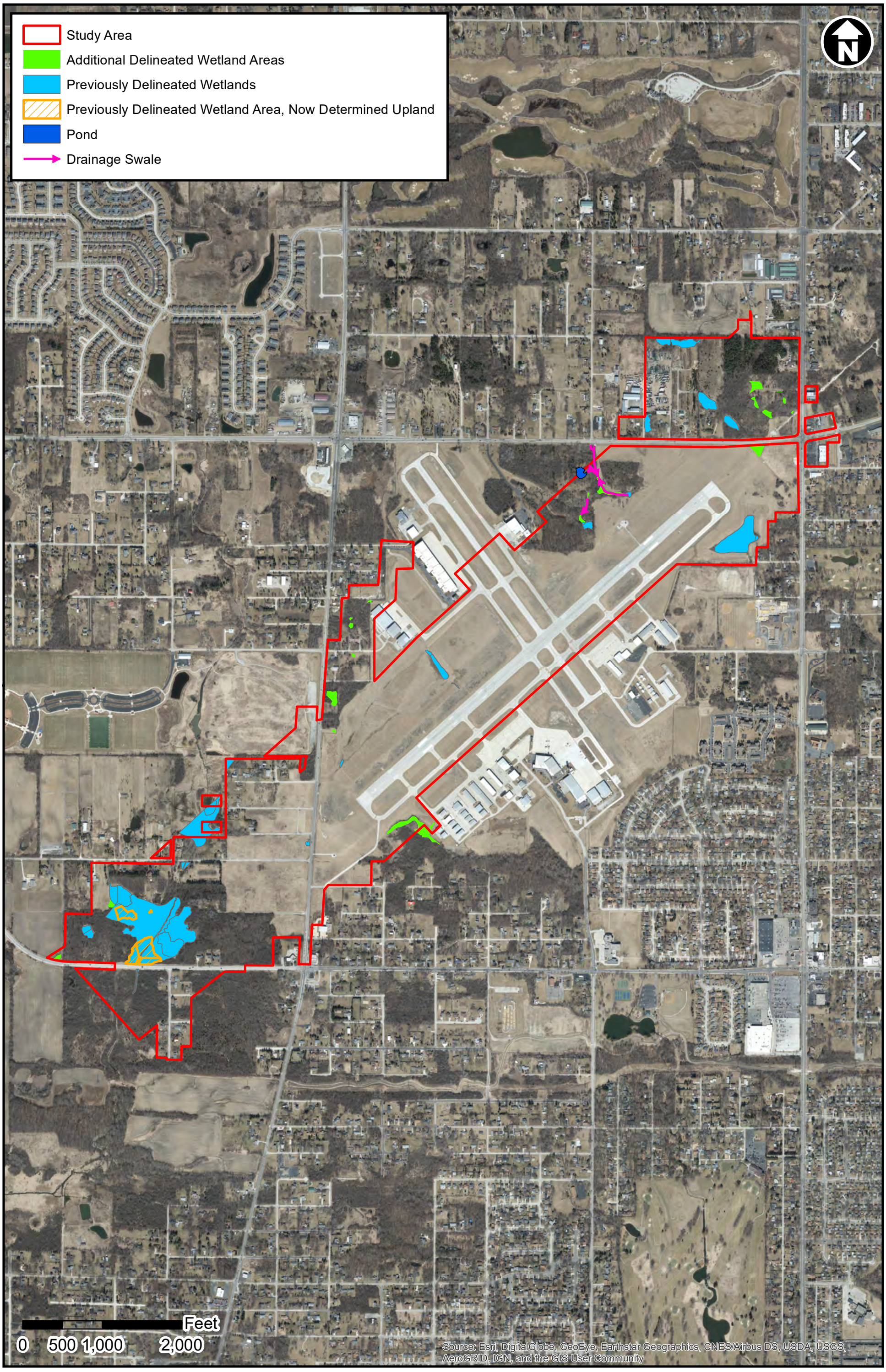
Environmental Assessment Phase 3 - Waukegan National Airport, Waukegan, Lake Co., IL

Aquatic Resources Map (Detail, page 5 of 5)

CMT
Crawford, Murphy & Tilly

Appendix A-3

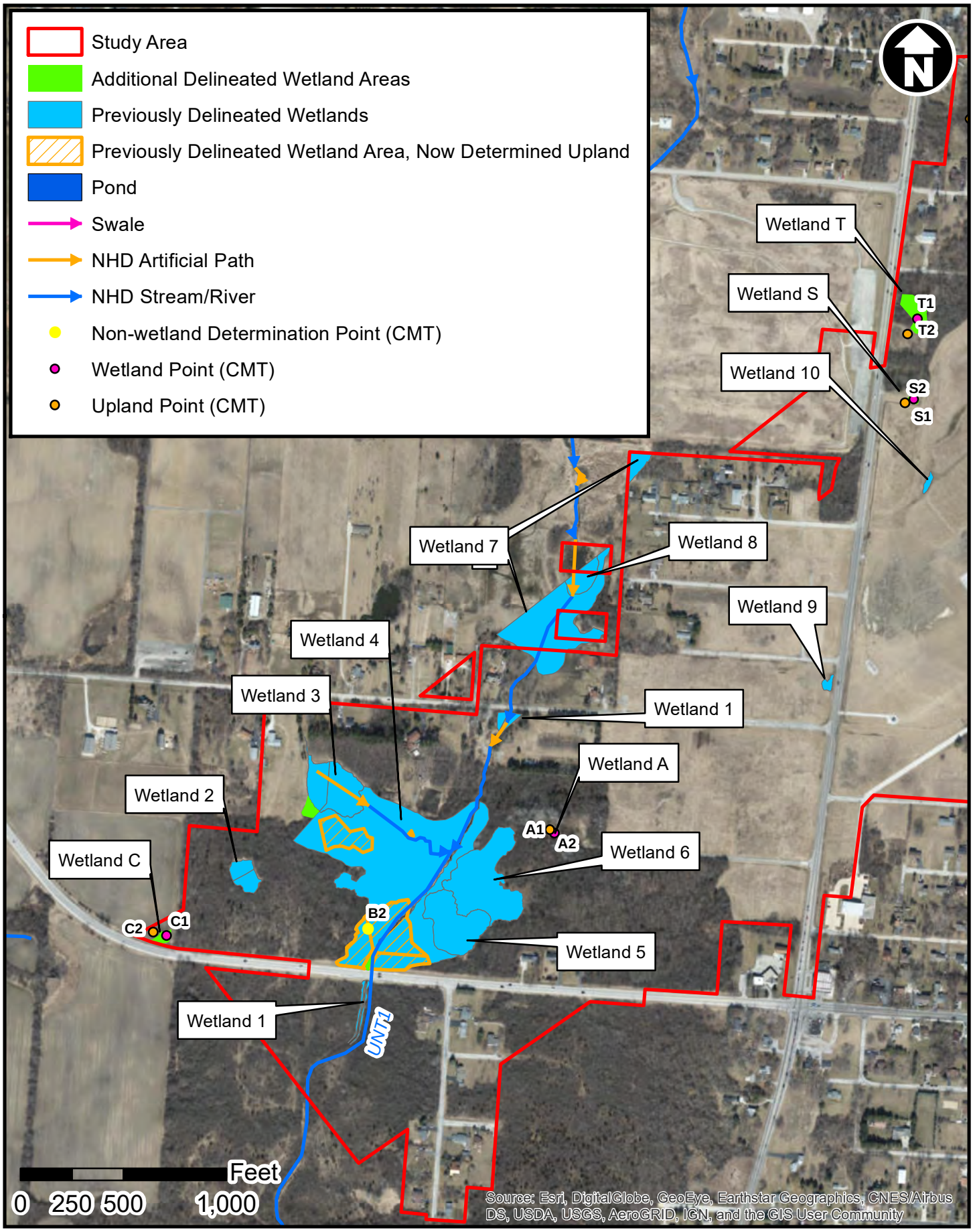
Previous Reports Aquatic Resource Maps



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Wetland Delineation Map

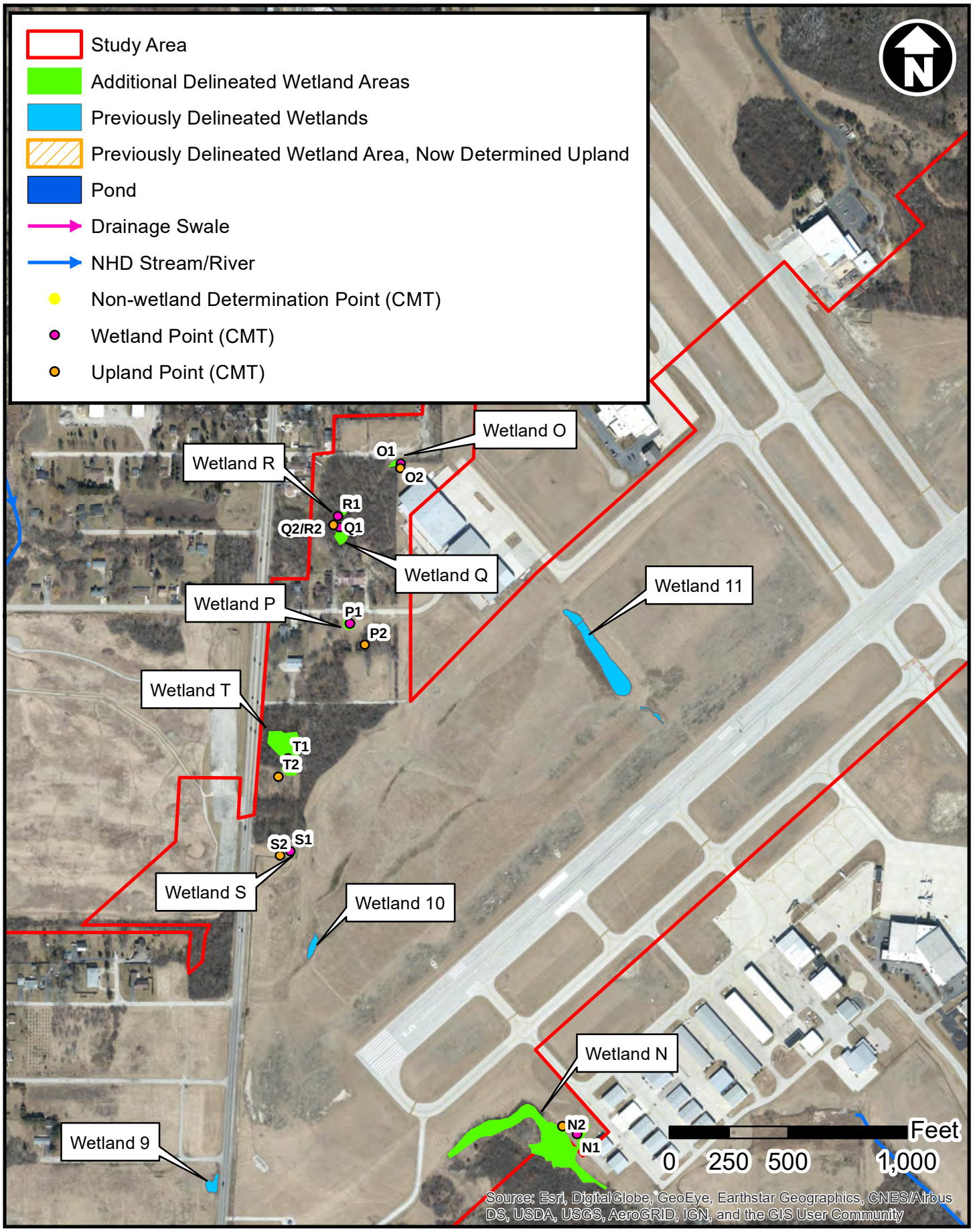
CMT
Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Wetland Delineation Map- Southwest (1 of 3)

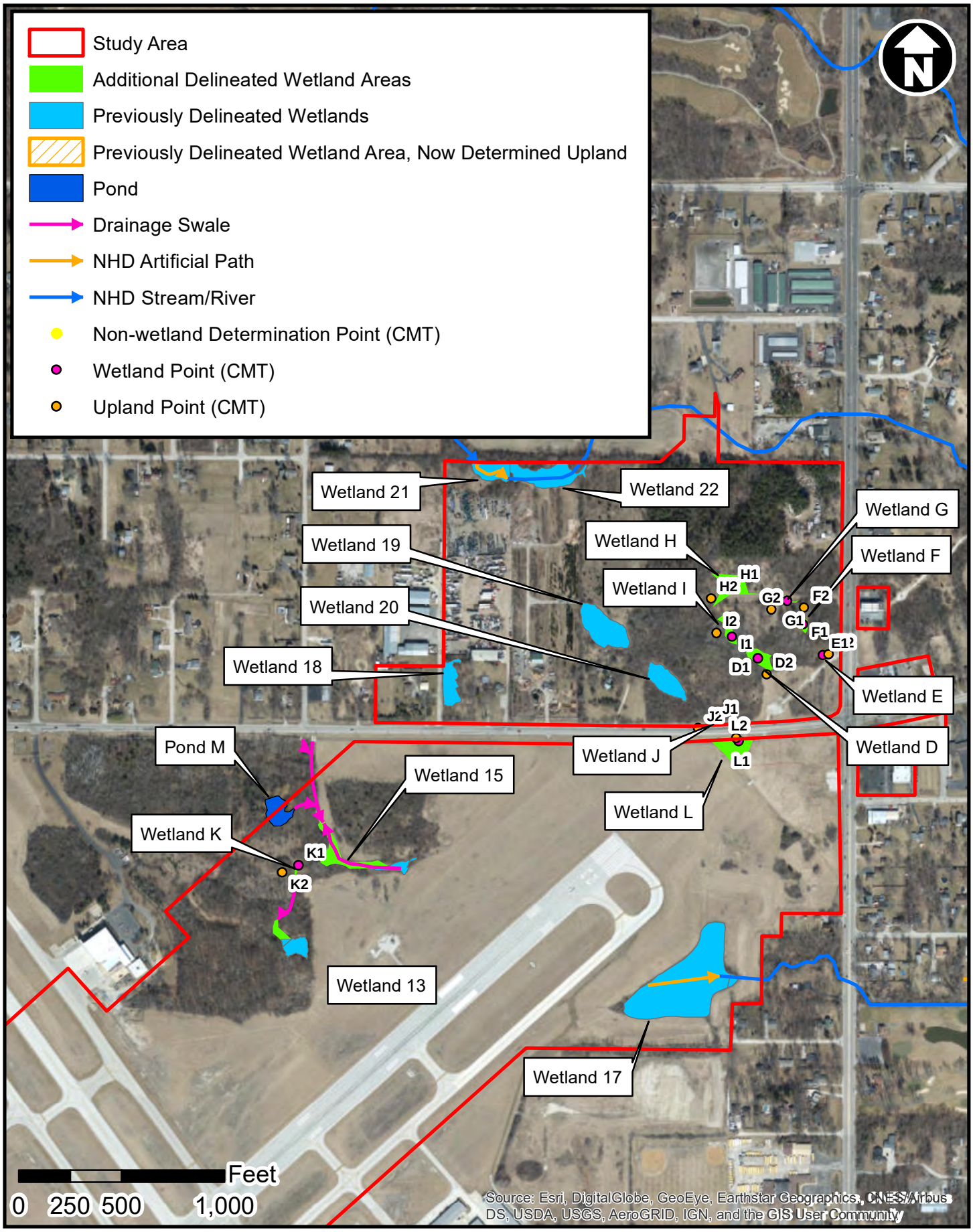
CMT Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Wetland Delineation Map- Central (2 of 3)

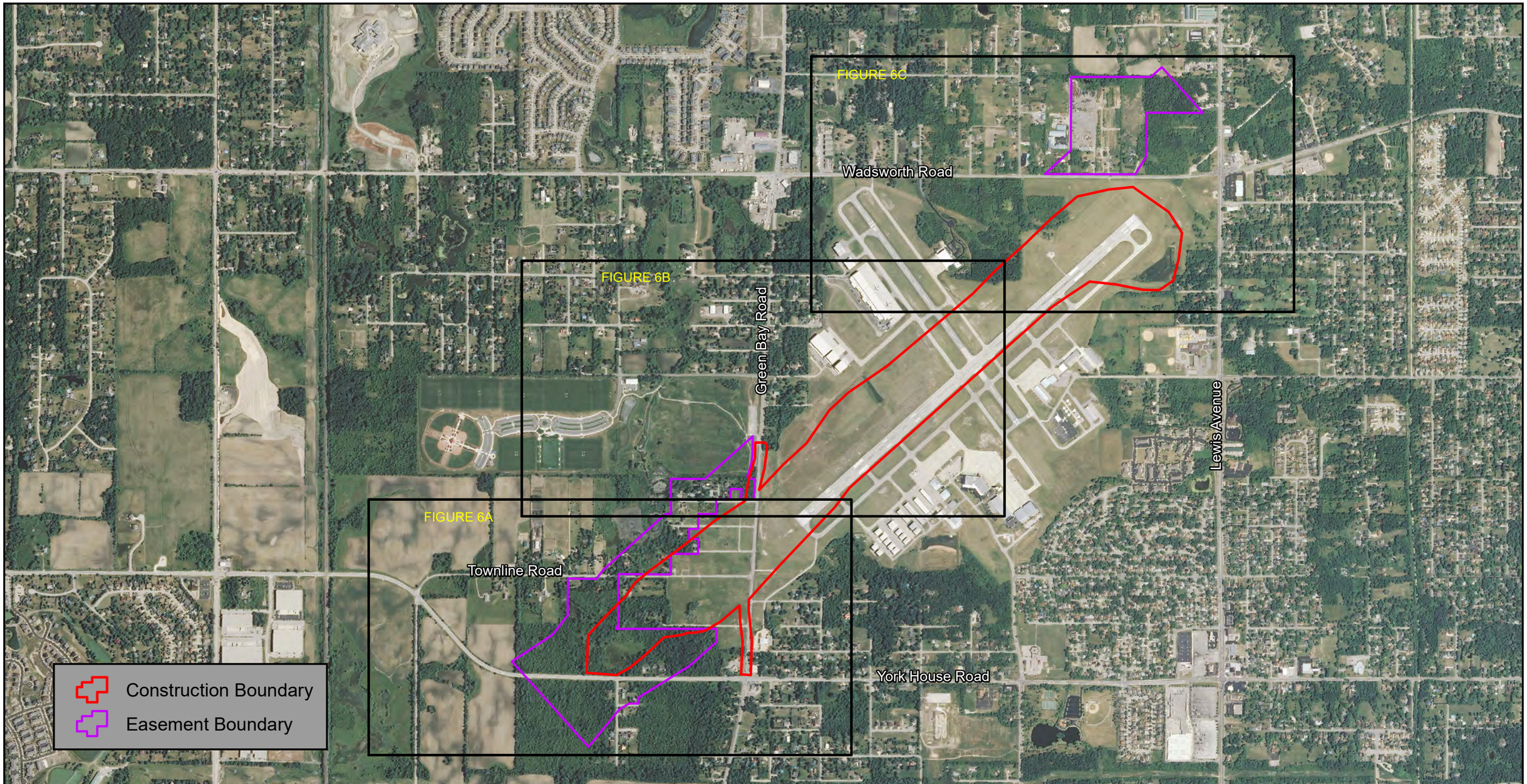
CMT Crawford, Murphy & Tilly



Replacement Runway 5/23 - Waukegan National Airport, Waukegan, Lake Co., IL

Wetland Delineation Map- Northeast (3 of 3)

CMT
Crawford, Murphy & Tilly



University of Illinois at Urbana-Champaign

ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

Figure 5
Wetland Determination Overview Map
Waukegan National Airport
Lake County

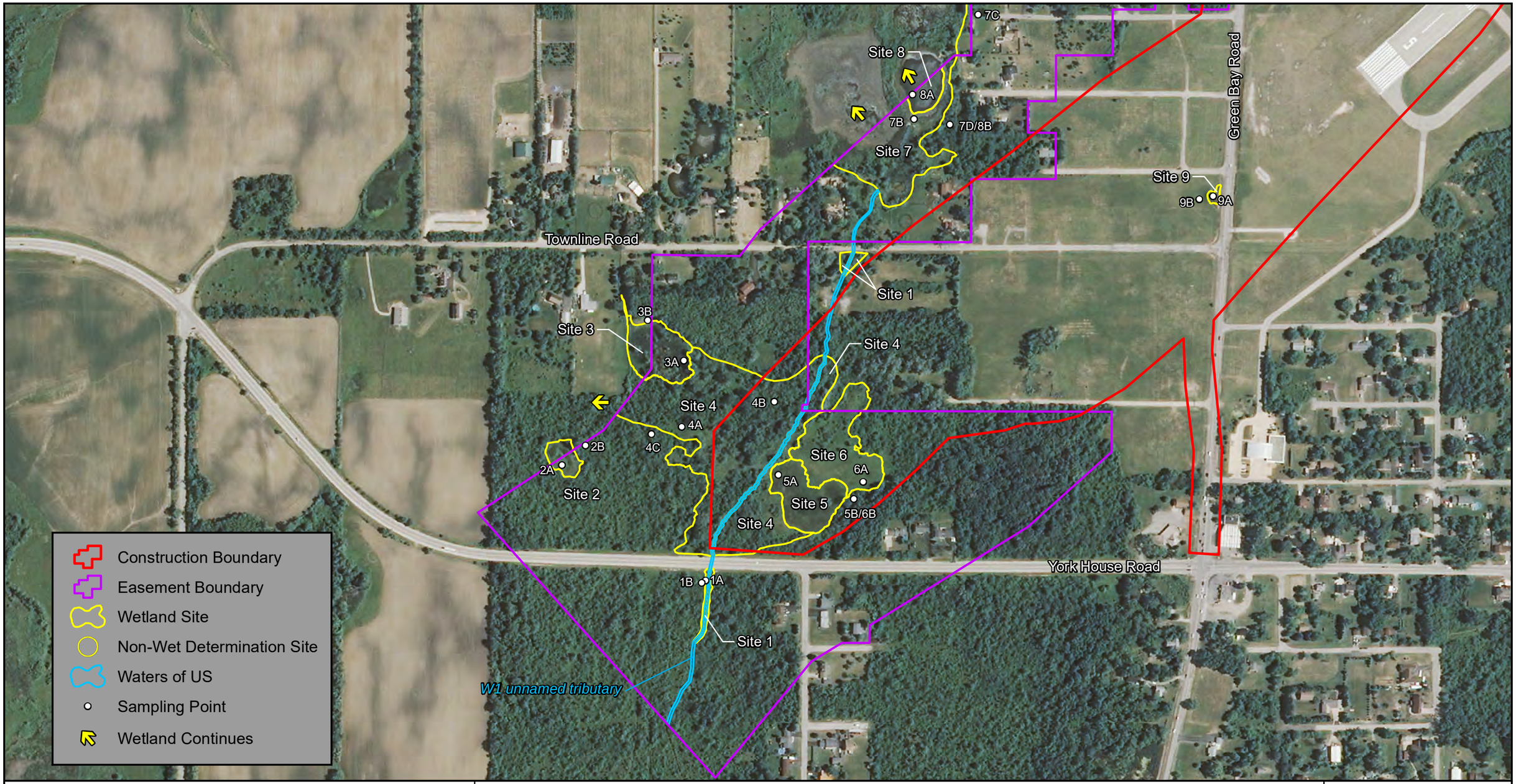
Seq. No: 19504

Meters 0 500

Feet 0 1,500

November 2015

N W E S



University of Illinois at Urbana-Champaign

ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

Figure 6A
Wetland Determination Map
Waukegan National Airport
Lake County

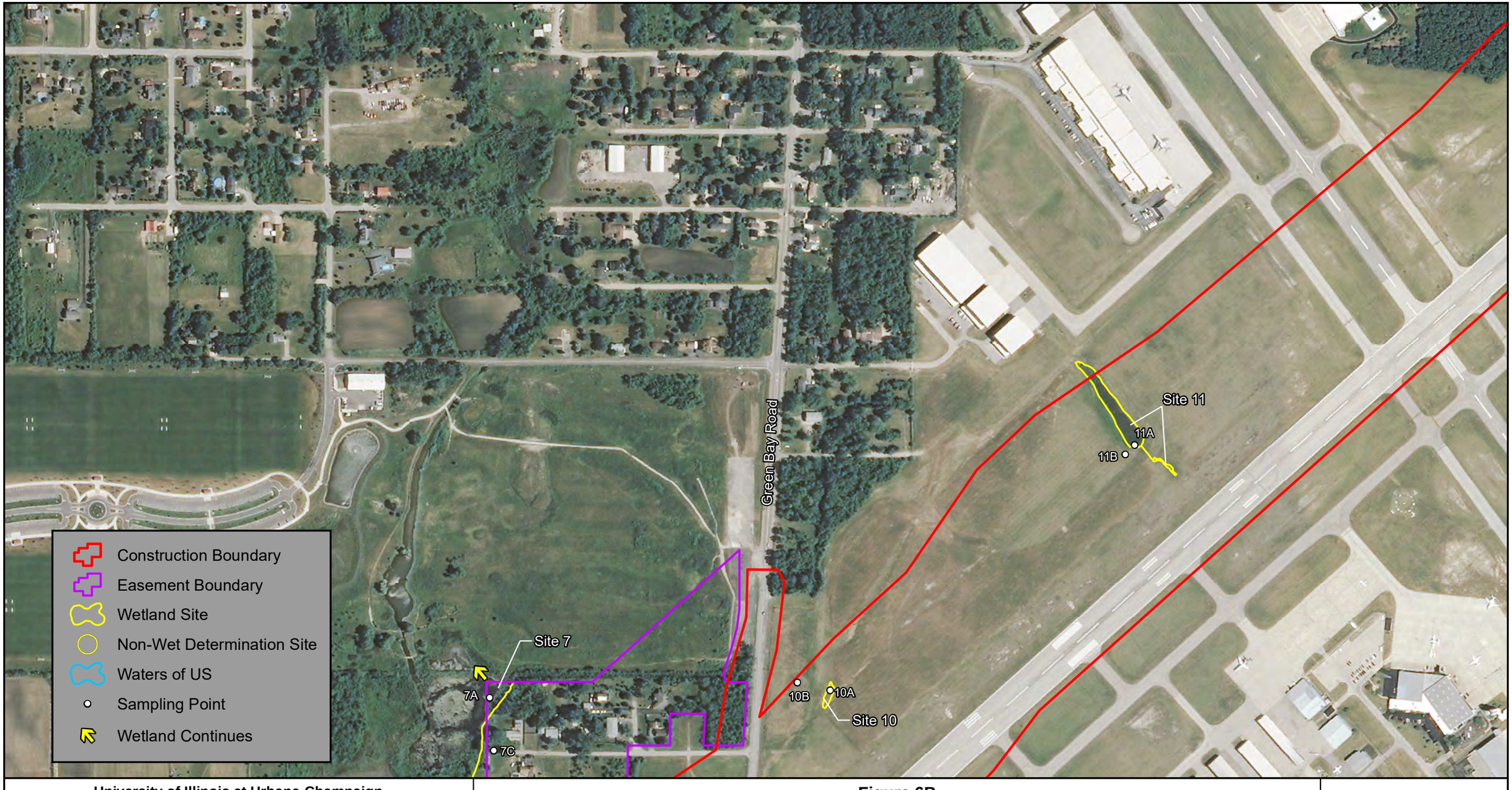
Seq. No: 19504

Meters 0 100

Feet 0 400

December 2015

N W E S



University of Illinois at Urbana-Champaign

ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

Figure 6B
Wetland Determination Map
Waukegan National Airport
Lake County

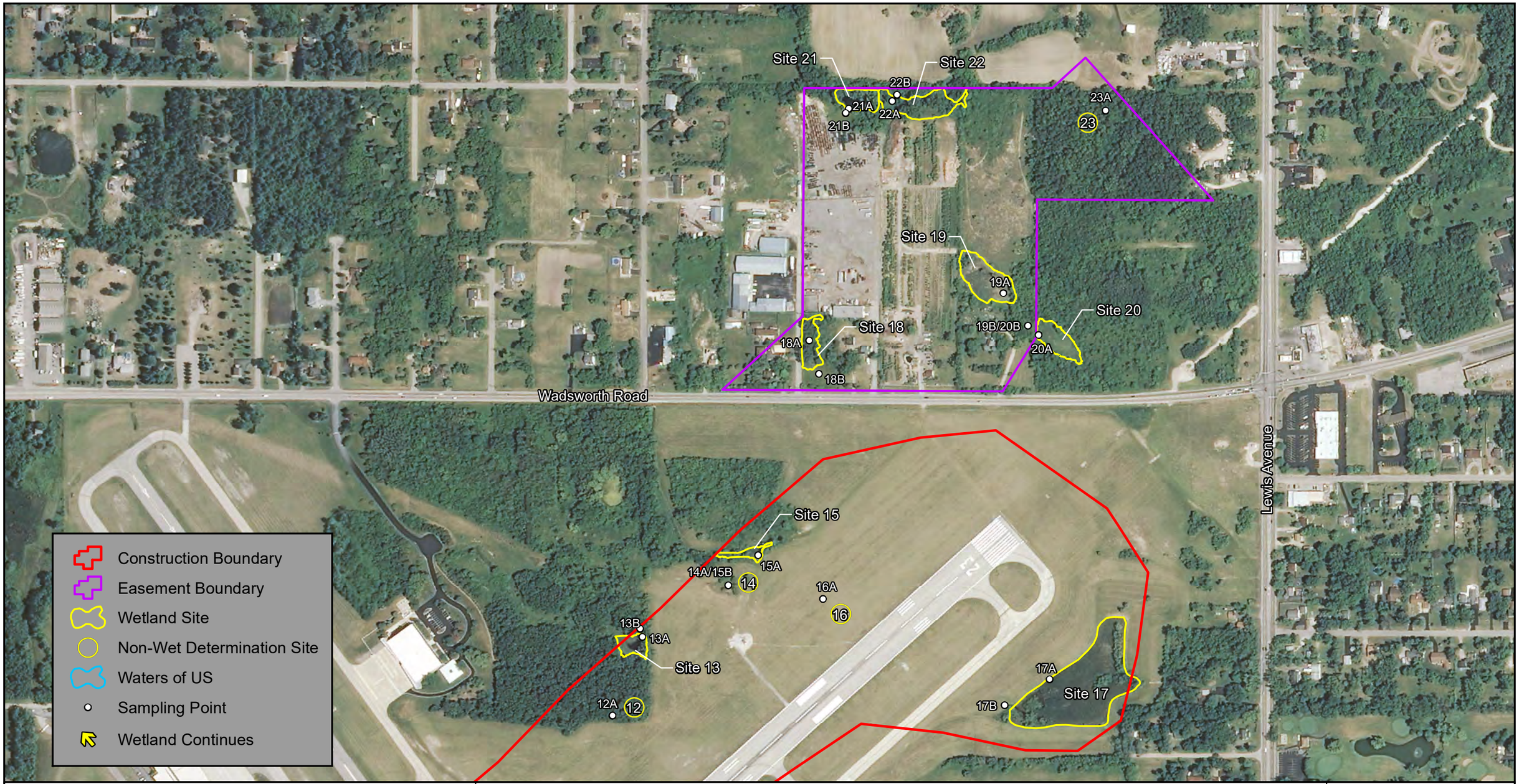
Seq. No: 19504

Meters 0 100

Feet 0 400

December 2015

N W E S



University of Illinois at Urbana-Champaign

ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

Figure 6C
Wetland Determination Map
Waukegan National Airport
Lake County

Seq. No: 19504

Meters 0 100

Feet 0 400

December 2015

N W E S

UGN Aquatic Resources Report (2025)

APPENDIX B: DATA FORMS AND TABLES



Appendix B-1

Stream Data Forms

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 57

Stream & Location: Waukegan National Airport, Lake Co., IL. UNT1, upstream location. **RM:** _ _ _._ **Date:** 06 / 20 / 25

Flows through Wetland AI toward Wetland 4. **Scorers Full Name & Affiliation:** A.M. Zelles & C.E. Gurley

River Code: _ _ _-_ _ _-_ _ _ **STORET #:** _ _ _ _ _ _ **Lat./ Long.:** (NAD 83 - decimal °) 42 . 413245 / 87 . 884017 **Office verified location** ☑

1] SUBSTRATE

Check *ONLY* **Two** substrate *TYPE BOXES*; estimate % or note every type present

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ ☐ BLDR /SLABS [10]	0%	0%	☐ ☐ HARDPAN [4]	0%	0%
☐ ☐ BOULDER [9]	0%	0%	☐ ☐ DETRITUS [3]	0%	0%
☐ ☐ COBBLE [8]	0%	4%	☐ ☐ MUCK [2]	0%	0%
☒ ☐ GRAVEL [7]	60%	15%	☐ ☑ SILT [2]	8%	50%
☐ ☐ SAND [6]	7%	30%	☐ ☐ ARTIFICIAL [0]	25%	1%
☐ ☐ BEDROCK [5]	0%	0%			

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☑ 3 or less [0]

Check ONE (*Or 2 & average*)

ORIGIN
- ☑ LIMESTONE [1]
- ☐ TILLS [1]
- ☑ WETLANDS [0]
- ☐ HARDPAN [0]
- ☐ SANDSTONE [0]
- ☐ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

EMBEDDEDNESS

SILT QUALITY
- ☐ HEAVY [-2]
- ☑ MODERATE [-1]
- ☐ NORMAL [0]
- ☐ FREE [1]
- ☐ EXTENSIVE [-2]
- ☐ MODERATE [-1]
- ☑ NORMAL [0]
- ☐ NONE [1]

Substrate 9.0 *Maximum 20*

Comments

Some bricks

2] INSTREAM COVER

Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

1	UNDERCUT BANKS [1]	0	POOLS > 70cm [2]	0	OXBOWS, BACKWATERS [1]
2	OVERHANGING VEGETATION [1]	0	ROOTWADS [1]	2	AQUATIC MACROPHYTES [1]
0	SHALLOWS (IN SLOW WATER) [1]	0	BOULDERS [1]	0	LOGS OR WOODY DEBRIS [1]
0	ROOTMATS [1]				

AMOUNT

Check ONE (*Or 2 & average*)
- ☐ EXTENSIVE >75% [11]
- ☑ MODERATE 25-75% [7]
- ☐ SPARSE 5-<25% [3]
- ☐ NEARLY ABSENT <5% [1]

Cover 10 *Maximum 20*

Comments

3] CHANNEL MORPHOLOGY

Check ONE in each category (*Or 2 & average*)

SINUOSITY
- ☐ HIGH [4]
- ☐ MODERATE [3]
- ☑ LOW [2]
- ☑ NONE [1]

DEVELOPMENT
- ☐ EXCELLENT [7]
- ☑ GOOD [5]
- ☑ FAIR [3]
- ☐ POOR [1]

CHANNELIZATION
- ☐ NONE [6]
- ☑ RECOVERED [4]
- ☐ RECOVERING [3]
- ☐ RECENT OR NO RECOVERY [1]

STABILITY
- ☐ HIGH [3]
- ☑ MODERATE [2]
- ☐ LOW [1]

Channel 11 *Maximum 20*

Comments

4] BANK EROSION AND RIPARIAN ZONE

Check **ONE** in each category for ***EACH BANK*** (*Or 2 per bank & average*)

River right looking downstream

EROSION L	EROSION R	
☑	☑	NONE / LITTLE [3]
☐	☐	MODERATE [2]
☐	☐	HEAVY / SEVERE [1]

RIPARIAN WIDTH L	RIPARIAN WIDTH R	
☑	☑	WIDE > 50m [4]
☐	☐	MODERATE 10-50m [3]
☐	☐	NARROW 5-10m [2]
☐	☐	VERY NARROW < 5m [1]
☐	☐	NONE [0]

FLOOD PLAIN QUALITY L	FLOOD PLAIN QUALITY R	
☐	☐	FOREST, SWAMP [3]
☑	☑	SHRUB OR OLD FIELD [2]
☐	☐	RESIDENTIAL, PARK, NEW FIELD [1]
☐	☐	FENCED PASTURE [1]
☐	☐	OPEN PASTURE, ROWCROP [0]

☐	☐	CONSERVATION TILLAGE [1]
☐	☐	URBAN OR INDUSTRIAL [0]
☐	☐	MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Riparian 9.0 *Maximum 10*

Comments

Stream formerly crossed by small bridge; support structure remains. Former residential development.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

Check **ONE** (*ONLY!*)
- ☐ > 1m [6]
- ☐ 0.7-<1m [4]
- ☐ 0.4-<0.7m [2]
- ☐ 0.2-<0.4m [1]
- ☑ < 0.2m [0]

CHANNEL WIDTH

Check ONE (*Or 2 & average*)
- ☑ POOL WIDTH > RIFFLE WIDTH [2]
- ☐ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply
- ☐ TORRENTIAL [-1]
- ☐ VERY FAST [1]
- ☐ FAST [1]
- ☐ MODERATE [1]
- ☑ SLOW [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current 3.0 *Maximum 12*

Comments Pool depth 13 in. OHWM width avg 5.3 feet

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH
- ☐ BEST AREAS > 10cm [2]
- ☑ BEST AREAS 5-10cm [1]
- ☐ BEST AREAS < 5cm [metric=0]

RUN DEPTH
- ☐ MAXIMUM > 50cm [2]
- ☑ MAXIMUM < 50cm [1]

RIFFLE / RUN SUBSTRATE
- ☐ STABLE (e.g., Cobble, Boulder) [2]
- ☑ MOD. STABLE (e.g., Large Gravel) [1]
- ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS
- ☐ NONE [2]
- ☑ LOW [1]
- ☐ MODERATE [0]
- ☐ EXTENSIVE [-1]

Riffle / Run 4.0 *Maximum 8*

Comments Run depth 5 in, riffle depth up to 4 in.

6] GRADIENT

(27 ft/mi) ☐ VERY LOW - LOW [2-4] ☐ MODERATE [6-10] ☑ HIGH - VERY HIGH [10-6]

DRAINAGE AREA (1.35 mi²)

%POOL: 30% **%GLIDE:** 10% **%RUN:** 10% **%RIFFLE:** 50%

Gradient 10 *Maximum 10*

A] SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
- ☒ WADE
- ☐ L. LINE
- ☐ OTHER

STAGE

1st -sample pass-		2nd
☐	HIGH	☐
☐	UP	☐
☒	NORMAL	☐
☐	LOW	☐
☐	DRY	☐

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☒ OTHER

100 meters

CLARITY

1st --sample pass--		2nd
☒	< 20 cm	☐
☐	20-<40 cm	☐
☐	40-70 cm	☐
☐	> 70 cm/ CTB	☐
☐	SECCHI DEPTH	☐

CANOPY

- ☒ > 85%- OPEN
- ☐ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

1st pass _____ cm

2nd _____ cm

C] RECREATION

POOL: AREA ☐ >100ft² DEPTH ☐ >3ft

Comment RE: Reach consistency/ Is reach typical of steam?*, Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

Assessed reach flows through a demolished former suburban development. Some concrete pads and partially demolished structures remain, including supports for a small bridge (bridge deck is gone) which used to carry a road over UNT1.

B] AESTHETICS

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ☐ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

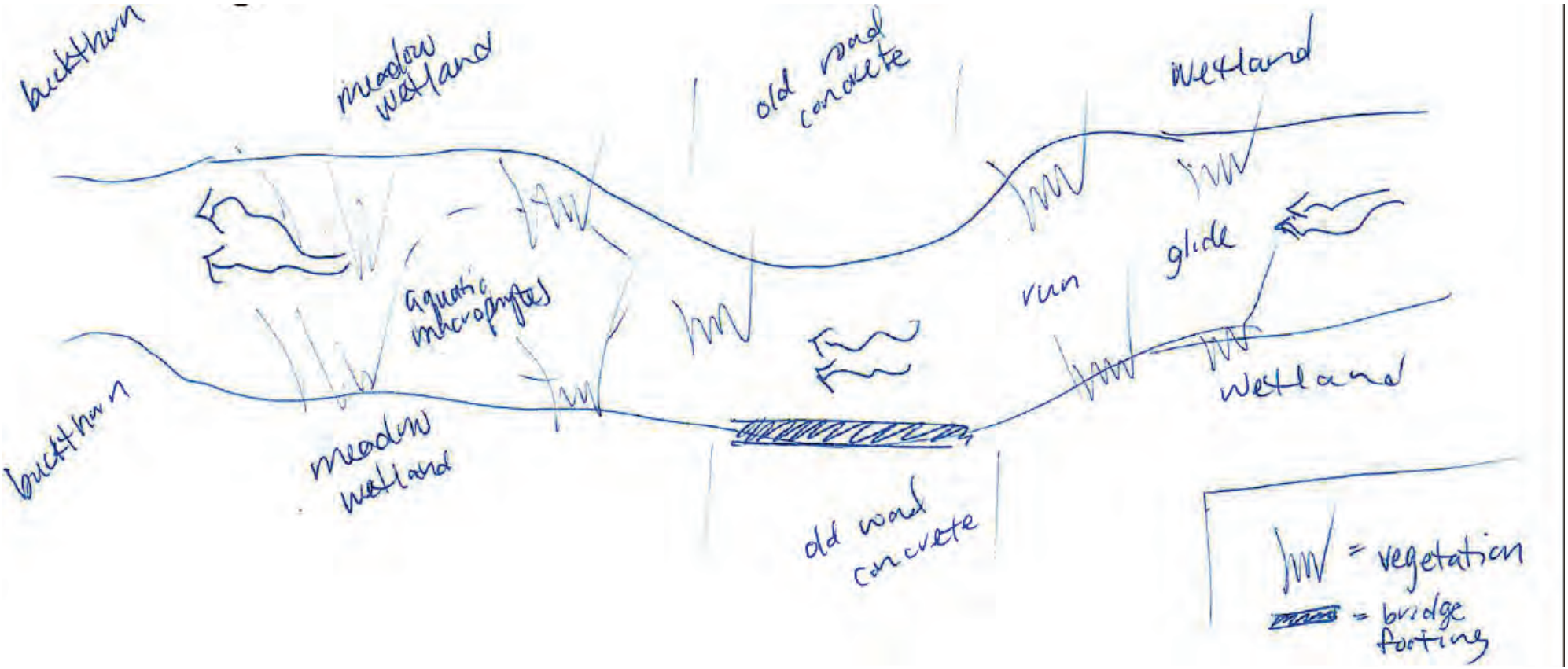
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

- $\bar{x}$ width
- $\bar{x}$ depth
- max. depth
- $\bar{x}$ bankfull width
- bankfull $\bar{x}$ depth
- W/D ratio
- bankfull max. depth
- floodprone x^2 width
- entrench. ratio

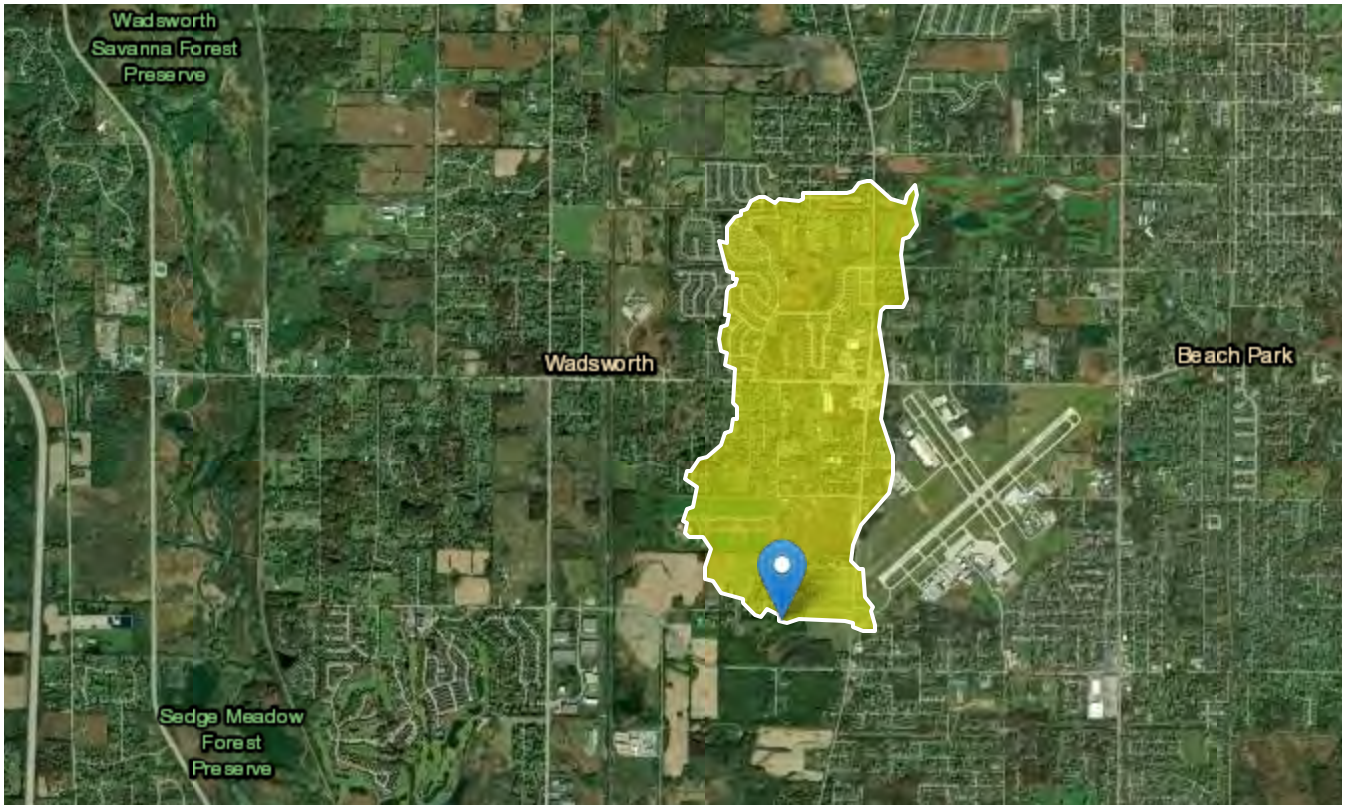
Legacy Tree:

Stream Drawing:



StreamStats Report: UNT1 to Des Plaines River (QHEI form location)

Region ID: IL
Workspace ID: IL20250812193140007000
Clicked Point (Latitude, Longitude): 42.41338, -87.88404
Time: 2025-08-12 14:32:06 -0500



Collapse All

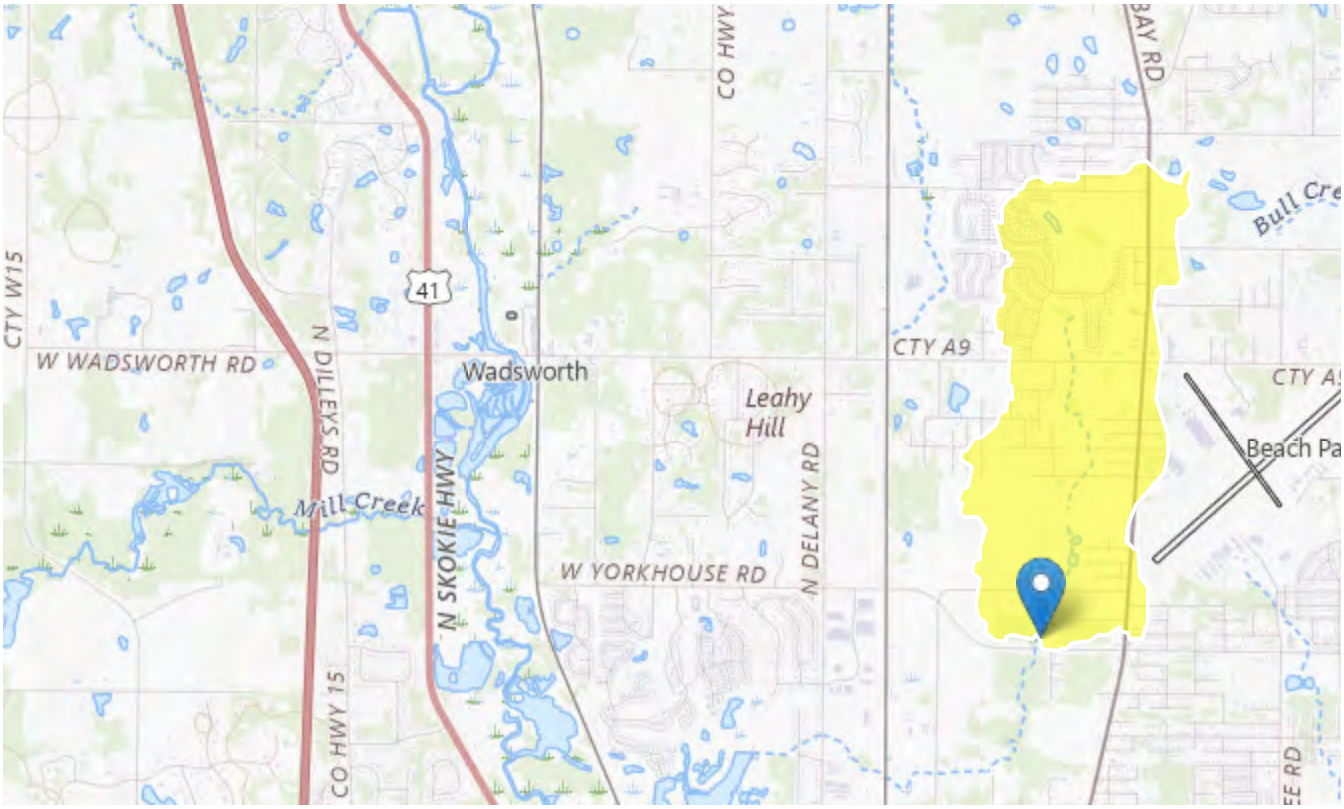
Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.35	square miles
RELIEF	Maximum - minimum elevation	61.2	feet

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor

StreamStats Report: UNT1 to Des Plaines River (Most downstream point within Project Area)

Workspace ID: IL20250916170435231000
Region ID: IL
Clicked Point (Latitude, Longitude): 42.41097, -87.88556
Time: 2025-09-16 12:05:02 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.499	square miles
RELIEF	Maximum - minimum elevation	65.1	feet

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor

Appendix B-2

Wetland Delineation Forms

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/19/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: A1

Investigator(s): C.E. Gurley & A.M. Zelles Section, Township, Range: S6 T45N R12E

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

Slope (%): 0 Lat: 42.412318 Long: -87.882777 Datum: NAD83

Soil Map Unit Name: 298A—Beecher silt loam, 0-2% slopes NWI classification: None

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Populus alba*	15	Yes	UPL
2.			
3.			
4.			
5.			
	15 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Juncus tenuis*	25	Yes	FAC
2. *Solidago canadensis*	25	Yes	FACU
3. *Phalaris arundinacea*	15	Yes	FACW
4. *Euthamia graminifolia*	10	No	FACW
5. *Echinochloa crus-galli*	10	No	FACW
6. *Lythrum salicaria*	10	No	OBL
7. *Scirpus cyperinus*	5	No	OBL
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	35	x 2 =	70
FAC species	25	x 3 =	75
FACU species	25	x 4 =	100
UPL species	15	x 5 =	75
Column Totals:	115 (A)		335 (B)

Prevalence Index = B/A = 2.91

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: A1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 2.5/1	100					Loamy/Clayey	
12-16	2.5Y 4/2	90	10YR 4/6	10	c	M	Loamy/Clayey	Prominent redox concentrations

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? Yes ___ No x Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/19/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: A2

Investigator(s): D.C. Clooney, S.K. Spence Section, Township, Range: S6 T45N R12E

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

Slope (%): 2 Lat: 42.412272 Long: -87.882707 Datum: NAD83

Soil Map Unit Name: 298A—Beecher silt loam, 0-2% slopes NWI classification: None

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Populus alba*	5	Yes	UPL
2.			
3.			
4.			
5.			
	5	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Solidago canadensis*	70	Yes	FACU
2. *Rhamnus cathartica*	10	No	FAC
3. *Populus alba*	5	No	UPL
4. *Viola sororia*	2	No	FAC
5. *Fragaria virginiana*	2	No	FACU
6. *Geum canadense*	2	No	FAC
7. *Juncus tenuis*	2	No	FAC
8. *Taraxacum officinale*	2	No	FACU
9. *Symphyotrichum lateriflorum*	1	No	FACW
10. *Erigeron strigosus*	1	No	FACU
	97	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Glechoma hederacea*	5	Yes	FACU
2.			
	5	=Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	1	x 2 =	2
FAC species	21	x 3 =	63
FACU species	80	x 4 =	320
UPL species	10	x 5 =	50
Column Totals:	112 (A)		435 (B)
Prevalence Index = B/A =			3.88

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: A2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	100					Loamy/Clayey	
13-15	10YR 5/1	60	10YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations
13-15	10YR 2/1	20					Loamy/Clayey	
13-15	10YR 5/3	20					Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/4/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: D1

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S29, T46N, R12E

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

Slope (%): 2-4 Lat: 42.429243 Long: -87.856584 Datum: NAD 83

Soil Map Unit Name: Ozaukee silt loam (530B) NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Cornus racemosa*	10	Yes	FAC
3. *Rhamnus cathartica*	5	No	FAC
4.			
5.			
	30 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Euthamia graminifolia*	40	Yes	FACW
2. *Symphyotrichum lateriflorum*	35	Yes	FACW
3. *Juncus tenuis*	15	No	FAC
4. *Solidago canadensis*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15')			
1. *Vitis riparia*	5	Yes	FACW
2.			
	5 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	30	x 3 =	90
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	135 (A)		320 (B)

Prevalence Index = B/A = 2.37

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: D1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	7.5YR 3/1	100					Loamy/Clayey	
7-18	7.5YR 5/2	80	7.5YR 5/6	20	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/5/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: D2

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S29, T46N, R12E

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

Slope (%): 2-4 Lat: 42.429022 Long: -87.856406 Datum: NAD 83

Soil Map Unit Name: Ozaukee silt loam (530B) NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Lotus corniculatus*	45	Yes	FACU
2. *Setaria glauca*	45	Yes	FAC
3. *Plantago lanceolata*	5	No	FACU
4. *Daucus carota*	5	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15')			
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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	5	x 5 =	25
Column Totals:	55 (A)		225 (B)

Prevalence Index = B/A = 4.09

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: D2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Loamy/Clayey	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/6/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: E1

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S31, T46N, R12E

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

Slope (%): 2-4 Lat: 42.429278 Long: -87.855400 Datum: NAD 83

Soil Map Unit Name: Ozaukee silt loam (530B) NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix interior*	15	Yes	FACW
2.			
3.			
4.			
5.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix interior*	20	Yes	FACW
2. *Cornus racemosa*	15	Yes	FAC
3. *Fraxinus pennsylvanica*	10	No	FACW
4. *Rhamnus cathartica*	10	No	FAC
5.			
	55	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Juncus tenuis*	50	Yes	FAC
2. *Euthamia graminifolia*	20	Yes	FACW
3. *Juncus torreyi*	15	No	FACW
4. *Solidago canadensis*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: 15')			
1. *Vitis riparia*	2	No	FACW
2.			
	2	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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	0	x 1 =	0
FACW species	82	x 2 =	164
FAC species	75	x 3 =	225
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	167 (A)		429 (B)

Prevalence Index = B/A = 2.57

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: E1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 3/2	100					Loamy/Clayey	
3-9	7.5YR 3/2	98	7.5YR 4/6	2	C	PL	Loamy/Clayey	Prominent redox concentrations
9-12	10YR 5/1	55	10YR 5/8	45	C	M	Mucky Loam/Clay	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ? Coast Prairie Redox (A16)
- ___ 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: Clay

Depth (inches): 12

Hydric Soil Present? **Yes** X **No** ___

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/6/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: E2

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S29, T46N, R12E

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

Slope (%): 2-4 Lat: 42.429288 Long: -87.855300 Datum: NAD 83

Soil Map Unit Name: Ozaukee silt loam (530B) NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	20	Yes	FACW
2.			
3.			
4.			
5.			
	20 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Lotus corniculatus*	60	Yes	FACU
2. *Euthamia graminifolia*	20	Yes	FACW
3. *Poa pratensis*	10	No	FAC
4. *Daucus carota*	5	No	UPL
5. *Fragaria vesca*	5	No	UPL
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15')			
1. *Vitis riparia*	2	No	FACW
2.			
	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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	42	x 2 =	84
FAC species	10	x 3 =	30
FACU species	60	x 4 =	240
UPL species	10	x 5 =	50
Column Totals:	122 (A)		404 (B)

Prevalence Index = B/A = 3.31

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: E2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/2	100					Sandy	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/5/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: F1

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S29, T46N, R12E

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

Slope (%): 2-4 Lat: 42.429688 Long: -87.855750 Datum: NAD 83

Soil Map Unit Name: Beecher silt loam (298B) NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix interior*	60	Yes	FACW
2. *Populus deltoides*	20	Yes	FAC
3. *Fraxinus pennsylvanica*	20	Yes	FACW
4.			
5.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	20	Yes	FACW
2. *Salix interior*	15	Yes	FACW
3.			
4.			
5.			
	35	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa palustris*	30	Yes	FACW
2. *Euthamia graminifolia*	20	Yes	FACW
3. *Juncus tenuis*	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70	=Total Cover	
Woody Vine Stratum (Plot size: 15')			
1. *Vitis riparia*	5	Yes	FACW
2.			
	5	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (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	0	x 1 =	0
FACW species	170	x 2 =	340
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	210 (A)		460 (B)

Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: F1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					Loamy/Clayey	
12-18	10YR 4/2	75	5YR 4/6	5	C	M	Mucky Loam/Clay	Prominent redox concentrations
			7.5YR 5/6	15	C	M		Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:
Drainage swale north

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/5/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: F2

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S29, T46N, R12E

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

Slope (%): 2-4 Lat: 42.429887 Long: -87.855704 Datum: NAD 83

Soil Map Unit Name: Beecher silt loam (298B) NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	30	Yes	FACW
2. *Populus deltoides*	30	Yes	FAC
3. *Acer negundo*	30	Yes	FAC
4. *Rhamnus cathartica*	10	No	FAC
5.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rhamnus cathartica*	100	Yes	FAC
2.			
3.			
4.			
5.			
	100	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solidago canadensis*	30	Yes	FACU
2. *Rhamnus cathartica*	10	No	FAC
3. *Fraxinus pennsylvanica*	10	No	FACW
4. *Clintonia borealis*	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	52	=Total Cover	
Woody Vine Stratum (Plot size: 15')			
1. *Vitis riparia*	2	No	FACW
2.			
	2	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	42	x 2 =	84
FAC species	182	x 3 =	546
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	254 (A)		750 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Note, C. borealis was not observed in 2025

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: F2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5YR 2.5/1	100					Loamy/Clayey	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: gravel

Depth (inches): 12

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Former homestead - restrictive layer of gravel prevented deeper investigation.
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/5/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: G1

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S29, T46N, R12E

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

Slope (%): 2-4 Lat: 42.429979 Long: -87.856044 Datum: NAD 83

Soil Map Unit Name: Ozaukee silt loam (530C), Beecher silt loam (298B) NWI classification: None

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 X No ____

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

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

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Populus deltoides*	5	Yes	FAC
3.			
4.			
5.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Cornus racemosa*	10	Yes	FAC
3. *Cornus stolonifera*	5	Yes	FACW
4.			
5.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phalaris arundinacea*	20	Yes	FACW
2. *Juncus tenuis*	20	Yes	FAC
3. *Poa palustris*	20	Yes	FACW
4. *Juncus torreyi*	10	No	FACW
5. *Euthamia graminifolia*	10	No	FACW
6.			
7.			
8.			
9.			
10.			
	80	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Fragaria vesca*	5	Yes	UPL
2.			
	5	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	35	x 3 =	105
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	125 (A)		300 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: G1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	100					Mucky Loam/Clay	
9-18	10YR 4/2	90	7.5YR 4/6	10	C	M	Mucky Loam/Clay	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes X No ___ Depth (inches): 4

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/5/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: G2

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S29, T46N, R12E

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

Slope (%): 2-4 Lat: 42.429930 Long: -87.855927 Datum: NAD 83

Soil Map Unit Name: Beecher silt loam (298B) NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	30	Yes	FACW
2. *Populus deltoides*	30	Yes	FAC
3. *Acer negundo*	30	Yes	FAC
4. *Rhamnus cathartica*	10	No	FAC
5.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rhamnus cathartica*	100	Yes	FAC
2.			
3.			
4.			
5.			
	100	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solidago canadensis*	30	Yes	FACU
2. *Rhamnus cathartica*	10	No	FAC
3. *Fraxinus pennsylvanica*	10	No	FACW
4. *Clintonia borealis*	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	52	=Total Cover	
Woody Vine Stratum (Plot size: 15')			
1. *Vitis riparia*	2	No	FACW
2.			
	2	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	42	x 2 =	84
FAC species	182	x 3 =	546
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	254 (A)		750 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Note, C. borealis was not observed in 2025

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: G2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5YR 2.5/1	100					Loamy/Clayey	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: gravel

Depth (inches): 12

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Former homestead - restrictive layer of gravel prevented deeper investigation.
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: July 16, 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: G3

Investigator(s): Marion E. Wells & Christine E. Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 5 Lat: 42.430022 Long: -87.856608 Datum: NAD83

Soil Map Unit Name: 530C—Ozaukee silt loam, 4 to 6 percent slopes (not hydric) NWI classification: none

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 X No ____
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
20+ inch rain event last night, river flood warning ongoing. Wetland G does not extend this far west; there is however a pipe outlet into the drainage swale that is fully vegetated with grass.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juniperus virginiana*	5	Yes	FACU
2.			
3.			
4.			
5.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Cornus racemosa*	15	Yes	FAC
2. *Rhamnus cathartica*	15	Yes	FAC
3.			
4.			
5.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Symphyotrichum lanceolatum*	20	Yes	FAC
2. *Agrostis capillaris*	20	Yes	FAC
3. *Dactylis glomerata*	20	Yes	FACU
4. *Melilotus albus*	15	No	FACU
5. *Symphyotrichum novae-angliae*	5	No	FACW
6. *Achillea millefolium*	5	No	FACU
7. *Fragaria virginiana*	5	No	FACU
8. *Agrimonia gryposepala*	5	No	FACU
9.			
10.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	70	x 3 =	210
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	130 (A)		440 (B)
Prevalence Index = B/A =			3.38

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: G3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 4/2	100					Loamy/Clayey	
4-18	10Y 6/1	30	10YR 4/6	30	C	M	Loamy/Clayey	Prominent redox concentrations

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

4-18 inchesalso with 60% 2.5Y4/2 (clay)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes x No ___ Depth (inches): 0.25

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? Yes ___ No x Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Drainage swale flows through area. Surface water likely due to heavy rain last night.

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/5/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: H1

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S29, T46N, R12E

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

Slope (%): 2-4 Lat: 42.430201 Long: -87.857022 Datum: NAD 83

Soil Map Unit Name: Ozaukee silt loam (530B) NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	10	Yes	FACW
2.			
3.			
4.			
5.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Cornus racemosa*	10	Yes	FAC
3.			
4.			
5.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa palustris*	30	Yes	FACW
2. *Euthamia graminifolia*	20	Yes	FACW
3. *Juncus tenuis*	20	Yes	FAC
4. *Pycnanthemum virginianum*	15	No	FACW
5. *Phalaris arundinacea*	10	No	FACW
6.			
7.			
8.			
9.			
10.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	125 (A)		280 (B)

Prevalence Index = B/A = 2.24

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: H1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					Mucky Loam/Clay	
5-16	10YR 4/2	90	10YR 4/6	10	C	M	Mucky Loam/Clay	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): 2
Water Table Present?	Yes	___	No	___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:
hummocks present, wetter areas throughout with standing water.

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/5/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: H2

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S29, T46N, R12E

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

Slope (%): 2-4 Lat: 42.430015 Long: -87.857112 Datum: NAD 83

Soil Map Unit Name: Ozaukee silt loam (530B) NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Juniperus communis*	2	Yes	UPL
2. *Cornus racemosa*	5	Yes	FAC
3.			
4.			
5.			
	7	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa palustris*	50	Yes	FACW
2. *Euthamia graminifolia*	20	Yes	FACW
3. *Solidago rigida*	15	No	FACU
4. *Cirsium sp.*	10	No	FAC
5. *Symphyotrichum sp.*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	20	x 3 =	60
FACU species	15	x 4 =	60
UPL species	2	x 5 =	10
Column Totals:	107 (A)		270 (B)

Prevalence Index = B/A = 2.52

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: H2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Mucky Loam/Clay	with gravel
8-16	10YR 4/3	95	10YR 5/6	5	C	M	Mucky Loam/Clay	Distinct redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:
hummocks present, wetter areas throughout with standing water.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: July 17, 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: H3

Investigator(s): Alex Zelles, Alex Tadda Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0 Lat: 42.429908 Long: -87.85735367 Datum: NAD83

Soil Map Unit Name: 530B—Ozaukee silt loam, 2 to 4 percent slopes (not hydric) NWI classification: none

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

Are Vegetation x , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
20+ inch rain event two days prior, river flood warning ongoing.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2. *Cornus racemosa*	5	Yes	FAC
3. *Cornus racemosa*	5	Yes	FAC
4. *Pyrus calleryana*	3	No	UPL
5.			
	18	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Agrostis gigantea*	30	Yes	FACW
2. *Scirpus pendulus*	30	Yes	OBL
3. *Juncus tenuis*	25	Yes	FAC
4. *Agrimonia parviflora*	7	No	FACW
5. *Carex vulpinoidea*	5	No	FACW
6. *Euthamia graminifolia*	5	No	FACW
7. *Penstemon digitalis*	3	No	FAC
8. *Prunella vulgaris*	2	No	FAC
9. *Bidens frondosa*	1	No	FACW
10. *Rumex crispus*	1	No	FAC
	109	=Total Cover	
Woody Vine Stratum (Plot size: 15')			
1. *Vitis riparia*	2	No	FACW
2.			
	2	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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	30	x 1 =	30
FACW species	55	x 2 =	110
FAC species	41	x 3 =	123
FACU species	0	x 4 =	0
UPL species	3	x 5 =	15
Column Totals:	129 (A)		278 (B)

Prevalence Index = B/A = 2.16

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: H3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/1	100					Loamy/Clayey	
5-18	10YR 3/1	85	10YR 4/6	15	C	M	Loamy/Clayey	Prominent redox concentrations

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes x	No ___	Depth (inches): 1
Water Table Present?	Yes x	No ___	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Rain event 2 days prior.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: July 16, 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: H4

Investigator(s): Marion Wells, Alex Tadda, Christine Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 1 Lat: 42.429908 Long: -87.857354 Datum: NAD83

Soil Map Unit Name: 530B—Ozaukee silt loam, 2 to 4 percent slopes (not hydric) NWI classification: none

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

Are Vegetation x , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Vegetation cleared in 2023. 20+ inch rain event last night, river flood warning ongoing.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Agrostis gigantea*	30	Yes	FACW
2. *Cornus racemosa*	15	Yes	FAC
3. *Prunella vulgaris*	15	Yes	FAC
4. *Penstemon digitalis*	4	No	FAC
5. *Rudbeckia hirta*	10	No	FACU
6. *Vitis riparia*	10	No	FACW
7.			
8.			
9.			
10.			
	84 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	34	x 3 =	102
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	84 (A)		222 (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: H4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/1	100					Loamy/Clayey	
14-18	10YR 4/1	60	10YR 4/6	20	C	M	Loamy/Clayey	Also with 20% 10YR 5/2 (C, M)

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 7/17/2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: I1

Investigator(s): A.M.Zelles & A.M. Tadda Section, Township, Range: S31, T46N, R12E

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

Slope (%): 2-4 Lat: 42.429542 Long: -87.857028 Datum: NAD83

Soil Map Unit Name: 530B—Ozaukee silt loam, 2-4% slopes NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Obstruction (tree/shrub) removals occurred in 2023 as part of airport maintenance and operations.Vegetation was updated from 2019 delineation, but a soil pit and profile was not completed. Boundary was confirmed from prior delineation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	10	Yes	FAC
2. *Cornus sericea*	3	Yes	FACW
3. *Populus alba*	1	No	UPL
4.			
5.			
	14 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Scirpus atrovirens*	5	Yes	OBL
2. *Alisma subcordatum*	3	Yes	OBL
3. *Epilobium coloratum*	3	Yes	OBL
4. *Eleocharis obtusa*	2	No	OBL
5. *Scirpus cyperinus*	2	No	OBL
6.			
7.			
8.			
9.			
10.			
	15 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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	15	x 1 =	15
FACW species	3	x 2 =	6
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	1	x 5 =	5
Column Totals:	29 (A)		56 (B)

Prevalence Index = B/A = 1.93

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Obstruction (tree/shrub) removals occurred in 2023 as part of airport maintenance and operations. Beyond data point wetland is scrub/shrub.

SOIL

Sampling Point: I1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/1	90	7.5YR 4/6	10	C	M	Loamy/Clayey	Distinct redox concentrations
4-11	7.5YR 2.5/1	100					Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Soil is presumed to be similar from 2019 delineation based on nearby data point soil profiles (soi profile was not examined).

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 2
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:
Did not determine presence/absence of water table or saturation.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 7/17/2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: I2

Investigator(s): C.E.Gurley & M.E.Wells Section, Township, Range: S31, T46N, R12E

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

Slope (%): 0 Lat: 42.429769 Long: -87.857387 Datum: NAD83

Soil Map Unit Name: 530B—Ozaukee silt loam, 2-4% slopes NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Obstruction (tree/shrub) removals occurred in 2023 as part of airport maintenance and operations.Vegetation was updated from 2019 delineation, but a soil pit and profile was not completed.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	5	Yes	FAC
2. *Rhamnus cathartica*	3	Yes	FAC
3. *Rosa multiflora*	3	Yes	FACU
4.			
5.			
	11 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Lolium perenne*	30	Yes	FACU
2. *Agrostis gigantea*	10	No	FACW
3. *Solidago canadensis*	10	No	FACU
4. *Dipsacus laciniatus*	3	No	UPL
5. *Rudbeckia hirta*	2	No	FACU
6.			
7.			
8.			
9.			
10.			
	55 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	2	No	FACW
2.			
	2 =Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	12	x 2 =	24
FAC species	8	x 3 =	24
FACU species	45	x 4 =	180
UPL species	3	x 5 =	15
Column Totals:	68 (A)		243 (B)

Prevalence Index = B/A = 3.57

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Obstruction (tree/shrub) removals occurred in 2023 as part of airport maintenance and operations.

SOIL

Sampling Point: I2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Loamy/Clayey	
8-16	10YR 4/3	95	10YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Soil is presumed to be similar from 2019 delineation based on nearby data point soil profiles (soi profile was not examined).

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:
Did not determine presence/absence of water table or saturation.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: June 18, 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: J3

Investigator(s): Marion Wells, Alex Tadda, Christine Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0 Lat: 42.42847475 Long: -87.85749248 Datum: NAD 83

Soil Map Unit Name: 232A - Ashkum silty clay loam, 0 to 2 percent slopes NWI classification: none

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes x No ____
Wetland Hydrology Present? Yes x No ____

Is the Sampled Area within a Wetland? **Yes** x **No** ____

Remarks:
On problematic soils: this data point meets the indicator for problematic hydric soils of Recently Developed Wetlands.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	3	Yes	FACW
2. *Cornus racemosa*	1	Yes	FAC
3. *Rosa multiflora*	1	Yes	FACU
4. *Rhamnus cathartica*	1	Yes	FAC
5.			
	6 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Equisetum arvense*	65	Yes	FAC
2. *Phalaris arundinacea*	10	No	FACW
3. *Bouteloua curtipendula*	10	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	85 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1. *Vitis riparia*	1	No	FACW
2.			
	1 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	14	x 2 =	28
FAC species	67	x 3 =	201
FACU species	1	x 4 =	4
UPL species	10	x 5 =	50
Column Totals:	92 (A)		283 (B)
Prevalence Index = B/A =			3.08

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
A. sativea is from the planted cover crops.

SOIL

Sampling Point: J3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/1	100					Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** x **No** ___

Remarks:

This wetland has likely expanded recently due to removal of shrubs and woody vegetation and may not have had enough time to develop hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes x No ___ Depth (inches): 6

Wetland Hydrology Present? **Yes** x **No** ___

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

Remarks:

See monitoring data for all FQA species.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: June 18, 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: J4

Investigator(s): Christine Gurley and Alex Zelles Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0 Lat: 42.42853836 Long: -87.85750816 Datum: NAD 83

Soil Map Unit Name: 232A - Ashkum silty clay loam, 0 to 2 percent slopes 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	5	Yes	FAC
2. *Cornus racemosa*	2	Yes	FAC
3.			
4.			
5.			
	7 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bouteloua curtipendula*	90	Yes	UPL
2. *Rudbeckia hirta*	5	No	FACU
3. *Dipsacus laciniatus*	2	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	97 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1. *Vitis riparia*	1	No	FACW
2.			
	1 =Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	1	x 2 =	2
FAC species	7	x 3 =	21
FACU species	5	x 4 =	20
UPL species	92	x 5 =	460
Column Totals:	105 (A)		503 (B)
Prevalence Index = B/A =			4.79

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
A. sativea is from the planted cover crops.

SOIL

Sampling Point: J4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 4/1	100					Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: July 16, 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: J5

Investigator(s): Marion Wells, Alex Tadda, Christine Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0 Lat: 42.428494 Long: -87.857087 Datum: NAD83

Soil Map Unit Name: 232A - Ashkum silty clay loam, 0 to 2 percent slopes NWI classification: none

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

Are Vegetation x , Soil ____ , or Hydrology ____ significantly disturbed? Are "N X Yes ____ No x

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

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

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

Remarks:
Vegetation cleared in 2023. 20+ inch rain event last night, river flood warning ongoing. On problematic soils: this data point meets the indicator for problematic hydric soils of Recently Developed Wetlands.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Carex lacustris*	87	Yes	OBL
2. *Vitis riparia*	3	No	FACW
3. *Apocynum cannabinum*	3	No	FAC
4. *Solidago canadensis*	3	No	FACU
5. *Helianthus grosseserratus*	1	No	FACW
6. *Cornus racemosa*	1	No	FAC
7. *Dipsacus laciniatus*	1	No	UPL
8. *Euthamia graminifolia*	1	No	FACW
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15')			
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	87	x 1 =	87
FACW species	5	x 2 =	10
FAC species	4	x 3 =	12
FACU species	3	x 4 =	12
UPL species	1	x 5 =	5
Column Totals:	100 (A)		126 (B)

Prevalence Index = B/A = 1.26

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant sedge species could not be identified due to lack of inflorescences; further investigation may be needed in the fall.

SOIL

Sampling Point: J5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/1	100					Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** x **No** ___

Remarks:

This wetland has likely expanded recently due to removal of shrubs and woody vegetation, and may not have had enough time to develop hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Surface water nearby, may be due to extreme rain event. Top 1-2 inches of soil saturated only, not saturated 3-18, indicating saturation is due to runoff at the surface rather than high water table.

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/5/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: L1

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0-2 Lat: 42.428117 Long: -87.856944 Datum: NAD 83

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Typha angustifolia*	45	Yes	OBL
2. *Phragmites australis*	45	Yes	FACW
3. *Phalaris arundinacea*	5	No	FACW
4. *Eleocharis palustris*	3	No	OBL
5. *Lemna minor*	2	No	OBL
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15')			
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	50	x 1 =	50
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		150 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: L1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Muck	
10-18	10YR 2/1	90	10YR 4/6	10	C	M	Mucky Loam/Clay	Prominent redox concentrations
								with gravel

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	2	
Water Table Present?	Yes X	No ___	Depth (inches):	12	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	0	**Wetland Hydrology Present?** **Yes** X **No** ___

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Waukegan National Airport (UGN) City/County: Waukegan, Lake County Sampling Date: 9/5/2019

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: L2

Investigator(s): Heather Lacey & Alex Zelles, CMT Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0-2 Lat: 42.428184 Long: -87.856968 Datum: NAD 83

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Poa pratensis*	60	Yes	FAC
2. *Cirsium arvense*	35	Yes	FACU
3. *Cichorium intybus*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15')			
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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	100 (A)		340 (B)

Prevalence Index = B/A = 3.40

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: L2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	100					Loamy/Clayey	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: S1

Investigator(s): C.E. Gurley, A.M. Zelles Section, Township, Range: S31, T46N, R12E

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

Slope (%): 3 Lat: 42.41838 Long: -87.876857 Datum: NAD83

Soil Map Unit Name: 530B—Ozaukee silt loam, 2-4% slopes NWI classification: None

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex scoparia*	60	Yes	FACW
2. *Poa palustris*	20	Yes	FACW
3. *Festuca rubra*	15	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	95 (A)		220 (B)

Prevalence Index = B/A = 2.32

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: S1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	99	10YR 4/4	1	C	M	Loamy/Clayey	Distinct redox concentrations
8-16	5Y 4/1	80	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
8-16	5Y 2.5/1	20						

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? Yes ___ No x Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: UGN - Phase 5 Fence | City/County: Waukegan/Lake Co. | Sampling Date: 7/24/2020

Applicant/Owner: Waukegan Port District - Airport | State: IL | Sampling Point: S2 upl

Investigator(s): Patrick VerHalen, Alexandra Zelles | Section, Township, Range: S31, T46N, R12E

Landform (hillside, terrace, etc.): Microslope | Local relief (concave, convex, none): Convex

Slope (%): 2-4 | Lat: 42.418320 | Long: -87.876939 | Datum: NAD 83

Soil Map Unit Name: 530B - Ozaukee silt loam | 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 ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. *Poa pratensis*	70	Yes	FAC
2. *Daucus carota*	20	Yes	UPL
3. *Hieracium caespitosum*	5	No	UPL
4. *Trifolium repens*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 30' radius)			
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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	5	x 4 =	20
UPL species	25	x 5 =	125
Column Totals:	100 (A)		355 (B)
Prevalence Index = B/A =			3.55

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No X

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: S2 upl

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 2/1	100					Loamy/Clayey	Silty clay loam
14-18	10YR 4/2	80	10YR 4/4	2	C	M		Distinct redox concentrations
	10YR 2/1	20						

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: UGN - Phase 5 Fence | City/County: Waukegan/Lake Co. | Sampling Date: 7/24/2020

Applicant/Owner: Waukegan Port District - Airport | State: IL | Sampling Point: T1 wet

Investigator(s): Patrick VerHalen, Alexandra Zelles | Section, Township, Range: S31, T46N, R12E

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 0-2 | Lat: 42.419444 | Long: -87.876806 | Datum: NAD 83

Soil Map Unit Name: 298A - Beecher silt loam | 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Forested primarily with meadow fringe on southern boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	70	Yes	FACW
2. *Populus deltoides*	15	No	FAC
3.			
4.			
5.			
	85	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2. *Rhamnus cathartica*	2	Yes	FAC
3.			
4.			
5.			
	7	=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Acer saccharinum*	2	No	FACW
2. *Impatiens capensis*	2	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	4	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
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	0	x 1 =	0
FACW species	79	x 2 =	158
FAC species	17	x 3 =	51
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	96 (A)		209 (B)

Prevalence Index = B/A = 2.18

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: T1 wet

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Loamy/Clayey	Silty clay
8-11	10YR 2/1	100					Loamy/Clayey	
11-20	2.5Y 2.5/1	98	10YR 5/8	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 18	**Wetland Hydrology Present?**	**Yes** X **No** ___

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

Remarks:
Water marks 18"; moss lines

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: UGN - Phase 5 Fence | City/County: Waukegan/Lake Co. | Sampling Date: 7/24/2020

Applicant/Owner: Waukegan Port District - Airport | State: IL | Sampling Point: T2 upl

Investigator(s): Patrick VerHalen, Alexandra Zelles | Section, Township, Range: S31, T46N, R12E

Landform (hillside, terrace, etc.): Slope | Local relief (concave, convex, none): Concave

Slope (%): 2-4 | Lat: 42.419232 | Long: -87.876962 | Datum: NAD 83

Soil Map Unit Name: 530B - Ozaukee silt loam | 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 ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Morus alba*	30	Yes	FAC
2.			
3.			
4.			
5.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Dactylis glomerata*	45	Yes	FACU
2. *Phleum pratense*	43	Yes	FACU
3. *Viola pubescens*	5	No	FACU
4. *Trifolium repens*	5	No	FACU
5. *Oxalis stricta*	2	No	FACU
6.			
7.			
8.			
9.			
10.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	130 (A)		490 (B)

Prevalence Index = B/A = 3.77

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No X

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: T2 upl

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					Loamy/Clayey	Silty clay loam
14-16	10YR 3/1	99	10YR 4/4	1	C	M	Loamy/Clayey	Distinct redox concentrations
			10YR 5/6	3	C	M		Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Waukegan Natl. Airport - Environmental Assessment Ph 3 City/County: Waukegan, Lake Co. Sampling Date: June 19, 2024

Applicant/Owner: UGN Airport State: IL Sampling Point: X1

Investigator(s): A.M. Zelles & C.E. Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0 Lat: 42.42463571N Long: -87.86490487W Datum: NAD 83

Soil Map Unit Name: Beecher silt loam, 0 to 2 percent slopes NWI classification: partially Freshwater Pond

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus alba*	10	Yes	FACW
2. *Populus deltoides*	10	Yes	FAC
3.			
4.			
5.			
	20 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	10	Yes	FACW
2. *Impatiens capensis*	5	Yes	FACW
3. *Alisma subcordatum*	5	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1. *Vitis riparia*	2	No	FACW
2.			
	2 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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	5	x 1 =	5
FACW species	27	x 2 =	54
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	42 (A)		89 (B)

Prevalence Index = B/A = 2.12

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: X1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/1	98	10YR 5/1	2	D	M	Mucky Loam/Clay	silty texture

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Mg - soil secretion - Faint depletion after soil dried out.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 11
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Waukegan Natl. Airport - Environmental Assessment Ph 3 City/County: Waukegan, Lake Co. Sampling Date: June 19, 2024

Applicant/Owner: UGN Airport State: IL Sampling Point: X2

Investigator(s): A.M. Zelles & C.E. Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0 Lat: 42.42481278N Long: -87.86479327W Datum: NAD 83

Soil Map Unit Name: 530B - Ozaukee silt loam, 2 to 4 percent slopes 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 ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Recent brush and tree removal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Pyrus calleryana*	3	Yes	UPL
2. *Prunus serotina*	3	Yes	FACU
3. *Rosa multiflora*	3	Yes	FACU
4. *Quercus velutina*	3	Yes	UPL
5.			
	12 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Avena sativa*	90	Yes	UPL
2. *Phalaris arundinacea*	5	No	FACW
3. *Rumex crispus*	2	No	FAC
4. *Cirsium arvense*	1	No	FACU
5. *Geum canadense*	1	No	FAC
6.			
7.			
8.			
9.			
10.			
	99 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1. *Parthenocissus quinquefolia*	2	No	FACU
2.			
	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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	3	x 3 =	9
FACU species	9	x 4 =	36
UPL species	96	x 5 =	480
Column Totals:	113 (A)		535 (B)
Prevalence Index = B/A =			4.73

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: X2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					Loamy/Clayey	
12-18	10YR 4/2	97	10YR 5/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Waukegan Natl. Airport - Environmental Assessment Ph 3 City/County: Waukegan, Lake Co. Sampling Date: 06/18/2024

Applicant/Owner: UGN Airport State: IL Sampling Point: Y1

Investigator(s): A.M. Zelles & C.E. Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0 Lat: 42.4259498N Long: -87.86499555W Datum: NAD 83

Soil Map Unit Name: 330A - Peotone silty clay loam, 0 to 2 percent slopes 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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	3	Yes	FACW
2. *Acer negundo*	2	Yes	FAC
3. *Cornus racemosa*	2	Yes	FAC
4. *Rhamnus cathartica*	1	No	FAC
5.			
	8 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Glyceria striata*	40	Yes	OBL
2. *Alisma triviale*	20	Yes	OBL
3. *Typha angustifolia*	8	No	OBL
4. *Carex bebbii*	5	No	OBL
5. *Phalaris arundinacea*	2	No	FACW
6.			
7.			
8.			
9.			
10.			
	75 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1. *Vitis riparia*	2	No	FACW
2.			
	2 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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	73	x 1 =	73
FACW species	7	x 2 =	14
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		102 (B)

Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
A. sativea is from the planted cover crops.

SOIL

Sampling Point: Y1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Loamy/Clayey	
6-18	10YR 2/1	98	10YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 3

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Waukegan Natl. Airport - Environmental Assessment Ph 3 City/County: Waukegan, Lake Co. Sampling Date: 06/19/2024

Applicant/Owner: UGN Airport State: IL Sampling Point: Y2

Investigator(s): A.M. Zelles & C.E. Gurley; Crawford, Murphy, & Tilly Inc. Section, Township, Range: S32, T46N, R12E

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

Slope (%): 2 Lat: 42.42599102N Long: -87.86505043W Datum: NAD 83

Soil Map Unit Name: 330A - Peotone silty clay loam, 0 to 2 percent slopes 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 ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Reseeded in 2023

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	1	No	FAC
2. *Prunus serotina*	1	No	FACU
3. *Populus deltoides*	1	No	FAC
4.			
5.			
	3 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Lolium perenne*	80	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1. *Vitis riparia*	1	No	FACW
2.			
	1 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	1	x 2 =	2
FAC species	2	x 3 =	6
FACU species	81	x 4 =	324
UPL species	0	x 5 =	0
Column Totals:	84 (A)		332 (B)

Prevalence Index = B/A = 3.95

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Lolium perenne is from the planted cover crops.

SOIL

Sampling Point: Y2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100						

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 06/18/2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: Z1

Investigator(s): Danielle Clooney and Heather Lacey Section, Township, Range: S32, T46N, R12E

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

Slope (%): 5 Lat: 42.42980228 Long: -87.85631842 Datum: NAD 83

Soil Map Unit Name: 530C- Ozaukee silt loam, 4 to 6 percent slopes 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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	30	Yes	FAC
2. *Fraxinus pennsylvanica*	15	Yes	FAC
3. *Rhamnus cathartica*	15	Yes	FAC
4. *Populus deltoides*	10	No	FAC
5. *Populus canescens*	5	No	FAC
	75 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		245 (B)

Prevalence Index = B/A = 2.88

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: Z1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
3-10	10YR 4/1	100	10YR 4/6	60	D	M	Loamy/Clayey	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Top layer also a silty texture

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 06/18/2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: Z2

Investigator(s): Danielle Clooney and Heather Lacey Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0 Lat: 42.42984055 Long: -87.85625846 Datum: NAD 83

Soil Map Unit Name: 530C- Ozaukee silt loam, 4 to 6 percent slopes 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 ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			FAC
3.			
4.			
5.	15	Yes	FAC
	15	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Lolium perenne*	50	Yes	FACU
2. *Solidago canadensis*	20	Yes	FACU
3. *Leucanthemum vulgare*	20	Yes	UPL
4. *Melilotus officinalis*	15	No	FACU
5. *Erigeron strigosus*	5	No	FACU
6. *Daucus carota*	5	No	UPL
7.			
8.			
9.			
10.			
	115	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	90	x 4 =	360
UPL species	25	x 5 =	125
Column Totals:	130 (A)		530 (B)
Prevalence Index = B/A =			4.08

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: Z2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					Loamy/Clayey	Silty
4-8	10YR 3/2	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
8-16	10YR 4/3	85	10YR 4/6	15	C	M	Loamy/Clayey	Distinct redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan / Lake Co Sampling Date: 18 June 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AA1

Investigator(s): A.M. Zelles & C.E. Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0 Lat: 42.42972346 Long: -87.85680721 Datum: NAD 83

Soil Map Unit Name: 530B - Ozaukee silt loam, 2 to 4 percent slopes 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 ____ 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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Brush & trees cleared in 2023

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus alba*	10	Yes	UPL
2. *Cornus racemosa*	5	Yes	FAC
3. *Rhamnus cathartica*	5	Yes	FAC
4. *Fraxinus pennsylvanica*	3	No	FACW
5.			
	23 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Lolium perenne*	15	Yes	FACU
2. *Phalaris arundinacea*	10	Yes	FACW
3. *Carex vulpinoidea*	10	Yes	FACW
4. *Typha angustifolia*	3	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
	38 =Total Cover		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	23	x 2 =	46
FAC species	10	x 3 =	30
FACU species	15	x 4 =	60
UPL species	10	x 5 =	50
Column Totals:	61 (A)		189 (B)
Prevalence Index = B/A =			3.10

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AA1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	100					Loamy/Clayey	
13-16	10YR 3/1	85	2.5Y 6/8	2	C	M	Loamy/Clayey	Prominent redox concentrations
16-18	2.5Y 6/1	70	2.5Y 5/4	30	C	M	Loamy/Clayey	Distinct redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: NONE

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

13-16in also with 13% 2.5YR 6/2 depletions in matrix

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 06/19/2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AA2

Investigator(s): A.M. Zelles & C.E. Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 0 Lat: 42.4297998N Long: 87.8567301W Datum: NAD 83

Soil Map Unit Name: 530B - Ozaukee silt loam, 2 to 4 percent slopes 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 ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Recently cleared of bushes and trees in 2023

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Populus alba*	5	Yes	UPL
2. *Populus deltoides*	2	Yes	FAC
3. *Cornus racemosa*	2	Yes	FAC
4. *Fraxinus pennsylvanica*	2	Yes	FACW
5. *Rosa multiflora*	2	Yes	FACU
	13 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Solidago canadensis*	25	Yes	FACU
2. *Festuca subverticillata*	15	Yes	FACU
3. *Avena sativa*	15	Yes	UPL
4. *Phalaris arundinacea*	10	No	FACW
5. *Melilotus albus*	5	No	FACU
6. *Leucanthemum vulgare*	5	No	UPL
7. *Erigeron strigosus*	3	No	FACU
8. *Dipsacus laciniatus*	2	No	UPL
9.			
10.			
	80 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1. *Vitis riparia*	2	No	FACW
2.			
	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: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	14	x 2 =	28
FAC species	4	x 3 =	12
FACU species	50	x 4 =	200
UPL species	27	x 5 =	135
Column Totals:	95 (A)		375 (B)
Prevalence Index = B/A =			3.95

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: AA2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 5/2	70	10YR 6/8	3	C	M	Loamy/Clayey	Prominent redox concentrations

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: hardy dry clay

Depth (inches): 10

Hydric Soil Present? **Yes** X **No** ___

Remarks:

0-10 also with 10YR 5/3, 27% Loamy/Clayey. Drier than soil at AA1.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport | City/County: Waukegan, Lake Co. | Sampling Date: 06/18/2024
Applicant/Owner: Crawford, Murphy, & Tilly Inc. | State: IL | Sampling Point: AB1
Investigator(s): Danielle Clooney and Heather Lacey | Section, Township, Range: S32, T46N, R12E
Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave
Slope (%): 2 | Lat: 42.42870099 | Long: -87.85645448 | Datum: NAD 83
Soil Map Unit Name: 530B - Ozaukee silt loam, 2 to 4 percent slopes | 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 ____ No X
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa compressa*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	15 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	15 (A)		60 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: AB1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100	10YR 3/4	5	C	M	Loamy/Clayey	Distinct redox concentrations
10-15	10YR 4/2	100	10YR 4/6	20	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport | City/County: Waukegan, Lake Co. | Sampling Date: 06/18/2024
Applicant/Owner: Crawford, Murphy, & Tilly Inc. | State: IL | Sampling Point: AB2
Investigator(s): A.M. Zelles & C.E. Gurley | Section, Township, Range: S32, T46N, R12E
Landform (hillside, terrace, etc.): Terrace | Local relief (concave, convex, none): convex
Slope (%): 0 | Lat: 42.42870669 | Long: -87.85641102 | Datum: NAD 83
Soil Map Unit Name: 530B - Ozaukee silt loam, 2 to 4 percent slopes | 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 ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Festuca arundinacea*	70	Yes	FACU
2. *Bouteloua curtipendula*	20	No	UPL
3. *Dactylis glomerata*	10	No	FACU
4. *Plantago lanceolata*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	105 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	85	x 4 =	340
UPL species	20	x 5 =	100
Column Totals:	105 (A)		440 (B)

Prevalence Index = B/A = 4.19

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: AB2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: July 16, 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AC1

Investigator(s): Marion Wells, Alex Tadda, Christine Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 1 Lat: 42.429552 Long: -87.857536 Datum: NAD83

Soil Map Unit Name: 530B - Ozaukee silt loam, 2 to 4 percent slopes NWI classification: none

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

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

Remarks:
Vegetation cleared in 2023. 20+ inch rain event last night, river flood warning ongoing.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Typha angustifolia*	50	Yes	OBL
2. *Juncus tenuis*	25	Yes	FAC
3. *Carex vulpinoidea*	20	Yes	FACW
4. *Lolium perenne*	1	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	96 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	20	x 2 =	40
FAC species	25	x 3 =	75
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals:	96 (A)		169 (B)

Prevalence Index = B/A = 1.76

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Typha is dominant within area.

SOIL

Sampling Point: AC1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/1	97	7.5YR 4/3	3	C	M	Loamy/Clayey	Distinct redox concentrations

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes x	No ___	Depth (inches): 2
Water Table Present?	Yes x	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes x	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

A1, A2, and A3 may appear to be present due to extreme rain event rather than typical hydrology. Isolated - no surface flow.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport Wetland Mitigation Monitoring City/County: Waukegan, Lake Co. Sampling Date: 16 July 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AC2

Investigator(s): Marion Wells, Christine Gurley, Alex Tadda Section, Township, Range: S32, T46N, R12E

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

Slope (%): 1 Lat: 42.429541 Long: -87.857619 Datum: NAD83

Soil Map Unit Name: 530B—Ozaukee silt loam, 2 to 4 percent slopes (not hydric) NWI classification: none

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

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

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

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

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

Remarks:
Vegetation cleared in 2023. 20+ inch rain event last night, river flood warning ongoing.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Lolium perenne*	95	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	95 (A)		380 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** x

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

SOIL

Sampling Point: AC2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: July 16, 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AD1

Investigator(s): M.E. Wells, C.E. Gurley, A.M. Tadda Section, Township, Range: S32, T46N, R12E

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

Slope (%): 3 Lat: 42.42668808 Long: -87.86494713 Datum: NAD 83

Soil Map Unit Name: 530B - Ozaukee silt loam, 2 to 4 percent slopes 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____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No x

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Woody vegetation cleared in 2023 in surrounding area. 20+ inch rain event last night, river flood warning ongoing.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: Entire wetland)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: Entire wetland)			
1. *Cornus racemosa*	7	Yes	FAC
2. *Rhamnus cathartica*	4	Yes	FAC
3.			
4.			
5.			
	11 =Total Cover		
Herb Stratum (Plot size: Entire wetland)			
1. *Juncus tenuis*	30	Yes	FAC
2. *Scirpus pendulus*	25	Yes	OBL
3. *Eleocharis acicularis*	15	No	OBL
4. *Euthamia graminifolia*	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	80 =Total Cover		
Woody Vine Stratum (Plot size: Entire wetland)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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	40	x 1 =	40
FACW species	10	x 2 =	20
FAC species	41	x 3 =	123
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	91 (A)		183 (B)

Prevalence Index = B/A = 2.01

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AD1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Loamy/Clayey	
10-18	10YR 3/1	10	10YR 4/6	25	C	M	Loamy/Clayey	Prominent redox concentrations

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

10-18 inches also with 10YR 4/1, clay, 65%

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes x No ___ Depth (inches): 0

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? Yes x No ___ Depth (inches): 0

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Based on slope and surrounding topography, appears isolated, receiving runoff from southwest. Surface water and surface saturation may be a result of extreme rainfall event (flood watch ongoing). Surface water depth less than 1 inch.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: July 16, 2024

Applicant/Owner: Waukegan National Airport State: Sampling Point: AD2

Investigator(s): M.E. Wells, C.E. Gurley, A.M. Tadda Section, Township, Range: S32, T46N, R12E

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

Slope (%): 1 Lat: 42.42670325 Long: -87.86489184 Datum: NAD 83

Soil Map Unit Name: 530B - Ozaukee silt loam, 2 to 4 percent slopes 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____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No x

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Woody vegetation cleared in 2023 in surrounding area. 20+ inch rain event last night, river flood warning ongoing.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rhamnus cathartica*	30	Yes	FAC
2. *Cornus racemosa*	10	Yes	FAC
3. *Elaeagnus umbellata*	5	No	UPL
4.			
5.			
	45 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Rhamnus cathartica*	30	Yes	FAC
2. *Solidago canadensis*	15	Yes	FACU
3. *Euthamia graminifolia*	15	Yes	FACW
4.	5	No	
5.			
6.			
7.			
8.			
9.			
10.			
	65 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *Vitis riparia*	5	Yes	FACW
2.			
	5 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	70	x 3 =	210
FACU species	15	x 4 =	60
UPL species	5	x 5 =	25
Column Totals:	110 (A)		335 (B)
Prevalence Index = B/A =			3.05

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AD2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	100					Loamy/Clayey	
8-18	10yr 3/1	100					Sandy	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

0-8 is sandy loam, and 8-18 is sand with gravel.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes x No ___ Depth (inches): 9

Saturation Present? Yes ___ No x Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 16 July 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AF1

Investigator(s): Marion Wells, Alex Tadda, and Christine Gurley ection, Township, Range: S32, T46N, R12E

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

Slope (%): 1 Lat: 42.426069 Long: -87.86572 Datum: NAD83

Soil Map Unit Name: 330A—Peotone silty clay loam, 0 to 2 percent slopes (hydric) NWI classification: none

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Vegetation cleared in 2023. 20+ inch rain event last night, river flood warning ongoing.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	4	Yes	FACW
2. *Rhamnus cathartica*	1	Yes	FAC
3.			
4.			
5.			
	5 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Eleocharis acicularis*	60	Yes	OBL
2. *Juncus torreyi*	8	No	FACW
3. *Schoenoplectus tabernaemontani*	8	No	OBL
4. *Scirpus atrovirens*	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
	81 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *Vitis riparia*	8	Yes	FACW
2.			
	8 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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	73	x 1 =	73
FACW species	20	x 2 =	40
FAC species	1	x 3 =	3
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	94 (A)		116 (B)

Prevalence Index = B/A = 1.23

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AF1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	100					Loamy/Clayey	
13-18	10YR 5/2	95	10YR 5/4	5	C	M	Loamy/Clayey	Distinct redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes x	No ___	Depth (inches): 6
Water Table Present?	Yes x	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes x	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

B8: Underwater sections sparsely vegetated in some places.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 16 July 2024

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AF2

Investigator(s): Marion Wells, Alex Tadda, and Christine Gurley Section, Township, Range: S32, T46N, R12E

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

Slope (%): 2 Lat: 42.426003 Long: -87.86573 Datum: NAD83

Soil Map Unit Name: 330A—Peotone silty clay loam, 0 to 2 percent slopes (hydric) NWI classification: none

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

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

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

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

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Vegetation cleared in 2023. 20+ inch rain event last night, river flood warning ongoing.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2.			
3.			
4.			
5.			
	5 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Lolium perenne*	80	Yes	FACU
2. *Melilotus albus*	8	No	FACU
3. *Vitis riparia*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	93 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	88	x 4 =	352
UPL species	0	x 5 =	0
Column Totals:	98 (A)		372 (B)

Prevalence Index = B/A = 3.80

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: AF2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/1	100					Loamy/Clayey	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/18/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AF3

Investigator(s): A.M. Zelles, D.C. Clooney Section, Township, Range: S31 T46N R12E

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

Slope (%): 3 Lat: 42.42619 Long: -87.865995 Datum: NAD83

Soil Map Unit Name: 330A—Peotone silty clay loam, 0-2% slopes (hydric) NWI classification: None

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	15	Yes	FAC
2.			
3.			
4.			
5.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	20	Yes	FAC
2. *Rhamnus cathartica*	15	Yes	FAC
3. *Populus deltoides*	5	No	FAC
4. *Fraxinus pennsylvanica*	3	No	FACW
5.			
	43	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	30	Yes	FAC
2. *Solidago canadensis*	20	Yes	FACU
3. *Carex sp.*	5	No	
4. *Viola sororia*	3	No	FAC
5. *Penstemon digitalis*	1	No	FAC
6. *Agrimonia gryposepala*	1	No	FACU
7.			
8.			
9.			
10.			
	60	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	2	No	FACW
2. *Toxicodendron radicans*	2	No	FAC
	4	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	91	x 3 =	273
FACU species	21	x 4 =	84
UPL species	0	x 5 =	0
Column Totals:	117 (A)		367 (B)

Prevalence Index = B/A = 3.14

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AF3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	100					Loamy/Clayey	
6-11	10YR 5/1	68	10YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations
6-11	10YR 7/1	10						
6-11	10YR 6/4	10						
6-11	10YR 5/2	10						

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? Yes ___ No x Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/18/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AG1

Investigator(s): A.M. Zelles, D.C. Clooney Section, Township, Range: S31 T46N R12E

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

Slope (%): 0 Lat: 42.426515 Long: -87.865911 Datum: NAD83

Soil Map Unit Name: 330A—Peotone silty clay loam, 0-2% slopes (hydric) NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	25	Yes	FAC
2. *Acer rubrum*	25	Yes	FAC
3. *Fraxinus pennsylvanica*	10	No	FACW
4.			
5.			
	60 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Carex blanda*	10	Yes	FAC
3. *Juncus tenuis*	10	Yes	FAC
4. *Cornus racemosa*	5	No	FAC
5. *Fragaria vesca*	3	No	UPL
6. *Acer rubrum*	2	No	FAC
7. *Geum canadense*	1	No	FAC
8. *Taraxacum officinale*	1	No	FACU
9. *Oxalis stricta*	1	No	FACU
10. *Trillium recurvatum*	1	No	FACU
	49 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	78	x 3 =	234
FACU species	3	x 4 =	12
UPL species	3	x 5 =	15
Column Totals:	109 (A)		311 (B)
Prevalence Index = B/A =			2.85

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AG1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	100					Loamy/Clayey	
10-13	10YR 6/2	75	10YR 5/8	15	C	M	Loamy/Clayey	Prominent redox concentrations
10-13	10YR 3/1	10					Loamy/Clayey	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/18/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AG2

Investigator(s): D.C. Clooney & A.M. Zelles Section, Township, Range: S31 T46N R12E

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

Slope (%): 10 Lat: 42.42645 Long: -87.865955 Datum: NAD83

Soil Map Unit Name: 330A—Peotone silty clay loam, 0-2% slopes (hydric) NWI classification: None

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	60	Yes	FAC
2. *Fraxinus pennsylvanica*	5	No	FACW
3. *Rhus glabra*	5	No	UPL
4.			
5.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Cornus racemosa*	10	Yes	FAC
3. *Rhamnus cathartica*	10	Yes	FAC
4.			
5.			
	30	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Cornus racemosa*	5	Yes	FAC
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3. *Rhamnus cathartica*	5	Yes	FAC
4. *Solidago canadensis*	2	No	FACU
5. *Agrimonia parviflora*	2	No	FACW
6. *Fragaria virginiana*	2	No	FACU
7. *Ribes sp.*	2	No	
8.			
9.			
10.			
	23	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	2	No	FACW
2. *Smilax herbacea*	2	No	FAC
	4	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (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	0	x 1 =	0
FACW species	24	x 2 =	48
FAC species	92	x 3 =	276
FACU species	4	x 4 =	16
UPL species	5	x 5 =	25
Column Totals:	125 (A)		365 (B)
Prevalence Index = B/A =			2.92

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AG2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	100					Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/19/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AH1

Investigator(s): C.E. Gurley, S.K. Spence Section, Township, Range: S31 T46N R12E

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

Slope (%): 1 Lat: 42.426634 Long: -87.865809 Datum: NAD83

Soil Map Unit Name: 530B—Ozaukee silt loam, 2-4% slopes NWI classification: none

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
Adjacent disturbed area: past soils piles (now small hills), large trash such as abandoned dishwashers. "Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	2	No	FAC
2. *Rhamnus cathartica*	2	No	FAC
3.			
4.			
5.			
	4	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Cornus racemosa*	8	Yes	FAC
3. *Rhamnus cathartica*	5	No	FAC
4. *Rosa multiflora*	2	No	FACU
5.			
	30	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Scirpus cyperinus*	30	Yes	OBL
2. *Juncus tenuis*	30	Yes	FAC
3. *Festuca rubra*	10	No	FACU
4. *Carex granularis*	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	80	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	2	No	FACW
2.			
	2	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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	30	x 1 =	30
FACW species	27	x 2 =	54
FAC species	47	x 3 =	141
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	116 (A)		273 (B)

Prevalence Index = B/A = 2.35

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AH1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Loamy/Clayey	
6-18	10YR 2/1	15	10YR 6/8	20	C	M	Loamy/Clayey	Prominent redox concentrations
6-18	10YR 5/4	65						

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Area with raised mossy tussocks and lower sunken areas.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/19/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AH2

Investigator(s): C.E. Gurley, S.K. Spence Section, Township, Range: S31 T46N R12E

Landform (hillside, terrace, etc.): shallow hilly area Local relief (concave, convex, none): concave

Slope (%): 2 Lat: 42.426582 Long: -87.865401 Datum: NAD83

Soil Map Unit Name: 530B—Ozaukee silt loam, 2-4% slopes NWI classification: none

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carya ovata*	50	Yes	FACU
2. *Quercus rubra*	20	Yes	FACU
3. *Rhamnus cathartica*	10	No	FAC
4.			
5.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	25	Yes	FAC
2. *Juniperus virginiana*	15	Yes	FACU
3. *Lonicera maackii*	5	No	UPL
4. *Fraxinus pennsylvanica*	2	No	FACW
5.			
	47	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Rhamnus cathartica*	35	Yes	FAC
2. *Solidago canadensis*	3	No	FACU
3. *Fragaria virginiana*	3	No	FACU
4. *Agrimonia gryposepala*	3	No	FACU
5. *Lonicera maackii*	3	No	UPL
6. *Potentilla simplex*	2	No	FACU
7. *Centaurea jacea*	2	No	FACU
8. *Circaea canadensis*	1	No	FACU
9.			
10.			
	52	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	70	x 3 =	210
FACU species	99	x 4 =	396
UPL species	8	x 5 =	40
Column Totals:	179 (A)		650 (B)
Prevalence Index = B/A =			3.63

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: AH2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	100					Loamy/Clayey	
6-10	10YR 4/3	100					Loamy/Clayey	
10-18	10YR 4/3	90	10YR 6/8	10	C	M	Loamy/Clayey	Prominent redox concentrations

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AI1

Investigator(s): D.C. Clooney, S.K. Spence Section, Township, Range: S6 T45N R12E

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

Slope (%): 0 Lat: 42.413268 Long: -87.883986 Datum: NAD83

Soil Map Unit Name: 232A—Ashkum silty clay loam, 0-2% slopes (hydric) NWI classification: None

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

Are Vegetation ____, Soil 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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor. Adjacent to site of former subdivision; some concrete pads and former roads remain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2.			
3.			
4.			
5.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	40	Yes	FACW
2. *Solidago canadensis*	15	Yes	FACU
3. *Geum canadense*	5	No	FAC
4. *Impatiens capensis*	5	No	FACW
5. *Rhamnus cathartica*	5	No	FAC
6. *Cirsium arvense*	5	No	FACU
7. *Trifolium pratense*	5	No	FACU
8. *Erigeron strigosus*	5	No	FACU
9. *Galium aparine*	5	No	FACU
10. *Symphyotrichum cordifolium*	2	No	UPL
	92	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	10	x 3 =	30
FACU species	35	x 4 =	140
UPL species	2	x 5 =	10
Column Totals:	102 (A)		290 (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AI1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/1	100					Loamy/Clayey	
11-17	10YR 3/1	98	10YR 7/8	2	C	M	Loamy/Clayey	Prominent redox concentrations
17-20	10YR 4/1	70	10YR 6/8	5	C	M	Loamy/Clayey	Prominent redox concentrations
17-20	10YR 2/1	25						

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Abuts stream UNT1

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AI2

Investigator(s): C.E.Gurley, S.K. Spence Section, Township, Range: S6 T45N R12E

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

Slope (%): 3.5 Lat: 42.413279 Long: -87.883941 Datum: NAD83

Soil Map Unit Name: 232A—Ashkum silty clay loam, 0-2% slopes (hydric) NWI classification: None

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

Are Vegetation ____, Soil x, or Hydrology ____ significantly disturbed? Are "N X 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 p X

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

Remarks:
Adjacent to site of former subdivision; some concrete pads and former roads remain. "Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa palustris*	40	Yes	FACW
2. *Festuca rubra*	35	Yes	FACU
3. *Securigera varia*	15	No	UPL
4. *Trifolium repens*	10	No	FACU
5. *Vitis riparia*	2	No	FACW
6. *Parthenocissus quinquefolia*	2	No	FACU
7.			
8.			
9.			
10.			
	104 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	42	x 2 =	84
FAC species	0	x 3 =	0
FACU species	47	x 4 =	188
UPL species	15	x 5 =	75
Column Totals:	104 (A)		347 (B)

Prevalence Index = B/A = 3.34

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: AI2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 3/1	100					Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: broken concrete

Depth (inches): 6

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

Restrictive layer of broken concrete. Multiple attempts made.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AI3

Investigator(s): A.M. Zelles, D.C. Clooney Section, Township, Range: S6 T45N R12E

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

Slope (%): 20 Lat: 42.413766 Long: -87.883850 Datum: NAD83

Soil Map Unit Name: 232A—Ashkum silty clay loam, 0-2% slopes (hydric) NWI classification: None

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

Are Vegetation ____, Soil 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 ____ No X
Hydric Soil Present? Yes ____ No x
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor. Adjacent to site of former subdivision; some concrete pads and former roads remain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ailanthus altissima*	25	Yes	FACU
2. *Gleditsia triacanthos*	5	No	FACU
3.			
4.			
5.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	75	Yes	FAC
2. *Lonicera maackii*	5	No	UPL
3.			
4.			
5.			
	80	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Rhamnus cathartica*	25	Yes	FAC
2. *Sanicula canadensis*	10	Yes	FACU
3. *Symphyotrichum lateriflorum*	5	No	FACW
4. *Symphyotrichum cordifolium*	2	No	UPL
5. *Taraxacum officinale*	2	No	FACU
6. *Galium aparine*	1	No	FACU
7. *Rosa multiflora*	1	No	FACU
8. *Glechoma hederacea*	1	No	FACU
9.			
10.			
	47	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	2	No	FACW
2.			
	2	=Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	7	x 2 =	14
FAC species	100	x 3 =	300
FACU species	45	x 4 =	180
UPL species	7	x 5 =	35
Column Totals:	159 (A)		529 (B)
Prevalence Index = B/A =			3.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: AI3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	100					Loamy/Clayey	
10-15	10YR 2/2	70	10YR 4/6	10	c	M	Loamy/Clayey	Prominent redox concentrations
10-15	10YR 4/2	10					Loamy/Clayey	
10-15	10YR 5/1	10					Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AI4

Investigator(s): C.E. Gurley, S.K. Spence, A.M. Zelles, D.C. Clooney Section, Township, Range: S6 T45N R12E

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

Slope (%): 4 Lat: 42.41388 Long: -87.883643 Datum: NAD83

Soil Map Unit Name: 232A—Ashkum silty clay loam, 0-2% slopes (hydric) NWI classification: None

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

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

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor. Adjacent to site of former subdivision; some concrete pads and former roads remain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	60	Yes	FAC
2. *Ulmus rubra*	20	No	FAC
3. *Acer saccharinum*	20	No	FACW
4. *Fraxinus pennsylvanica*	10	No	FACW
5.			
	110	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	25	Yes	FAC
2.			
3.			
4.			
5.			
	25	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Sanicula canadensis*	40	Yes	FACU
2. *Glechoma hederacea*	15	Yes	FACU
3. *Rhamnus cathartica*	10	No	FAC
4. *Thalictrum dasycarpum*	10	No	FACW
5. *Fraxinus pennsylvanica*	3	No	FACW
6. *Vitis riparia*	2	No	FACW
7.			
8.			
9.			
10.			
	80	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	115	x 3 =	345
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	215 (A)		655 (B)
Prevalence Index = B/A =			3.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No X

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

SOIL

Sampling Point: AI4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	100					Loamy/Clayey	
13-16	10YR 2/1	99	10YR 6/8	1	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: tree roots

Depth (inches): 16

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Buttressed roots observed on trees. Wetland is located within floodplain for nearby stream UNT1, and near NWI mapped riverine wetland associated with UNT1.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AJ1

Investigator(s): D.C. Clooney, C.E. Gurley Section, Township, Range: S6 T45N R12E

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

Slope (%): 0 Lat: 42.41282 Long: -87.879067 Datum: NAD83

Soil Map Unit Name: 530B—Ozaukee silt loam, 2-4% slopes NWI classification: None

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa palustris*	30	Yes	FACW
2. *Festuca rubra*	20	Yes	FACU
3. *Phalaris arundinacea*	20	Yes	FACW
4. *Cirsium arvense*	5	No	FACU
5. *Plantago lanceolata*	3	No	FACU
6. *Daucus carota*	3	No	UPL
7. *Solidago canadensis*	3	No	FACU
8.			
9.			
10.			
	84	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Glechoma hederacea*	10	Yes	FACU
2. *Convolvulus arvensis*	5	Yes	UPL
	15	=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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	41	x 4 =	164
UPL species	8	x 5 =	40
Column Totals:	99 (A)		304 (B)

Prevalence Index = B/A = 3.07

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: AJ1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	10YR 3/1	100					Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 9/26/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AK1

Investigator(s): A.M. Zelles, C.E. Gurley Section, Township, Range: S31 T46N R12E

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

Slope (%): 0 Lat: 42.40997 Long: -87.883124 Datum: NAD83

Soil Map Unit Name: 298B—Beecher silt loam, 2-4% slopes (not hydric) NWI classification: None

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor. Abuts Drainage 12.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	5	Yes	FAC
2. *Lonicera tatarica*	5	Yes	FACU
3. *Cornus racemosa*	5	Yes	FAC
4.			
5.			
	15 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	40	Yes	FACW
2. *Solidago canadensis*	20	Yes	FACU
3. *Typha X glauca*	5	No	OBL
4. *Bidens frondosa*	5	No	FACW
5. *Persicaria maculosa*	5	No	FACW
6. *Solanum dulcamara*	3	No	FAC
7. *Lythrum salicaria*	3	No	OBL
8.			
9.			
10.			
	81 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	2	No	FACW
2.			
	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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	8	x 1 =	8
FACW species	52	x 2 =	104
FAC species	13	x 3 =	39
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	98 (A)		251 (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AK1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	100					Loamy/Clayey	
12-18	10YR 2/1	60	10YR 6/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 5/2	30	D	M	Loamy/Clayey	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? Yes ___ No x Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Swale drains from east to Wetland AK - abuts.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 9/26/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AK2

Investigator(s): A.M. Zelles Section, Township, Range: S31 T46N R12E

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

Slope (%): 2 Lat: 42.410008 Long: -87.883023 Datum: NAD83

Soil Map Unit Name: 298B—Beecher silt loam, 2-4% slopes (not hydric) NWI classification: None

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

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

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

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

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

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	30	Yes	FAC
2.			
3.			
4.			
5.			
	30 =Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	90	Yes	FAC
2. *Lonicera tatarica*	10	No	FACU
3.			
4.			
5.			
	100 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Rhamnus cathartica*	30	Yes	FAC
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3. *Potentilla simplex*	2	No	FACU
4. *Symphyotrichum lateriflorum*	2	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	44 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Parthenocissus quinquefolia*	2	No	FACU
2.			
	2 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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	0	x 1 =	0
FACW species	12	x 2 =	24
FAC species	150	x 3 =	450
FACU species	14	x 4 =	56
UPL species	0	x 5 =	0
Column Totals:	176 (A)		530 (B)

Prevalence Index = B/A = 3.01

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AK2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Loamy/Clayey	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:
Swale drains from east to Wetland AK - abuts.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 9/26/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AL1

Investigator(s): A.M. Zelles Section, Township, Range: S31 T46N R12E

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

Slope (%): 0 Lat: 42.427248 Long: -87.86295 Datum: NAD83

Soil Map Unit Name: 530C2—Ozaukee silt loam, 4 to 6 percent slopes, eroded NWI classification: None

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

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

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

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

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

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor. Depression at top of hill.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Typha x glauca*	35	Yes	OBL
2. *Erechtites hieraciifolius*	15	Yes	FAC
3. *Conyza canadensis*	5	No	FACU
4. *Solidago canadensis*	5	No	FACU
5. *Barbarea vulgaris*	2	No	FAC
6.			
7.			
8.			
9.			
10.			
	62	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	2	No	FACW
2.			
	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	35	x 1 =	35
FACW species	2	x 2 =	4
FAC species	17	x 3 =	51
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	64 (A)		130 (B)

Prevalence Index = B/A = 2.03

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: AL1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					Loamy/Clayey	
3-12	10YR 3/1	20	10YR 5/8	40	C	M	Loamy/Clayey	Prominent redox concentrations
3-12			10YR 5/3	40	D	M	Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- x Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 9/26/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: AL2

Investigator(s): A.M. Zelles Section, Township, Range: S31 T46N R12E

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

Slope (%): 3 Lat: 42.42735 Long: -87.863003 Datum: NAD83

Soil Map Unit Name: 530C2—Ozaukee silt loam, 4 to 6 percent slopes, eroded NWI classification: None

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

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

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

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

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

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rosa multiflora*	5	Yes	FACU
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3.			
4.			
5.			
	10 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Lolium perenne*	30	Yes	FACU
2. *Festuca arundinacea*	30	Yes	FACU
3. *Cirsium arvense*	10	No	FACU
4. *Melilotus albus*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	80 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	10	Yes	FACW
2.			
	10 =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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals:	100 (A)		370 (B)

Prevalence Index = B/A = 3.70

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: AL2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					Loamy/Clayey	
6-12	10YR 3/2	80	10YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
6-12			10YR 5/3	10	D	M	Loamy/Clayey	

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

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Soil dry and crumbly.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? Yes ___ No x Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/28/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 3A

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 1, T45N, R11E

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

Slope (%): <2 Lat: 42.41263 Long: -87.88638 Datum: NAD 83

Soil Map Unit Name: NRCS mapped Peotone SICL; revised to Houghton MK, 0-2% slopes NWI classification: POWF

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

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

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**Yes**
Hydric Soil Present?	Yes		
Wetland Hydrology Present?	Yes		

Remarks: Community type is marsh.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Typha angustifolia*	70	Yes	OBL
2. *Solanum dulcamara*	7	No	FAC
3. *Acer saccharinum*	1	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	78	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: _____ (A)

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators

- [x] 1-Rapid Test for Hydrophytic Vegetation
- [ ] 2-Dominance Test is >50%
- [ ] 3-Prevalence Index is < or =3.0[1]
- [ ] 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes**

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

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL **WETLAND DETERMINATION DATA FORM - Midwest Region** Sampling Point: 3A

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	N 2.5/	100					MK	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes Depth (inches): <6

Water Table Present? Yes Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes Depth (inches): 0

Wetland Hydrology Present? **Yes**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/28/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 3B

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 1, T45N, R11E

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex

Slope (%): <2 Lat: 42.41311 Long: -87.88694 Datum: NAD 83

Soil Map Unit Name: Ashkum SICL, 0-2% slopes NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	No	**Is the Sampled Area within a Wetland?**	**No**
Hydric Soil Present?	No		
Wetland Hydrology Present?	No		

Remarks: Community type is non-native grassland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Glechoma hederacea*	70	Yes	FACU
2. *Trifolium repens*	20	No	FACU
3. *Festuca elatior*	10	No	FACU
4. *Poa pratensis*	10	No	FAC
5. *Plantago rugelii*	7	No	FAC
6. *Cornus racemosa*	5	No	FAC
7. *Taraxacum officinale*	5	No	FACU
8.			
9.			
10.			
	127	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- ☐ 1-Rapid Test for Hydrophytic Vegetation
- ☐ 2-Dominance Test is >50%
- ☐ 3-Prevalence Index is < or =3.0[1]
- ☐ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **No**

Remarks: (Include photo numbers here or on a separate sheet.)

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL **WETLAND DETERMINATION DATA FORM - Midwest Region** Sampling Point: 3B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	100					SIL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? No Depth (inches): _____

Water Table Present? No Depth (inches): _____

Saturation Present? (includes capillary fringe) No Depth (inches): _____

Wetland Hydrology Present? **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/19/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 4D

Investigator(s): A.M. Zelles, D.C. Clooney, S.K. Spence, C.E. Gurley Section, Township, Range: S6 T45N R12E

Landform (hillside, terrace, etc.): Stream terrace Local relief (concave, convex, none): None

Slope (%): 0 Lat: 42.412504 Long: -87.884166 Datum: NAD83

Soil Map Unit Name: 232A—Ashkum silty clay loam, 0-2% slopes (hydric) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor. Wet shrubland area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	20	Yes	FAC
2. *Ulmus americana*	10	Yes	FACW
3. *Prunus nigra*	3	No	FACU
4.			
5.			
	33	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	70	Yes	FAC
2. *Rosa multiflora*	1	No	FACU
3.			
4.			
5.			
	71	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Rhamnus cathartica*	35	Yes	FAC
2. *Fraxinus pennsylvanica*	4	No	FACW
3. *Circaea canadensis*	1	No	FACU
4. *Geum canadense*	1	No	FAC
5. *Carex blanda*	1	No	FAC
6. *Acer rubrum*	1	No	FAC
7.			
8.			
9.			
10.			
	43	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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	0	x 1 =	0
FACW species	14	x 2 =	28
FAC species	128	x 3 =	384
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	147 (A)		432 (B)

Prevalence Index = B/A = 2.94

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 4D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	5YR 2.5/1	100					Loamy/Clayey	
14-18	5YR 5/1	98	5YR 5/8	2	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- x Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- x 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Iron concretions found.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- x Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 4E

Investigator(s): C.E. Gurley, S.,K. Spence Section, Township, Range: S6 T45N R12E

Landform (hillside, terrace, etc.): shallow floodplain Local relief (concave, convex, none): concave

Slope (%): 0 Lat: 42.412421 Long: -87.883917 Datum: NAD83

Soil Map Unit Name: 232A—Ashkum silty clay loam, 0-2% slopes (hydric) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Demolished former subdivision nearby - hydrology and soil may have been previously disturbed. "Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	95	Yes	FAC
2.			
3.			
4.			
5.			
	95	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Rhamnus cathartica*	10	Yes	FAC
2. *Rosa multiflora*	1	No	FACU
3. *Carex blanda*	1	No	FAC
4. *Vitis riparia*	1	No	FACW
5. *Thalictrum dasycarpum*	1	No	FACW
6. *Impatiens capensis*	1	No	FACW
7. *Lilium sp.*	1	No	
8. *Prunus nigra*	1	No	FACU
9.			
10.			
	17	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	2	No	FACW
2.			
	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	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	106	x 3 =	318
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	113 (A)		336 (B)

Prevalence Index = B/A = 2.97

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 4E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Loamy/Clayey	
10-17	10YR 2/1	97	10YR 5/8	3	C	M	Loamy/Clayey	Prominent redox concentrations
17-20	10YR 5/1	79	10YR 6/8	15	C	M	Loamy/Clayey	Prominent redox concentrations
17-20	10YR 4/1	5					Loamy/Clayey	
17-20	10YR 2/1	1					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- x Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- x Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 4F

Investigator(s): A.M. Zelles, D.C. Clooney Section, Township, Range: S6 T45N R12E

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): none

Slope (%): 0 Lat: 42.412623 Long: -87.883885 Datum: NAD83

Soil Map Unit Name: 232A—Ashkum silty clay loam, 0-2% slopes (hydric) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	50	Yes	FAC
2. *Prunus nigra*	20	Yes	FACU
3. *Juniperus virginiana*	20	Yes	FACU
4.			
5.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	35	Yes	FAC
2. *Lonicera tatarica*	5	No	FACU
3.			
4.			
5.			
	40	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Rhamnus cathartica*	60	Yes	FAC
2. *Carex blanda*	10	No	FAC
3. *Fragaria virginiana*	5	No	FACU
4. *Parthenocissus quinquefolia*	5	No	FACU
5. *Populus alba*	5	No	UPL
6. *Trillium recurvatum*	5	No	FACU
7. *Lonicera tatarica*	5	No	FACU
8.			
9.			
10.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	5	Yes	FACW
2.			
	5	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	155	x 3 =	465
FACU species	65	x 4 =	260
UPL species	5	x 5 =	25
Column Totals:	230 (A)		760 (B)
Prevalence Index = B/A =			3.30

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 4F

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	100					Loamy/Clayey	
13-18	10YR 3/1	95					Loamy/Clayey	
13-18	10YR 5/1	5					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/28/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 5A

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 1, T45N, R11E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): <2 Lat: 42.41130 Long: -87.88490 Datum: NAD 83

Soil Map Unit Name: Peotone SICL, 0-2% slopes NWI classification: PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**Yes**
Hydric Soil Present?	Yes		
Wetland Hydrology Present?	Yes		

Remarks: Community type is marsh.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Typha angustifolia*	60	Yes	OBL
2. *Phalaris arundinacea*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A = _____

Hydrophytic Vegetation Indicators

- [x] 1-Rapid Test for Hydrophytic Vegetation
- [ ] 2-Dominance Test is >50%
- [ ] 3-Prevalence Index is < or =3.0[1]
- [ ] 4-Morphological Adaptations [1](Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 5A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					SICL	
3-13	10YR 2/1	95	7.5YR 4/6	5	C	M	SICL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes Depth (inches): <6

Water Table Present? Yes Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes Depth (inches): 0

Wetland Hydrology Present? **Yes**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/28/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 5B/6B

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 6, T45N, R12E

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex

Slope (%): <2 Lat: 42.41102 Long: -87.88372 Datum: NAD 83

Soil Map Unit Name: NRCS mapped Peotone SICL; revised to Udoll NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**No**
Hydric Soil Present?	No		
Wetland Hydrology Present?	No		

Remarks: Community type is shrubland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1. *Rhamnus cathartica*	70	Yes	FAC
2. *Lonicera tatarica*	15	No	FACU
3. *Rhamnus frangula*	7	No	FACW
4. *Cornus racemosa*	3	No	FAC
5. *Crataegus sp.*	1	No	-
	96	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Sanicula gregaria*	40	Yes	FAC
2. *Rhamnus cathartica*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1. *Vitis riparia*	3	No	FACW
2.			
	3	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals (A)	(B)	

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- ☐ 1-Rapid Test for Hydrophytic Vegetation
- ☑ 2-Dominance Test is >50%
- ☐ 3-Prevalence Index is < or =3.0[1]
- ☐ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 5B/6B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	100					SIL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? No Depth (inches): _____

Water Table Present? No Depth (inches): _____

Saturation Present? (includes capillary fringe) No Depth (inches): _____

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Previous data form - CMT 2025 Wetland Report concurs with this data

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/28/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 6A

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 6, T45N, R12E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): <2 Lat: 42.41121 Long: -87.88357 Datum: NAD 83

Soil Map Unit Name: Peotone SICL, undrained, 0-2% slopes NWI classification: PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**Yes**
Hydric Soil Present?	Yes		
Wetland Hydrology Present?	Yes		

Remarks: Community type is sedge meadow.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Carex utriculata*	40	Yes	OBL
2. *Carex pellita*	25	Yes	OBL
3. *Boehmeria cylindrica*	15	No	OBL
4. *Rumex orbiculatus*	15	No	OBL
5. *Eleocharis erythropoda*	10	No	OBL
6. *Polygonum amphibium var. stipulaceum*	10	No	OBL
7. *Mentha arvensis var. villosa*	7	No	FACW
8. *Scutellaria lateriflora*	7	No	OBL
9.			
10.			
	129	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A = _____

Hydrophytic Vegetation Indicators

- [x] 1-Rapid Test for Hydrophytic Vegetation
- [ ] 2-Dominance Test is >50%
- [ ] 3-Prevalence Index is < or =3.0[1]
- [ ] 4-Morphological Adaptations [1](Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

Previous data form - CMT 2025 Wetland Report concurs with this data

SOIL

Sampling Point: 6A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	95	7.5YR 4/6	5	C	M	SICL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes Depth (inches): <3

Water Table Present? Yes Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes Depth (inches): 0

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 9/27/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 6C

Investigator(s): A.M. Zelles, C.E. Gurley Section, Township, Range: S6 T46N R12E

Landform (hillside, terrace, etc.): Shallow slope Local relief (concave, convex, none): Concave

Slope (%): 2 Lat: 42.411436 Long: -87.883213 Datum: NAD83

Soil Map Unit Name: 1330A—Peotone silty clay loam, undrained, 0-2% slopes (hydric) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling p X

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	10	Yes	FAC
2. *Rhamnus cathartica*	5	Yes	FAC
3.			
4.			
5.			
	15 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Calamagrostis canadensis*	40	Yes	OBL
2. *Poa palustris*	25	Yes	FACW
3. *Sparganium americanum*	10	No	OBL
4. *Lythrum salicaria*	4	No	OBL
5. *Solidago canadensis*	3	No	FACU
6. *Scirpus atrovirens*	1	No	OBL
7.			
8.			
9.			
10.			
	83 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	1	No	FACW
2.			
	1 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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	55	x 1 =	55
FACW species	26	x 2 =	52
FAC species	15	x 3 =	45
FACU species	3	x 4 =	12
UPL species	0	x 5 =	0
Column Totals:	99 (A)		164 (B)

Prevalence Index = B/A = 1.66

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 6C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	99	10YR 5/3	1	C	M	Loamy/Clayey	Distinct redox concentrations
6-18	10YR 2/1	90	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 6/1	5	D	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soil moist.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 9/27/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 6D

Investigator(s): A.M. Zelles, C.E. Gurley Section, Township, Range: S6 T46N R12E

Landform (hillside, terrace, etc.): Shallow slope Local relief (concave, convex, none): Concave

Slope (%): 2 Lat: 42.411341 Long: -87.883109 Datum: NAD83

Soil Map Unit Name: 330A—Peotone silty clay loam, 0-2% slopes (hydric) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling p X

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor. Depression at top of hill.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	50	Yes	FAC
2.			
3.			
4.			
5.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	40	Yes	FAC
2.			
3.			
4.			
5.			
	40	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Penstemon digitalis*	15	Yes	FAC
2. *Solidago canadensis*	10	Yes	FACU
3. *Rhamnus cathartica*	5	No	FAC
4. *Agrimonia gryposepala*	2	No	FACU
5. *Potentilla simplex*	2	No	FACU
6. *Toxicodendron radicans*	2	No	FAC
7. *Prunella vulgaris*	2	No	FAC
8. *Juncus tenuis*	1	No	FAC
9. *Lycopus americanus*	1	No	OBL
10. *Epilobium coloratum*	1	No	OBL
	43	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	1	x 2 =	2
FAC species	116	x 3 =	348
FACU species	14	x 4 =	56
UPL species	0	x 5 =	0
Column Totals:	133 (A)		408 (B)

Prevalence Index = B/A = 3.07

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

VEGETATION Continued – Use scientific names of plants. Sampling Point: 6D

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
	50	=Total Cover	
Sapling/Shrub Stratum			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
	40	=Total Cover	
Herb Stratum			
11. *Ulmus rubra*	1	No	FAC
12. *Symphyotrichum lateriflorum*	1	No	FACW
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
	43	=Total Cover	
Woody Vine Stratum			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 6D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	99	10YR 5/3	1	C	M	Loamy/Clayey	Distinct redox concentrations
12-18	10YR 4/1	98	10YR 5/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil dry and crumbly.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- x Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? Yes ___ No x Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 9/27/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 6E

Investigator(s): A.M. Zelles, C.E. Gurley Section, Township, Range: S6 T46N R12E

Landform (hillside, terrace, etc.): Shallow slope Local relief (concave, convex, none): Convex

Slope (%): 3 Lat: 42.411274 Long: -87.882921 Datum: NAD83

Soil Map Unit Name: 330A—Peotone silty clay loam, 0-2% slopes (hydric) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor. Depression at top of hill.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	90	Yes	FAC
2.			
3.			
4.			
5.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Rhamnus cathartica*	2	Yes	FAC
2. *Agrimonia gryposepala*	1	Yes	FACU
3. *Circaea canadensis*	1	Yes	FACU
4. *Viola sororia*	1	Yes	FAC
5. *Carex sp.*	1	Yes	
6.			
7.			
8.			
9.			
10.			
	6	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	103	x 3 =	309
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	105 (A)		317 (B)

Prevalence Index = B/A = 3.02

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 6E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	100					Loamy/Clayey	
12-18	10YR 3/1	94	10YR 4/6	1	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 5/2	5	D	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Soil dry and crumbly.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No x	Depth (inches): ___
Water Table Present?	Yes ___	No x	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No x	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 9A

Investigator(s): A.M. Zelles, D.C. Clooney, S.K. Spence Section, Township, Range: S31 T46N R12E

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave

Slope (%): 1 Lat: 42.4146 Long: -87.8780 Datum: NAD83

Soil Map Unit Name: 298A—Beecher silt loam, 0-2% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Typha angustifolia*	90	Yes	OBL
2. *Phalaris arundinacea*	5	No	FACW
3. *Carex stricta*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 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	95	x 1 =	95
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		105 (B)

Prevalence Index = B/A = 1.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 9A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	95	10YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes x	No ___	Depth (inches): 1
Water Table Present?	Yes x	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes x	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 9B

Investigator(s): A.M. Zelles, D.C. Clooney, S.K. Spence Section, Township, Range: S31 T46N R12E

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): convex

Slope (%): 1 Lat: 42.4144 Long: -87.8782 Datum: NAD83

Soil Map Unit Name: 298A—Beecher silt loam, 0-2% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Festuca elatior*	70	Yes	FACU
2. *Dipsacus laciniatus*	10	No	UPL
3. *Trifolium pratense*	5	No	FACU
4. *Poa pratensis*	5	No	FAC
5. *Plantago rugelii*	5	No	FAC
6. *Taraxacum officinale*	2	No	FACU
7.			
8.			
9.			
10.			
	97 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	77	x 4 =	308
UPL species	10	x 5 =	50
Column Totals:	97 (A)		388 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 9B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	100					Loamy/Clayey	
8-13	10YR 4/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/28/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 10A

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 31, T46N, R12E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): <2 Lat: 42.41734 Long: -87.87641 Datum: NAD 83

Soil Map Unit Name: Ashkum SICL, 0-2% slopes NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**Yes**
Hydric Soil Present?	Yes		
Wetland Hydrology Present?	Yes		

Remarks: Community type is wet meadow.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Cyperus strigosus*	20	Yes	FACW
2. *Agrostis alba*	15	Yes	FACW
3. *Typha angustifolia*	7	No	OBL
4. *Carex sp.*	2	No	-
5.			
6.			
7.			
8.			
9.			
10.			
	44	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- [x] 1-Rapid Test for Hydrophytic Vegetation
- [ ] 2-Dominance Test is >50%
- [ ] 3-Prevalence Index is < or =3.0[1]
- [ ] 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 10A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	95	10YR 4/6	5	C	M	SIL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes Depth (inches): <1

Water Table Present? Yes Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes Depth (inches): 0

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/28/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 10B

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 31, T46N, R12E

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex

Slope (%): <2 Lat: 42.41743 Long: -87.87693 Datum: NAD 83

Soil Map Unit Name: NRCS mapped Ozaukee SIL, revised to Orthent NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	
Hydric Soil Present?	No	**Is the Sampled Area within a Wetland?** **No**
Wetland Hydrology Present?	No	

Remarks: Community type is non-native grassland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Poa pratensis*	60	Yes	FAC
2. *Coronilla varia*	20	No	UPL
3. *Festuca elatior*	15	No	FACU
4. *Taraxacum officinale*	10	No	FACU
5. *Trifolium pratense*	7	No	FACU
6.			
7.			
8.			
9.			
10.			
	112	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- ☐ 1-Rapid Test for Hydrophytic Vegetation
- ☑ 2-Dominance Test is >50%
- ☐ 3-Prevalence Index is < or =3.0[1]
- ☐ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 10B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					SIL	
3-13	10YR 5/3	100					SICL	~5% gravel

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? No Depth (inches): _____

Water Table Present? No Depth (inches): _____

Saturation Present? (includes capillary fringe) No Depth (inches): _____

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 10C

Investigator(s): A.M. Zelles, C.E. Gurley Section, Township, Range: S31, T46N, R12E

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave

Slope (%): 1 Lat: 42.41699 Long: -87.876709 Datum: NAD83

Soil Map Unit Name: 232A—Ashkum silty clay loam, 0-2% slopes (hydric) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex vulpinoidea*	90	Yes	FACW
2. *Phalaris arundinacea*	5	No	FACW
3. *Scirpus cyperinus*	3	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	98 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	95	x 2 =	190
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	98 (A)		193 (B)

Prevalence Index = B/A = 1.97

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 10C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
4-16	10YR 5/1	40	10YR 6/8	30	C	M	Loamy/Clayey	Prominent redox concentrations
4-16	10YR 3/1	30					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- x Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes x	No ___	Depth (inches): 0		
Water Table Present?	Yes ___	No x	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes x	No ___	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturated 0-4 inches, clay below not saturated

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 11C

Investigator(s): C.E. Gurley & A.M. Zelles Section, Township, Range: Section 31, Township 46N, Range 12E

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 1 Lat: 42.421005 Long: -87.872478 Datum: NAD83

Soil Map Unit Name: 531B—Markham silt loam, 2-4% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Abnormally dry conditions in county last 3 months according to U.S. Drought Monitor. South boundary of wetland extended from 2019 boundary - extends farther toward runway. Boundary nearest runway partially drawn using 2025 aerial imagery due to runway safety.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Phragmites australis*	70	Yes	FACW
2. *Carex vulpinoidea*	20	Yes	FACW
3. *Poa pratensis*	5	No	FAC
4.			
5.			
	95 =Total Cover		
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		195 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 11C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 3/1	100					Loamy/Clayey	
4-9	10YR 4/2	88	10YR 5/8	2	C	M	Loamy/Clayey	Prominent redox concentrations
4-9	2.5Y 3/1	10					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- x Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: None

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- x Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes x No ___ Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation near center of wetland indicates occasional flooding.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: UGN Airport - Obstruction Removal and Runway Extension City/County: Waukegan, Lake Co. Sampling Date: 6/20/2025

Applicant/Owner: Waukegan National Airport State: IL Sampling Point: 11D

Investigator(s): C.E. Gurley & A.M Zelles Section, Township, Range: S31, T46N, R12E

Landform (hillside, terrace, etc.): Upland Local relief (concave, convex, none): Convex

Slope (%): 1 Lat: 42.420998 Long: -87.872544 Datum: NAD83

Soil Map Unit Name: 531B—Markham silt loam, 2-4% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No x (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
"Abnormally dry" weather conditions this month according to U.S. Drought Monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Trifolium repens*	45	Yes	FACU
2. *Festuca rubra*	30	Yes	FACU
3. *Poa pratensis*	21	Yes	FAC
4. *Taraxacum officinale*	1	No	FACU
5. *Cirsium arvense*	1	No	FACU
6.			
7.			
8.			
9.			
10.			
	98	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	21	x 3 =	63
FACU species	77	x 4 =	308
UPL species	0	x 5 =	0
Column Totals:	98 (A)		371 (B)

Prevalence Index = B/A = 3.79

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 11D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 5/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 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: Rock fill

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/28/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 14A/15B

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 32, T46N, R12E

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex

Slope (%): <2 Lat: 42.42613 Long: -87.86343 Datum: NAD 83

Soil Map Unit Name: NRCS mapped Ashkum SICL; revised to Orthent NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?** **No**
Hydric Soil Present?	No	
Wetland Hydrology Present?	No	

Remarks: Community type is non-native grassland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Phalaris arundinacea*	60	Yes	FACW
2. *Poa pratensis*	30	Yes	FAC
3. *Carex sp.*	10	No	-
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- ☐ 1-Rapid Test for Hydrophytic Vegetation
- ☑ 2-Dominance Test is >50%
- ☐ 3-Prevalence Index is < or =3.0[1]
- ☐ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 14A/15B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/1	100					SIL	
7-13	10YR 5/3	95	10YR 5/6	5	C	M	SICL	~5% gravel

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? No Depth (inches): _____

Water Table Present? No Depth (inches): _____

Saturation Present? (includes capillary fringe) No Depth (inches): _____

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/28/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 15A

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 32, T46N, R12E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): <2 Lat: 42.42648 Long: -87.86295 Datum: NAD 83

Soil Map Unit Name: Ashkum SICL, 0-2% slopes NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**Yes**
Hydric Soil Present?	Yes		
Wetland Hydrology Present?	Yes		

Remarks: Community type is marsh.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1. *Cornus stolonifera*	5	Yes	FACW
2. *Salix interior*	2	Yes	FACW
3.			
4.			
5.			
	7	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Typha angustifolia*	30	Yes	OBL
2. *Lythrum salicaria*	20	Yes	OBL
3. *Solidago canadensis*	15	No	FACU
4. *Barbarea vulgaris*	8	No	FAC
5. *Helianthus grosseserratus*	8	No	FACW
6. *Phalaris arundinacea*	8	No	FACW
7. *Geum laciniatum*	5	No	FACW
8. *Cirsium arvense*	2	No	FACU
9. *Salix interior*	1	No	FACW
10.			
	97	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

- [x] 1-Rapid Test for Hydrophytic Vegetation
- [ ] 2-Dominance Test is >50%
- [ ] 3-Prevalence Index is < or =3.0[1]
- [ ] 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 15A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	95	10YR 5/6	5	C	M	SICL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes Depth (inches): <6

Water Table Present? Yes Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes Depth (inches): 0

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix B-3

Wetland Floristic Quality Analyses

Floristic Quality Analysis

SITE: Wetland A
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley & A.M. Zelles
NOTES: 6/19/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.20
MEAN C (ALL SPECIES)	1.38
MEAN C (NATIVE TREES)	0.00
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	2.20
FQAI (NATIVE SPECIES)	4.92
FQAI (ALL SPECIES)	3.89
ADJUSTED FQAI	17.39
% C VALUE 0	0.63
% C VALUE 1-3	0.13
% C VALUE 4-6	0.25
% C VALUE 7-10	0.00

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	8
SPECIES RICHNESS (NATIVE)	5
% NON-NATIVE	0.38
WET INDICATOR (ALL)	-0.50
WET INDICATOR (NATIVE)	-0.60
% HYDROPHYTE (MIDWEST)	0.75
% NATIVE PERENNIAL	0.50
% NATIVE ANNUAL	0.13
% ANNUAL	0.13
% PERENNIAL	0.88

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
POPALB	Populus alba	POPULUS ALBA	White Poplar	0	UPL	UPL	2	Tree	Perennial	Adventive
SCICYP	Scirpus cyperinus	Scirpus cyperinus	Cottongrass Bulrush	6	OBL	OBL	-2	Sedge	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native

Floristic Quality Analysis

SITE: Wetland D
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, D.C. Clooney, M.E. Wells
NOTES: July 17, 2024, and Sept 10, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.88
MEAN C (ALL SPECIES)	1.71
MEAN C (NATIVE TREES)	2.75
MEAN C (NATIVE SHRUBS)	3.67
MEAN C (NATIVE HERBACEOUS)	2.88
FQAI (NATIVE SPECIES)	18.43
FQAI (ALL SPECIES)	14.21
ADJUSTED FQAI	22.19
% C VALUE 0	0.49
% C VALUE 1-3	0.25
% C VALUE 4-6	0.23
% C VALUE 7-10	0.03

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	69
SPECIES RICHNESS (NATIVE)	41
% NON-NATIVE	0.41
WET INDICATOR (ALL)	0.33
WET INDICATOR (NATIVE)	-0.02
% HYDROPHYTE (MIDWEST)	0.46
% NATIVE PERENNIAL	0.55
% NATIVE ANNUAL	0.03
% ANNUAL	0.04
% PERENNIAL	0.88

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACHMIL	Achillea millefolium	ACHILLEA MILLEFOLIUM	Common Yarrow	0	FACU	FACU	1	Forb	Perennial	Adventive
agrgry	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
ASCSYR	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	UPL	1	Forb	Perennial	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
CXBEBB	Carex bebbii	Carex bebbii	Bebb's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CENJAC	Centaurea jacea	CENTAUREA JACEA	Brown-Ray Knapweed	0	UPL	FACU	2	Forb	Perennial	Adventive
CIRCAN	Circaea canadensis	Circaea lutetiana canadensis	Broad-Leaf Enchanter's-Nightshade	3	FACU	FACU	1	Forb	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CIRVUL	Cirsium vulgare	CIRSIUM VULGARE	Bull Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
CORSER	Cornus alba	Cornus stolonifera; Cornus baileyi; Cornus sericea	Red Osier	5	FACW	FACW	-1	Shrub	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
DACGLO	Dactylis glomerata	DACTYLIS GLOMERATA	Orchard Grass	0	FACU	FACU	1	Grass	Perennial	Adventive
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
DICHUA	Dichanthelium huachucae	Dichanthelium huachucae	Old-Field Rosette Grass	2	UPL	UPL	2	Grass	Perennial	Native
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2	Forb	Biennial	Adventive
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native

Floristic Quality Analysis

EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4 FACW	FAC	-1 Forb	Perennial	Native
FESRUB	Festuca rubra	FESTUCA RUBRA	Red Fescue	0 FACU	FACU	1 Grass	Perennial	Adventive
FRAVES	Fragaria vesca	FRAGARIA VESCA	Woodland Strawberry	0 UPL	UPL	2 Forb	Perennial	Adventive
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0 FACU	FACU	1 Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4 FACW	FACW	-1 Tree	Perennial	Native
GAIPUL	Gaillardia pulchella	GAILLARDIA PULCHELLA	Firewheel	0 FACU	UPL	1 Forb	Annual	Adventive
GEUCAN	Geum canadense	Geum canadense	White Avens	1 FAC	FAC	0 Forb	Perennial	Native
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0 FACU	FACU	1 Forb	Perennial	Adventive
HELAUT	Helenium autumnale	Helenium autumnale var. canaliculatum	Fall Sneezeweed	5 FACW	FACW	-1 Forb	Perennial	Native
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	4 FACW	FACW	-1 Forb	Perennial	Native
HYPPER	Hypericum perforatum	HYPERICUM PERFORATUM	Common St. John's-Wort	0 FACU	UPL	1 Forb	Perennial	Adventive
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3 FACW	FACW	-1 Forb	Annual	Native
JUGNIG	Juglans nigra	Juglans nigra	Black Walnut	3 FACU	FACU	1 Tree	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0 FAC	FAC	0 Forb	Perennial	Native
JUNVIR	Juniperus virginiana	Juniperus virginiana crebra	Eastern Red-Cedar	0 FACU	FACU	1 Tree	Perennial	Native
LEUVUL	Leucanthemum vulgare	CHRYSANTHEMUM LEUCANTHEMUM PINNATIFIDUM; LEUCANTHEMUM VULGARE VAR. PINNATIFIDUM	Ox-Eye Daisy	0 UPL	UPL	2 Forb	Perennial	Adventive
LOBSIP	Lobelia siphilitica	Lobelia siphilitica	Great Blue Lobelia	4 OBL	FACW	-2 Forb	Perennial	Native
LOLPER	Lolium perenne	LOLIUM PERENNE	Perennial Rye Grass	0 FACU	FACU	1 Grass	Perennial	Adventive
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0 FACU	FACU	1 Shrub	Perennial	Adventive
LOTCOR	Lotus corniculatus	LOTUS CORNICULATUS	Garden Bird's-Foot-Trefoil	0 FACU	FACU	1 Forb	Perennial	Adventive
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0 OBL	OBL	-2 Forb	Perennial	Adventive
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4 FACU	FACU	1 Forb	Perennial	Native
OXASTR	Oxalis stricta	Oxalis europaea	Upright Yellow Wood-Sorrel	0 FACU	FACU	1 Forb	Perennial	Native
PENDIG	Penstemon digitalis	Penstemon digitalis	Foxglove Beardtongue	4 FAC	FAC	0 Forb	Perennial	Native
PHLPRA	Phleum pratense	PHLEUM PRATENSE	Common Timothy	0 FACU	FACU	1 Grass	Perennial	Adventive
PHYOPU	Physocarpus opulifolius	Physocarpus opulifolius	Atlantic Ninebark	5 FACW	FACW	-1 Shrub	Perennial	Native
POAPAS	Poa palustris	Poa palustris	Fowl Blue Grass	7 FACW	FACW	-1 Grass	Perennial	Native
POPALB	Populus alba	POPULUS ALBA	White Poplar	0 UPL	UPL	2 Tree	Perennial	Adventive
POTREC	Potentilla recta	POTENTILLA RECTA	Sulfur Cinquefoil	0 UPL	UPL	2 Forb	Perennial	Adventive
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0 FAC	FAC	0 Forb	Perennial	Adventive
PYRCAL	Pyrus calleryana	PYRUS CALLERYANA	Ornamental Pear	0 UPL	UPL	2 Tree	Perennial	Adventive

Floristic Quality Analysis

RATPIN	Ratibida pinnata	Ratibida pinnata	Yellow Coneflower	4	UPL	UPL	2	Forb	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
RUDHIR	Rudbeckia hirta	Rudbeckia hirta var. pulcherrima	Black-Eyed-Susan	1	FACU	FACU	1	Forb	Perennial	Native
RUDLAC	Rudbeckia laciniata	Rudbeckia laciniata	Green-Head Coneflower	4	FACW	FACW	-1	Forb	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SILTER	Silphium terebinthinaceum	Silphium terebinthinaceum	Prairie Dock	5	FAC	FAC	0	Forb	Perennial	Native
SMIHER	Smilax herbacea	Smilax herbacea	Smooth Carrion-Flower	1	FAC	FAC	0	Forb	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SOLGIG	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	FACW	-1	Forb	Perennial	Native
SOLJUN	Solidago juncea	Solidago juncea	Early Goldenrod	3	UPL	UPL	2	Forb	Perennial	Native
OLIRIG	Solidago rigida	Oligoneuron rigidum	Hard-Leaf Flat-Top-Goldenrod	3	FACU	FACU	1	Forb	Perennial	Native
SYMDRU	Symphyotrichum drummondii	Aster sagittifolius drummondii	Drummond’s Aster	3	UPL	UPL	2	Forb	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
SYMNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
ULMRUB	Ulmus rubra	Ulmus rubra	Slippery Elm	4	FAC	FAC	0	Tree	Perennial	Native
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland E
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, A.M. Tadda, A.M. Zelles
NOTES: June 21, 2024, and Sept 19, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.74
MEAN C (ALL SPECIES)	2.02
MEAN C (NATIVE TREES)	2.75
MEAN C (NATIVE SHRUBS)	3.50
MEAN C (NATIVE HERBACEOUS)	2.61
FQAI (NATIVE SPECIES)	15.95
FQAI (ALL SPECIES)	13.71
ADJUSTED FQAI	23.52
% C VALUE 0	0.41
% C VALUE 1-3	0.33
% C VALUE 4-6	0.20
% C VALUE 7-10	0.07

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	46
SPECIES RICHNESS (NATIVE)	34
% NON-NATIVE	0.26
WET INDICATOR (ALL)	0.15
WET INDICATOR (NATIVE)	-0.06
% HYDROPHYTE (MIDWEST)	0.57
% NATIVE PERENNIAL	0.65
% NATIVE ANNUAL	0.07
% ANNUAL	0.09
% PERENNIAL	0.85

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
AGRGRY	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
ALNINC	Alnus incana	Alnus rugosa	Speckled Alder	8	FACW	FACW	-1	Shrub	Perennial	Native
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual	Native
APOCAN	Apocynum cannabinum	Apocynum sibiricum	Indian-Hemp	2	FAC	FAC	0	Forb	Perennial	Native
ASCSYR	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	UPL	1	Forb	Perennial	Native
CXBEBB	Carex bebbii	Carex bebbii	Bebb's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CXBREV	Carex brevior	Carex brevior	Short-Beak Sedge	3	FAC	FAC	0	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXMUEH	Carex muehlenbergii	Carex muhlenbergii	Muhlenberg's Sedge	4	UPL	UPL	2	Sedge	Perennial	Native
CORSER	Cornus alba	Cornus stolonifera; Cornus baileyi; Cornus sericea	Red Osier	5	FACW	FACW	-1	Shrub	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
ERISTR	Erigeron strigosus	Erigeron strigosus	Prairie Fleabane	5	FACU	FACU	1	Forb	Annual	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native

Floristic Quality Analysis

GEUALE	Geum aleppicum	Geum aleppicum strictum	Yellow Avens	3	FACW	FAC	-1	Forb	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
HYPPER	Hypericum perforatum	HYPERICUM PERFORATUM	Common St. John's-Wort	0	FACU	UPL	1	Forb	Perennial	Adventive
JUGNIG	Juglans nigra	Juglans nigra	Black Walnut	3	FACU	FACU	1	Tree	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
LEUVUL	Leucanthemum vulgare	CHRYSANTHEMUM LEUCANTHEMUM PINNATIFIDUM; LEUCANTHEMUM VULGARE VAR. PINNATIFIDUM	Ox-Eye Daisy	0	UPL	UPL	2	Forb	Perennial	Adventive
LOTCOR	Lotus corniculatus	LOTUS CORNICULATUS	Garden Bird's-Foot-Trefoil	0	FACU	FACU	1	Forb	Perennial	Adventive
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native
MEDLUP	Medicago lupulina	MEDICAGO LUPULINA	Black Medick	0	FACU	FACU	1	Forb	Annual	Adventive
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0	UPL	UPL	2	Forb	Biennial	Adventive
OENBIE	Oenothera biennis	Oenothera biennis	King's-Cureall	0	FACU	FACU	1	Forb	Biennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHYOPU	Physocarpus opulifolius	Physocarpus opulifolius	Atlantic Ninebark	5	FACW	FACW	-1	Shrub	Perennial	Native
POAPAS	Poa palustris	Poa palustris	Fowl Blue Grass	7	FACW	FACW	-1	Grass	Perennial	Native
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial	Native
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
RUBOCC	Rubus occidentalis	Rubus occidentalis	Black Raspberry	0	UPL	UPL	2	Shrub	Perennial	Native
RUDHIR	Rudbeckia hirta	Rudbeckia hirta var. pulcherrima	Black-Eyed-Susan	1	FACU	FACU	1	Forb	Perennial	Native
RUDTRI	Rudbeckia triloba	Rudbeckia triloba	Brown-Eyed-Susan	1	FACU	FACU	1	Forb	Annual	Native
SALINT	Salix interior	Salix interior	Sandbar Willow	2	FACW	FACW	-1	Shrub	Perennial	Native
SOLCAR	Solanum carolinense	SOLANUM CAROLINENSE	Carolina Horse-Nettle	0	FACU	FACU	1	Forb	Perennial	Adventive
SYMDRU	Symphyotrichum drummondii	Aster sagittifolius drummondii	Drummond’s Aster	3	UPL	UPL	2	Forb	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
SYMNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native
ULMRUB	Ulmus rubra	Ulmus rubra	Slippery Elm	4	FAC	FAC	0	Tree	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland F
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, A.M. Tadda, C.E. Gurley
NOTES: June 21, 2024, and Sept 10, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.30
MEAN C (ALL SPECIES)	2.28
MEAN C (NATIVE TREES)	4.20
MEAN C (NATIVE SHRUBS)	4.00
MEAN C (NATIVE HERBACEOUS)	3.04
FQAI (NATIVE SPECIES)	20.87
FQAI (ALL SPECIES)	17.33
ADJUSTED FQAI	27.41
% C VALUE 0	0.38
% C VALUE 1-3	0.29
% C VALUE 4-6	0.28
% C VALUE 7-10	0.05

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	58
SPECIES RICHNESS (NATIVE)	40
% NON-NATIVE	0.31
WET INDICATOR (ALL)	0.05
WET INDICATOR (NATIVE)	-0.23
% HYDROPHYTE (MIDWEST)	0.57
% NATIVE PERENNIAL	0.64
% NATIVE ANNUAL	0.03
% ANNUAL	0.03
% PERENNIAL	0.88

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
AGRGRY	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
AILALT	Ailanthus altissima	AILANTHUS ALTISSIMA	Tree-of-Heaven	0	FACU	UPL	1	Tree	Perennial	Adventive
ALNINC	Alnus incana	Alnus rugosa	Speckled Alder	8	FACW	FACW	-1	Shrub	Perennial	Native
ASCSYR	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	UPL	1	Forb	Perennial	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
CXBEBB	Carex bebbii	Carex bebbii	Bebb's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CIRCAN	Circaea canadensis	Circaea lutetiana canadensis	Broad-Leaf Enchanter's-Nightshade	3	FACU	FACU	1	Forb	Perennial	Native
CORSER	Cornus alba	Cornus stolonifera; Cornus baileyi; Cornus sericea	Red Osier	5	FACW	FACW	-1	Shrub	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne’s Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2	Forb	Biennial	Adventive
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native
ERISTR	Erigeron strigosus	Erigeron strigosus	Prairie Fleabane	5	FACU	FACU	1	Forb	Annual	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FESRUB	Festuca rubra	FESTUCA RUBRA	Red Fescue	0	FACU	FACU	1	Grass	Perennial	Adventive

Floristic Quality Analysis

FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GALTRL	Galium triflorum	Galium triflorum	Fragrant Bedstraw	5	FACU	FACU	1	Forb	Perennial	Native
GEUALE	Geum aleppicum	Geum aleppicum strictum	Yellow Avens	3	FACW	FAC	-1	Forb	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	FACU	1	Forb	Perennial	Adventive
GLYSTR	Glyceria striata	Glyceria striata var. stricta	Fowl Manna Grass	4	OBL	OBL	-2	Grass	Perennial	Native
HELAUT	Helenium autumnale	Helenium autumnale var. canaliculatum	Fall Sneezeweed	5	FACW	FACW	-1	Forb	Perennial	Native
HYPPER	Hypericum perforatum	HYPERICUM PERFORATUM	Common St. John's-Wort	0	FACU	UPL	1	Forb	Perennial	Adventive
JUGNIG	Juglans nigra	Juglans nigra	Black Walnut	3	FACU	FACU	1	Tree	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
LEUVUL	Leucanthemum vulgare	CHRYSANTHEMUM LEUCANTHEMUM PINNATIFIDUM; LEUCANTHEMUM VULGARE VAR. PINNATIFIDUM	Ox-Eye Daisy	0	UPL	UPL	2	Forb	Perennial	Adventive
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0	FACU	FACU	1	Shrub	Perennial	Adventive
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0	UPL	UPL	2	Forb	Biennial	Adventive
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4	FACU	FACU	1	Forb	Perennial	Native
PENDIG	Penstemon digitalis	Penstemon digitalis	Foxglove Beardtongue	4	FAC	FAC	0	Forb	Perennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHYOPU	Physocarpus opulifolius	Physocarpus opulifolius	Atlantic Ninebark	5	FACW	FACW	-1	Shrub	Perennial	Native
POAPAS	Poa palustris	Poa palustris	Fowl Blue Grass	7	FACW	FACW	-1	Grass	Perennial	Native
POPALB	Populus alba	POPULUS ALBA	White Poplar	0	UPL	UPL	2	Tree	Perennial	Adventive
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
QUERUB	Quercus rubra	Quercus rubra	Northern Red Oak	5	FACU	FACU	1	Tree	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
RUBALL	Rubus allegheniensis	Rubus allegheniensis	Allegheny Blackberry	3	FACU	FACU	1	Shrub	Perennial	Native
RUDLAC	Rudbeckia laciniata	Rudbeckia laciniata	Green-Head Coneflower	4	FACW	FACW	-1	Forb	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SALINT	Salix interior	Salix interior	Sandbar Willow	2	FACW	FACW	-1	Shrub	Perennial	Native
SALNIG	Salix nigra	Salix nigra	Black Willow	5	OBL	OBL	-2	Tree	Perennial	Native
solcan	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
OLIRIG	Solidago rigida	Oligoneuron rigidum	Hard-Leaf Flat-Top-Goldenrod	3	FACU	FACU	1	Forb	Perennial	Native
SYMDRU	Symphyotrichum drummondii	Aster sagittifolius drummondii	Drummond’s Aster	3	UPL	UPL	2	Forb	Perennial	Native

Floristic Quality Analysis

SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4 FACW	FAC	-1 Forb	Perennial	Native
SYMNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3 FACW	FACW	-1 Forb	Perennial	Native
ULMRUB	Ulmus rubra	Ulmus rubra	Slippery Elm	4 FAC	FAC	0 Tree	Perennial	Native
VIBLEN	Viburnum lentago	Viburnum lentago	Nanny-Berry	4 FAC	FAC	0 Shrub	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1 FACW	FAC	-1 Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland G
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, A.M. Zelles, M.E. Wells
NOTES: 7/16/2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.27
MEAN C (ALL SPECIES)	1.89
MEAN C (NATIVE TREES)	2.00
MEAN C (NATIVE SHRUBS)	1.00
MEAN C (NATIVE HERBACEOUS)	2.55
FQAI (NATIVE SPECIES)	8.78
FQAI (ALL SPECIES)	8.01
ADJUSTED FQAI	20.69
% C VALUE 0	0.33
% C VALUE 1-3	0.44
% C VALUE 4-6	0.17
% C VALUE 7-10	0.06

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	18
SPECIES RICHNESS (NATIVE)	15
% NON-NATIVE	0.17
WET INDICATOR (ALL)	-0.56
WET INDICATOR (NATIVE)	-0.53
% HYDROPHYTE (MIDWEST)	0.94
% NATIVE PERENNIAL	0.83
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	1.00

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
POAPAS	Poa palustris	Poa palustris	Fowl Blue Grass	7	FACW	FACW	-1	Grass	Perennial	Native
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial	Native
PRUVULL	Prunella vulgaris ssp. lanceolata	Prunella vulgaris lanceolata	Common Selfheal	1	FAC	FAC	0	Forb	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SYMLAN	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	FACW	0	Forb	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
SYMNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland H
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, D.C. Clooney, & A.M. Zelles
NOTES: 6/17/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.26
MEAN C (ALL SPECIES)	2.41
MEAN C (NATIVE TREES)	4.00
MEAN C (NATIVE SHRUBS)	3.00
MEAN C (NATIVE HERBACEOUS)	3.30
FQAI (NATIVE SPECIES)	19.04
FQAI (ALL SPECIES)	16.37
ADJUSTED FQAI	28.07
% C VALUE 0	0.30
% C VALUE 1-3	0.37
% C VALUE 4-6	0.28
% C VALUE 7-10	0.04

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	46
SPECIES RICHNESS (NATIVE)	34
% NON-NATIVE	0.26
WET INDICATOR (ALL)	-0.41
WET INDICATOR (NATIVE)	-0.71
% HYDROPHYTE (MIDWEST)	0.76
% NATIVE PERENNIAL	0.70
% NATIVE ANNUAL	0.04
% ANNUAL	0.07
% PERENNIAL	0.89

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
AGRPAR	Agrimonia parviflora	Agrimonia parviflora	Harvestlice	4	FACW	FAC	-1	Forb	Perennial	Native
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
CXCEPH	Carex cephalophora	Carex cephalophora	Oval-Leaf Sedge	5	FACU	FACU	1	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXMOLE	Carex molesta	Carex molesta	Troublesome Sedge	2	FAC	FAC	0	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CORSER	Cornus alba	Cornus stolonifera; Cornus baileyi; Cornus sericea	Red Osier	5	FACW	FACW	-1	Shrub	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2	Forb	Biennial	Adventive
ELEOBT	Eleocharis obtusa	Eleocharis ovata	Blunt Spike-Rush	3	OBL	OBL	-2	Sedge	Annual	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native

Floristic Quality Analysis

GENAND	Gentiana andrewsii	Gentiana andrewsii	Closed Bottle Gentian	9	FACW	FACW	-1	Forb	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native
PENDIG	Penstemon digitalis	Penstemon digitalis	Foxglove Beardtongue	4	FAC	FAC	0	Forb	Perennial	Native
PERMAC	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0	FACW	FAC	-1	Forb	Annual	Adventive
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHLPRA	Phleum pratense	PHLEUM PRATENSE	Common Timothy	0	FACU	FACU	1	Grass	Perennial	Adventive
POAPAS	Poa palustris	Poa palustris	Fowl Blue Grass	7	FACW	FACW	-1	Grass	Perennial	Native
POAPRA	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0	FAC	FACU	0	Grass	Perennial	Adventive
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
PYCVIR	Pycnanthemum virginianum	Pycnanthemum virginianum	Virginia Mountain-Mint	5	FACW	FACW	-1	Forb	Perennial	Native
PYRCAL	Pyrus calleryana	PYRUS CALLERYANA	Ornamental Pear	0	UPL	UPL	2	Tree	Perennial	Adventive
QUEBIC	Quercus bicolor	Quercus bicolor	Swamp White Oak	5	FACW	FACW	-1	Tree	Perennial	Native
RATPIN	Ratibida pinnata	Ratibida pinnata	Yellow Coneflower	4	UPL	UPL	2	Forb	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
RUDHIR	Rudbeckia hirta	Rudbeckia hirta var. pulcherrima	Black-Eyed-Susan	1	FACU	FACU	1	Forb	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SALDIS	Salix discolor	Salix discolor	Pussy Willow	3	FACW	FACW	-1	Shrub	Perennial	Native
SCHTAB	Schoenoplectus tabernaemontani	Scirpus validus creber	Soft-Stem Club-Rush	3	OBL	OBL	-2	Sedge	Perennial	Native
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
SCICYP	Scirpus cyperinus	Scirpus cyperinus	Cottongrass Bulrush	6	OBL	OBL	-2	Sedge	Perennial	Native
SCIPEN	Scirpus pendulus	Scirpus pendulus	Rufous Bulrush	2	OBL	OBL	-2	Sedge	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SOLRIG	Solidago rigida	Oligoneuron rigidum	Hard-Leaf Flat-Top-Goldenrod	3	FACU	FACU	1	Forb	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
SYMNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native
ULMAME	Ulmus americana	Ulmus americana	American Elm	3	FACW	FACW	-1	Tree	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland I
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, A.M. Tadda, C.E. Gurley, D.C. Clooney
NOTES: July 17, 2024, and Sept 10, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.86
MEAN C (ALL SPECIES)	1.88
MEAN C (NATIVE TREES)	2.71
MEAN C (NATIVE SHRUBS)	3.50
MEAN C (NATIVE HERBACEOUS)	2.90
FQAI (NATIVE SPECIES)	21.38
FQAI (ALL SPECIES)	17.35
ADJUSTED FQAI	23.19
% C VALUE 0	0.45
% C VALUE 1-3	0.28
% C VALUE 4-6	0.25
% C VALUE 7-10	0.02

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	85
SPECIES RICHNESS (NATIVE)	56
% NON-NATIVE	0.34
WET INDICATOR (ALL)	-0.18
WET INDICATOR (NATIVE)	-0.57
% HYDROPHYTE (MIDWEST)	0.66
% NATIVE PERENNIAL	0.60
% NATIVE ANNUAL	0.06
% ANNUAL	0.11
% PERENNIAL	0.84

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACENEG	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
ACESAI	Acer saccharinum	Acer saccharinum	Silver Maple	1	FACW	FACW	-1	Tree	Perennial	Native
AGRGRY	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
AGRPAR	Agrimonia parviflora	Agrimonia parviflora	Harvestlice	4	FACW	FAC	-1	Forb	Perennial	Native
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
ALISUB	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	3	OBL	OBL	-2	Forb	Perennial	Native
ALITRI	Alisma triviale	Alisma triviale	Northern Water-Plantain	3	OBL	OBL	-2	Forb	Perennial	Native
ANECYL	Anemone cylindrica	Anemone cylindrica	Thimbleweed	8	UPL	UPL	2	Forb	Perennial	Native
ARCMIN	Arctium minus	ARCTIUM MINUS	Lesser Burrdock	0	FACU	FACU	1	Forb	Biennial	Adventive
ASCVER	Asclepias verticillata	Asclepias verticillata	Whorled Milkweed	1	FACU	UPL	1	Forb	Perennial	Native
CXBEBB	Carex bebbii	Carex bebbii	Bebb's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CXCRAF	Carex crawfordii	Carex crawfordii	Crawford's Sedge	3	FAC	FACW	0	Sedge	Perennial	Native
CXCRIS	Carex cristatella	Carex cristatella	Crested Sedge	4	FACW	FACW	-1	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CIRVUL	Cirsium vulgare	CIRSIUM VULGARE	Bull Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
CORSER	Cornus alba	Cornus stolonifera; Cornus baileyi; Cornus sericea	Red Osier	5	FACW	FACW	-1	Shrub	Perennial	Native
COROBL	Cornus obliqua	Cornus obliqua	Pale Dogwood	5	FACW	FACW	-1	Shrub	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native

Floristic Quality Analysis

DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0 UPL	UPL	2 Forb	Biennial	Adventive
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0 UPL	FACU	2 Forb	Biennial	Adventive
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0 FACW	FAC	-1 Grass	Annual	Native
ELEOBT	Eleocharis obtusa	Eleocharis ovata	Blunt Spike-Rush	3 OBL	OBL	-2 Sedge	Annual	Native
ELEERY	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii; Eleocharis xyridiformis; Eleocharis macrostachya	Common Spike-Rush	1 OBL	OBL	-2 Sedge	Perennial	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3 OBL	OBL	-2 Forb	Perennial	Native
ERISTR	Erigeron strigosus	Erigeron strigosus	Prairie Fleabane	5 FACU	FACU	1 Forb	Annual	Native
EUPALT	Eupatorium altissimum	Eupatorium altissimum	Tall Boneset	0 UPL	UPL	2 Forb	Perennial	Native
EUPPER	Eupatorium perfoliatum	Eupatorium perfoliatum	Common Boneset	4 OBL	FACW	-2 Forb	Perennial	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4 FACW	FAC	-1 Forb	Perennial	Native
FRAVES	Fragaria vesca	FRAGARIA VESCA	Woodland Strawberry	0 UPL	UPL	2 Forb	Perennial	Adventive
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0 FACU	FACU	1 Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4 FACW	FACW	-1 Tree	Perennial	Native
GAIPUL	Gaillardia pulchella	GAILLARDIA PULCHELLA	Firewheel	0 FACU	UPL	1 Forb	Annual	Adventive
GEUCAN	Geum canadense	Geum canadense	White Avens	1 FAC	FAC	0 Forb	Perennial	Native
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0 FACU	FACU	1 Forb	Perennial	Adventive
HELAUT	Helenium autumnale	Helenium autumnale var. canaliculatum	Fall Sneezeweed	5 FACW	FACW	-1 Forb	Perennial	Native
HYPPER	Hypericum perforatum	HYPERICUM PERFORATUM	Common St. John's-Wort	0 FACU	UPL	1 Forb	Perennial	Adventive
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0 FAC	FAC	0 Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2 FACW	FACW	-1 Forb	Perennial	Native
LEUVUL	Leucanthemum vulgare	CHRYSANTHEMUM LEUCANTHEMUM PINNATIFIDUM; LEUCANTHEMUM VULGARE VAR. PINNATIFIDUM	Ox-Eye Daisy	0 UPL	UPL	2 Forb	Perennial	Adventive
LOBSIP	Lobelia siphilitica	Lobelia siphilitica	Great Blue Lobelia	4 OBL	FACW	-2 Forb	Perennial	Native
LOLPER	Lolium perenne	LOLIUM PERENNE	Perennial Rye Grass	0 FACU	FACU	1 Grass	Perennial	Adventive
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0 FACU	FACU	1 Shrub	Perennial	Adventive
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0 OBL	OBL	-2 Forb	Perennial	Adventive
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0 UPL	UPL	2 Forb	Biennial	Adventive
PANCAP	Panicum capillare	Panicum capillare	Common Panic Grass	0 FAC	FAC	0 Grass	Annual	Native

Floristic Quality Analysis

PARINS	Parthenocissus inserta	Parthenocissus inserta	Thicket-Creeper	0	FACU	FACU	1	Vine	Perennial	Native
PARQUI	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	4	FACU	FACU	1	Vine	Perennial	Native
PENDIG	Penstemon digitalis	Penstemon digitalis	Foxglove Beardtongue	4	FAC	FAC	0	Forb	Perennial	Native
PERMAC	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0	FACW	FAC	-1	Forb	Annual	Adventive
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHYOPU	Physocarpus opulifolius	Physocarpus opulifolius	Atlantic Ninebark	5	FACW	FACW	-1	Shrub	Perennial	Native
PLALAN	Plantago lanceolata	PLANTAGO LANCEOLATA	English Plantain	0	FACU	FACU	1	Forb	Perennial	Adventive
POAPRA	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0	FAC	FACU	0	Grass	Perennial	Adventive
POPALB	Populus alba	POPULUS ALBA	White Poplar	0	UPL	UPL	2	Tree	Perennial	Adventive
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial	Native
POTNOR	Potentilla norvegica	Potentilla norvegica	Norwegian Cinquefoil	0	FAC	FAC	0	Forb	Annual	Native
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
QUEBIC	Quercus bicolor	Quercus bicolor	Swamp White Oak	5	FACW	FACW	-1	Tree	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
RUDHIR	Rudbeckia hirta	Rudbeckia hirta var. pulcherrima	Black-Eyed-Susan	1	FACU	FACU	1	Forb	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SALDIS	Salix discolor	Salix discolor	Pussy Willow	3	FACW	FACW	-1	Shrub	Perennial	Native
SALINT	Salix interior	Salix interior	Sandbar Willow	2	FACW	FACW	-1	Shrub	Perennial	Native
SALNIG	Salix nigra	Salix nigra	Black Willow	5	OBL	OBL	-2	Tree	Perennial	Native
SCHTAB	Schoenoplectus tabernaemontani	Scirpus validus creber	Soft-Stem Club-Rush	3	OBL	OBL	-2	Sedge	Perennial	Native
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
SCICYP	Scirpus cyperinus	Scirpus cyperinus	Cottongrass Bulrush	6	OBL	OBL	-2	Sedge	Perennial	Native
SCIPEN	Scirpus pendulus	Scirpus pendulus	Rufous Bulrush	2	OBL	OBL	-2	Sedge	Perennial	Native
SETPUM	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0	FAC	FAC	0	Grass	Annual	Adventive
SILTER	Silphium terebinthinaceum	Silphium terebinthinaceum	Prairie Dock	5	FAC	FAC	0	Forb	Perennial	Native
SOLDUL	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0	FAC	FAC	0	Vine	Perennial	Adventive
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SOLNEM	Solidago nemoralis	Solidago nemoralis	Gray Goldenrod	3	UPL	UPL	2	Forb	Perennial	Native
SONOLE	Sonchus oleraceus	SONCHUS OLERACEUS	Common Sow-Thistle	0	FACU	FACU	1	Forb	Annual	Adventive
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
SYMNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native
TOXRAD	Toxicodendron radicans	Rhus radicans	Eastern Poison-Ivy	2	FAC	FAC	0	Vine	Perennial	Native
TRIPRA	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0	FACU	FACU	1	Forb	Perennial	Adventive
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
ULMRUB	Ulmus rubra	Ulmus rubra	Slippery Elm	4	FAC	FAC	0	Tree	Perennial	Native
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland J (includes MW-J 2019 and MW-J 2024)
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C. E. Gurley, A.M. Tadda, M.E. Wells
NOTES: July 17, 2024, and Sept 9, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.91
MEAN C (ALL SPECIES)	1.95
MEAN C (NATIVE TREES)	4.00
MEAN C (NATIVE SHRUBS)	3.67
MEAN C (NATIVE HERBACEOUS)	2.81
FQAI (NATIVE SPECIES)	19.06
FQAI (ALL SPECIES)	15.63
ADJUSTED FQAI	23.83
% C VALUE 0	0.44
% C VALUE 1-3	0.30
% C VALUE 4-6	0.23
% C VALUE 7-10	0.03

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	64
SPECIES RICHNESS (NATIVE)	43
% NON-NATIVE	0.33
WET INDICATOR (ALL)	-0.23
WET INDICATOR (NATIVE)	-0.49
% HYDROPHYTE (MIDWEST)	0.67
% NATIVE PERENNIAL	0.53
% NATIVE ANNUAL	0.13
% ANNUAL	0.16
% PERENNIAL	0.80

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
achmil	Achillea millefolium	ACHILLEA MILLEFOLIUM	Common Yarrow	0	FACU	FACU	1	Forb	Perennial	Adventive
agrgry	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
ALITRI	Alisma triviale	Alisma triviale	Northern Water-Plantain	3	OBL	OBL	-2	Forb	Perennial	Native
ANDGER	Andropogon gerardii	Andropogon gerardii	Big Bluestem	5	FAC	FACU	0	Grass	Perennial	Native
APOCAN	Apocynum cannabinum	Apocynum sibiricum	Indian-Hemp	2	FAC	FAC	0	Forb	Perennial	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BIDCER	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	3	OBL	OBL	-2	Forb	Annual	Native
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
CAMTRA	Campanula trachelium	CAMPANULA TRACHELIUM	Throatwort	0	UPL	UPL	2	Forb	Perennial	Adventive
CXBEBB	Carex bebbii	Carex bebbii	Bebb's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CXCRAF	Carex crawfordii	Carex crawfordii	Crawford's Sedge	3	FAC	FACW	0	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXLACU	Carex lacustris	Carex lacustris	Lakebank Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CIRCAN	Circaea canadensis	Circaea lutetiana canadensis	Broad-Leaf Enchanter's-Nightshade	3	FACU	FACU	1	Forb	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CORSER	Cornus alba	Cornus stolonifera; Cornus baileyi; Cornus sericea	Red Osier	5	FACW	FACW	-1	Shrub	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2	Forb	Biennial	Adventive

Floristic Quality Analysis

ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
ELEOBT	Eleocharis obtusa	Eleocharis ovata	Blunt Spike-Rush	3	OBL	OBL	-2	Sedge	Annual	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
EQUARV	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native
ERISTR	Erigeron strigosus	Erigeron strigosus	Prairie Fleabane	5	FACU	FACU	1	Forb	Annual	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAVES	Fragaria vesca	FRAGARIA VESCA	Woodland Strawberry	0	UPL	UPL	2	Forb	Perennial	Adventive
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	FACU	1	Forb	Perennial	Adventive
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	4	FACW	FACW	-1	Forb	Perennial	Native
HYPPER	Hypericum perforatum	HYPERICUM PERFORATUM	Common St. John's-Wort	0	FACU	UPL	1	Forb	Perennial	Adventive
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
LOLPER	Lolium perenne	LOLIUM PERENNE	Perennial Rye Grass	0	FACU	FACU	1	Grass	Perennial	Adventive
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0	FACU	FACU	1	Shrub	Perennial	Adventive
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
PANCAP	Panicum capillare	Panicum capillare	Common Panic Grass	0	FAC	FAC	0	Grass	Annual	Native
PARINT	Parthenium integrifolium	Parthenium integrifolium	Wild Quinine	8	UPL	UPL	2	Forb	Perennial	Native
PARQUI	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	4	FACU	FACU	1	Vine	Perennial	Native
PERHYO	Persicaria hydropiperoides	Polygonum opelousanum adenocalyx	Swamp Smartweed	6	OBL	OBL	-2	Forb	Perennial	Native
PERMAC	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0	FACW	FAC	-1	Forb	Annual	Adventive
PERPUN	Persicaria punctata	Polygonum punctatum	Dotted Smartweed	4	OBL	OBL	-2	Forb	Annual	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHRAUSU	Phragmites australis ssp. australis	PHRAGMITES AUSTRALIS	Common Reed	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHYOPU	Physocarpus opulifolius	Physocarpus opulifolius	Atlantic Ninebark	5	FACW	FACW	-1	Shrub	Perennial	Native
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
RUDHIR	Rudbeckia hirta	Rudbeckia hirta var. pulcherrima	Black-Eyed-Susan	1	FACU	FACU	1	Forb	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SCIPEN	Scirpus pendulus	Scirpus pendulus	Rufous Bulrush	2	OBL	OBL	-2	Sedge	Perennial	Native
EREHIE	Senecio hieraciifolius	Erechtites hieracifolia	American Burnweed	0	FAC	FACU	0	Forb	Annual	Native

Floristic Quality Analysis

SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SONOLE	Sonchus oleraceus	SONCHUS OLERACEUS	Common Sow-Thistle	0	FACU	FACU	1	Forb	Annual	Adventive
SPAPEC	Spartina pectinata	Spartina pectinata	Freshwater Cord Grass	4	FACW	FACW	-1	Grass	Perennial	Native
SYMERI	Symphyotrichum ericoides	Aster ericoides	White Heath American-Aster	6	FACU	FACU	1	Forb	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
SYMNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
ULMRUB	Ulmus rubra	Ulmus rubra	Slippery Elm	4	FAC	FAC	0	Tree	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland L
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, A.M. Zelles
NOTES: 9/24/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.20
MEAN C (ALL SPECIES)	1.29
MEAN C (NATIVE TREES)	0.00
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	2.63
FQAI (NATIVE SPECIES)	6.96
FQAI (ALL SPECIES)	5.34
ADJUSTED FQAI	16.87
% C VALUE 0	0.59
% C VALUE 1-3	0.24
% C VALUE 4-6	0.18
% C VALUE 7-10	0.00

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	17
SPECIES RICHNESS (NATIVE)	10
% NON-NATIVE	0.41
WET INDICATOR (ALL)	-0.88
WET INDICATOR (NATIVE)	-1.30
% HYDROPHYTE (MIDWEST)	0.94
% NATIVE PERENNIAL	0.53
% NATIVE ANNUAL	0.06
% ANNUAL	0.12
% PERENNIAL	0.82

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACENEG	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
CXSTIP	Carex stipata	Carex stipata	Stalk-Grain Sedge	4	OBL	OBL	-2	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CYPESC	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2	Forb	Biennial	Adventive
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
PERAMP	Persicaria amphibia	Polygonum coccineum; Polygonum amphibium stipulaceum	Water Smartweed	4	OBL	OBL	-2	Forb	Perennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHRAUSU	Phragmites australis ssp. australis	PHRAGMITES AUSTRALIS	Common Reed	0	FACW	FACW	-1	Grass	Perennial	Adventive
POAPRA	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0	FAC	FACU	0	Grass	Perennial	Adventive
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SCICYP	Scirpus cyperinus	Scirpus cyperinus	Cottongrass Bulrush	6	OBL	OBL	-2	Sedge	Perennial	Native
SETPUM	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0	FAC	FAC	0	Grass	Annual	Adventive
TYPGLA	Typha X glauca	TYPHA X GLAUCA	Hybrid Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland S
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, C.E. Gurley
NOTES: 6/20/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.50
MEAN C (ALL SPECIES)	2.00
MEAN C (NATIVE TREES)	n/a
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	3.50
FQAI (NATIVE SPECIES)	9.90
FQAI (ALL SPECIES)	7.48
ADJUSTED FQAI	26.46
% C VALUE 0	0.50
% C VALUE 1-3	0.21
% C VALUE 4-6	0.21
% C VALUE 7-10	0.07

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	14
SPECIES RICHNESS (NATIVE)	8
% NON-NATIVE	0.43
WET INDICATOR (ALL)	0.00
WET INDICATOR (NATIVE)	-1.00
% HYDROPHYTE (MIDWEST)	0.57
% NATIVE PERENNIAL	0.57
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	0.93

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACHMIL	Achillea millefolium	ACHILLEA MILLEFOLIUM	Common Yarrow	0	FACU	FACU	1	Forb	Perennial	Adventive
CALSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC	0	Forb	Perennial	Native
CXSCOP	Carex scoparia	Carex scoparia	Pointed Broom Sedge	5	FACW	FACW	-1	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
FESRUB	Festuca rubra	FESTUCA RUBRA	Red Fescue	0	FACU	FACU	1	Grass	Perennial	Adventive
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
LEUVUL	Leucanthemum vulgare	CHRYSANTHEMUM LEUCANTHEMUM PINNATIFIDUM; LEUCANTHEMUM VULGARE VAR. PINNATIFIDUM	Ox-Eye Daisy	0	UPL	UPL	2	Forb	Perennial	Adventive
PHLPRA	Phleum pratense	PHLEUM PRATENSE	Common Timothy	0	FACU	FACU	1	Grass	Perennial	Adventive
POAPAS	Poa palustris	Poa palustris	Fowl Blue Grass	7	FACW	FACW	-1	Grass	Perennial	Native
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
SCICYP	Scirpus cyperinus	Scirpus cyperinus	Cottongrass Bulrush	6	OBL	OBL	-2	Sedge	Perennial	Native
SYMNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native

Floristic Quality Analysis

SITE: Wetland T
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, A.M. Zelles
NOTES: 9/24/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.89
MEAN C (ALL SPECIES)	2.00
MEAN C (NATIVE TREES)	1.33
MEAN C (NATIVE SHRUBS)	0.00
MEAN C (NATIVE HERBACEOUS)	3.67
FQAI (NATIVE SPECIES)	8.67
FQAI (ALL SPECIES)	7.21
ADJUSTED FQAI	24.04
% C VALUE 0	0.46
% C VALUE 1-3	0.15
% C VALUE 4-6	0.38
% C VALUE 7-10	0.00

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	13
SPECIES RICHNESS (NATIVE)	9
% NON-NATIVE	0.31
WET INDICATOR (ALL)	-0.77
WET INDICATOR (NATIVE)	-1.00
% HYDROPHYTE (MIDWEST)	1.00
% NATIVE PERENNIAL	0.62
% NATIVE ANNUAL	0.08
% ANNUAL	0.08
% PERENNIAL	0.92

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACENEG	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
CXCRIS	Carex cristatella	Carex cristatella	Crested Sedge	4	FACW	FACW	-1	Sedge	Perennial	Native
CXSTIP	Carex stipata	Carex stipata	Stalk-Grain Sedge	4	OBL	OBL	-2	Sedge	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial	Native
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
SCICYP	Scirpus cyperinus	Scirpus cyperinus	Cottongrass Bulrush	6	OBL	OBL	-2	Sedge	Perennial	Native

Floristic Quality Analysis

SITE: Wetland X
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, H.D. Lacey, C.E. Gurley, D.C. Clooney
NOTES: July 17, 2024, and Sept 11, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.99
MEAN C (ALL SPECIES)	2.14
MEAN C (NATIVE TREES)	3.83
MEAN C (NATIVE SHRUBS)	4.29
MEAN C (NATIVE HERBACEOUS)	2.75
FQAI (NATIVE SPECIES)	25.16
FQAI (ALL SPECIES)	21.31
ADJUSTED FQAI	25.29
% C VALUE 0	0.41
% C VALUE 1-3	0.26
% C VALUE 4-6	0.29
% C VALUE 7-10	0.03

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	99
SPECIES RICHNESS (NATIVE)	71
% NON-NATIVE	0.28
WET INDICATOR (ALL)	-0.23
WET INDICATOR (NATIVE)	-0.55
% HYDROPHYTE (MIDWEST)	0.64
% NATIVE PERENNIAL	0.59
% NATIVE ANNUAL	0.12
% ANNUAL	0.15
% PERENNIAL	0.77

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
AGRGRY	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
ALISUB	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	3	OBL	OBL	-2	Forb	Perennial	Native
ALITRI	Alisma triviale	Alisma triviale	Northern Water-Plantain	3	OBL	OBL	-2	Forb	Perennial	Native
ALLCAN	Allium canadense	Allium canadense	Meadow Garlic	3	FACU	FACU	1	Forb	Perennial	Native
ALNINC	Alnus incana	Alnus rugosa	Speckled Alder	8	FACW	FACW	-1	Shrub	Perennial	Native
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BIDPOL	Bidens aristosa	Bidens polylepis	Bearded Beggarticks	3	FACW	FACW	-1	Forb	Annual	Native
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
CALSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC	0	Forb	Perennial	Native
CARNUT	Carduus nutans	CARDUUS NUTANS	Nodding Plumeless-Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
CXBEBB	Carex bebbii	Carex bebbii	Bebb's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CXCEPH	Carex cephalophora	Carex cephalophora	Oval-Leaf Sedge	5	FACU	FACU	1	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CAROVT	Carya ovata	Carya ovata	Shag-Bark Hickory	5	FACU	FACU	1	Tree	Perennial	Native
CENSTO	Centaurea stoebe ssp. micranthos	CENTAUREA MACULOSA	Spotted Knapweed	0	UPL	UPL	2	Forb	Biennial	Adventive
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CIRVUL	Cirsium vulgare	CIRSIUM VULGARE	Bull Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
CORSER	Cornus alba	Cornus stolonifera; Cornus baileyi; Cornus sericea	Red Osier	5	FACW	FACW	-1	Shrub	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive

Floristic Quality Analysis

ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
ELYVIR	Elymus virginicus	Elymus virginicus	Virginia Wild Rye	3	FACW	FACW	-1	Grass	Perennial	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
EQUARV	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native
EUOFOR	Euonymus hederaceus	EUONYMUS FORTUNEI	Climbing Euonymus	0	UPL	UPL	2	Shrub	Perennial	Adventive
EUPPER	Eupatorium perfoliatum	Eupatorium perfoliatum	Common Boneset	4	OBL	FACW	-2	Forb	Perennial	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GEUALE	Geum aleppicum	Geum aleppicum strictum	Yellow Avens	3	FACW	FAC	-1	Forb	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
GLYSTR	Glyceria striata	Glyceria striata var. stricta	Fowl Manna Grass	4	OBL	OBL	-2	Grass	Perennial	Native
HACVIR	Hackelia virginiana	Hackelia virginiana	Beggar's-Lice	1	FACU	FACU	1	Forb	Perennial	Native
HELAUT	Helenium autumnale	Helenium autumnale var. canaliculatum	Fall Sneezeweed	5	FACW	FACW	-1	Forb	Perennial	Native
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	4	FACW	FACW	-1	Forb	Perennial	Native
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
JUNEFF	Juncus effusus ssp. solutus	Juncus effusus	Lamp Rush	5	OBL	OBL	-2	Forb	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
LEEORY	Leersia oryzoides	Leersia oryzoides	Rice Cut Grass	3	OBL	OBL	-2	Grass	Perennial	Native
LEMMIO	Lemna minor	Lemna minor	Common Duckweed	5	OBL	OBL	-2	Forb	Annual	Native
LEPVIR	Lepidium virginicum	Lepidium virginicum	Poorman's-Pepperwort	0	FACU	FACU	1	Forb	Annual	Native
LEUVUL	Leucanthemum vulgare	CHRYSANTHEMUM LEUCANTHEMUM PINNATIFIDUM; LEUCANTHEMUM VULGARE VAR. PINNATIFIDUM	Ox-Eye Daisy	0	UPL	UPL	2	Forb	Perennial	Adventive
LOBSIP	Lobelia siphilitica	Lobelia siphilitica	Great Blue Lobelia	4	OBL	FACW	-2	Forb	Perennial	Native
LOLPER	Lolium perenne	LOLIUM PERENNE	Perennial Rye Grass	0	FACU	FACU	1	Grass	Perennial	Adventive
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0	FACU	FACU	1	Shrub	Perennial	Adventive
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0	UPL	UPL	2	Forb	Biennial	Adventive

Floristic Quality Analysis

MENARV	Mentha arvensis	Mentha arvensis villosa; Mentha arvensis subsp. parietariaefolia; Mentha canadensis	American Wild Mint	5 FACW	FACW	-1 Forb	Perennial	Native
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4 FACU	FACU	1 Forb	Perennial	Native
OXASTR	Oxalis stricta	Oxalis europaea	Upright Yellow Wood-Sorrel	0 FACU	FACU	1 Forb	Perennial	Native
PANCAP	Panicum capillare	Panicum capillare	Common Panic Grass	0 FAC	FAC	0 Grass	Annual	Native
PARQUI	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	4 FACU	FACU	1 Vine	Perennial	Native
PERMAC	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0 FACW	FAC	-1 Forb	Annual	Adventive
PERPEN	Persicaria pensylvanica	Polygonum pensylvanicum	Pinkweed	0 FACW	FACW	-1 Forb	Annual	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0 FACW	FACW	-1 Grass	Perennial	Adventive
PHRAUSU	Phragmites australis ssp. australis	PHRAGMITES AUSTRALIS	Common Reed	0 FACW	FACW	-1 Grass	Perennial	Adventive
PHYOPU	Physocarpus opulifolius	Physocarpus opulifolius	Atlantic Ninebark	5 FACW	FACW	-1 Shrub	Perennial	Native
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0 FAC	FAC	0 Tree	Perennial	Native
POTNOR	Potentilla norvegica	Potentilla norvegica	Norwegian Cinquefoil	0 FAC	FAC	0 Forb	Annual	Native
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0 FAC	FAC	0 Forb	Perennial	Adventive
PRUVIR	Prunus virginiana	Prunus virginiana	Choke Cherry	3 FACU	FACU	1 Shrub	Perennial	Native
QUEELL	Quercus ellipsoidalis	Quercus ellipsoidalis	Hill's Oak	4 UPL	UPL	2 Tree	Perennial	Native
QUEMAC	Quercus macrocarpa	Quercus macrocarpa	Burr Oak	5 FAC	FACU	0 Tree	Perennial	Native
RANSCE	Ranunculus sceleratus	Ranunculus sceleratus	Cursed Buttercup	4 OBL	OBL	-2 Forb	Annual	Native
RATPIN	Ratibida pinnata	Ratibida pinnata	Yellow Coneflower	4 UPL	UPL	2 Forb	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0 FAC	FAC	0 Shrub	Perennial	Adventive
RORPAL	Rorippa palustris	0	Bog Yellowcress	4 OBL	OBL	-2 Forb	Perennial	Native
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0 FACU	FACU	1 Shrub	Perennial	Adventive
RUBALL	Rubus allegheniensis	Rubus allegheniensis	Allegheny Blackberry	3 FACU	FACU	1 Shrub	Perennial	Native
RUDHIR	Rudbeckia hirta	Rudbeckia hirta var. pulcherrima	Black-Eyed-Susan	1 FACU	FACU	1 Forb	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0 FAC	FAC	0 Forb	Perennial	Adventive
SALINT	Salix interior	Salix interior	Sandbar Willow	2 FACW	FACW	-1 Shrub	Perennial	Native
SALNIG	Salix nigra	Salix nigra	Black Willow	5 OBL	OBL	-2 Tree	Perennial	Native
SAMCAN	Sambucus nigra ssp. canadensis	Sambucus canadensis	Black Elder	4 FAC	FACW	-1 Shrub	Perennial	Native
SCHTAB	Schoenoplectus tabernaemontani	Scirpus validus creber	Soft-Stem Club-Rush	3 OBL	OBL	-2 Sedge	Perennial	Native
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4 OBL	OBL	-2 Sedge	Perennial	Native
SCICYP	Scirpus cyperinus	Scirpus cyperinus	Cottongrass Bulrush	6 OBL	OBL	-2 Sedge	Perennial	Native
SCIPEN	Scirpus pendulus	Scirpus pendulus	Rufous Bulrush	2 OBL	OBL	-2 Sedge	Perennial	Native
EREHIE	Senecio hieraciifolius	Erechtites hieracifolia	American Burnweed	0 FAC	FACU	0 Forb	Annual	Native
SILLAT	Silene latifolia	LYCHNIS ALBA	White Campion	0 UPL	UPL	2 Forb	Annual	Adventive
SMIHER	Smilax herbacea	Smilax herbacea	Smooth Carrion-Flower	1 FAC	FAC	0 Forb	Perennial	Native
SOLDUL	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0 FAC	FAC	0 Vine	Perennial	Adventive
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1 FACU	FACU	1 Forb	Perennial	Native
SONARV	Sonchus arvensis	SONCHUS ARVENSIS	Field Sow-Thistle	0 FACU	FACU	1 Forb	Perennial	Adventive
SONASP	Sonchus asper	SONCHUS ASPER	Spiny-Leaf Sow-Thistle	0 FACU	FACU	1 Forb	Annual	Adventive

Floristic Quality Analysis

SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
SYMSER	Symphyotrichum sericeum	Aster sericeus	Silky Aster	10	UPL	UPL	2	Forb	Perennial	Native
TRABRA	Tradescantia bracteata	TRADESCANTIA BRACTEATA	Prairie Spiderwort	0	UPL	UPL	2	Forb	Perennial	Adventive
TRIREP	Trifolium repens	TRIFOLIUM REPENS	White Clover	0	FACU	FACU	1	Forb	Perennial	Adventive
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
TYPLAT	Typha latifolia	Typha latifolia	Broad-Leaf Cat-Tail	5	OBL	OBL	-2	Forb	Perennial	Native
VERBLA	Verbascum blattaria	VERBASCUM BLATTARIA	White Moth Mullein	0	FACU	FACU	1	Forb	Biennial	Adventive
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland Y (Includes previous Wetlands K and 13)
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, D.C. Clooney, A.M. Tadda, M.E. Wells, C.E. Gurley
NOTES: June 18, July 18, and Sept 11, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.25
MEAN C (ALL SPECIES)	2.51
MEAN C (NATIVE TREES)	3.13
MEAN C (NATIVE SHRUBS)	4.20
MEAN C (NATIVE HERBACEOUS)	3.20
FQAI (NATIVE SPECIES)	33.28
FQAI (ALL SPECIES)	29.24
ADJUSTED FQAI	28.54
% C VALUE 0	0.34
% C VALUE 1-3	0.29
% C VALUE 4-6	0.31
% C VALUE 7-10	0.06

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	136
SPECIES RICHNESS (NATIVE)	105
% NON-NATIVE	0.23
WET INDICATOR (ALL)	-0.21
WET INDICATOR (NATIVE)	-0.42
% HYDROPHYTE (MIDWEST)	0.64
% NATIVE PERENNIAL	0.66
% NATIVE ANNUAL	0.09
% ANNUAL	0.12
% PERENNIAL	0.82

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
aceneg	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
ACESAI	Acer saccharinum	Acer saccharinum	Silver Maple	1	FACW	FACW	-1	Tree	Perennial	Native
AGRGRY	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
AGRPAR	Agrimonia parviflora	Agrimonia parviflora	Harvestlice	4	FACW	FAC	-1	Forb	Perennial	Native
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
ALISUB	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	3	OBL	OBL	-2	Forb	Perennial	Native
ALLCAN	Allium canadense	Allium canadense	Meadow Garlic	3	FACU	FACU	1	Forb	Perennial	Native
ALLCER	Allium cernuum	Allium cernuum	Nodding Onion	7	FACU	FACU	1	Forb	Perennial	Native
ALNINC	Alnus incana	Alnus rugosa	Speckled Alder	8	FACW	FACW	-1	Shrub	Perennial	Native
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual	Native
ASCINC	Asclepias incarnata	Asclepias incarnata	Swamp Milkweed	3	OBL	OBL	-2	Forb	Perennial	Native
ATHFIL	Athyrium filix-femina ssp. angustum	Athyrium filix-femina michauxii	Subarctic Lady Fern	8	FAC	FAC	0	Fern	Perennial	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BIDPOL	Bidens aristosa	Bidens polylepis	Bearded Beggarticks	3	FACW	FACW	-1	Forb	Annual	Native
BIDCER	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	3	OBL	OBL	-2	Forb	Annual	Native
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
CALSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC	0	Forb	Perennial	Native
CARNUT	Carduus nutans	CARDUUS NUTANS	Nodding Plumeless-Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
CXBEBB	Carex bebbii	Carex bebbii	Bebb's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CXCEPH	Carex cephalophora	Carex cephalophora	Oval-Leaf Sedge	5	FACU	FACU	1	Sedge	Perennial	Native
CXCRIS	Carex cristatella	Carex cristatella	Crested Sedge	4	FACW	FACW	-1	Sedge	Perennial	Native

Floristic Quality Analysis

CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXLACU	Carex lacustris	Carex lacustris	Lakebank Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
CXMOLE	Carex molesta	Carex molesta	Troublesome Sedge	2	FAC	FAC	0	Sedge	Perennial	Native
CXPELL	Carex pellita	Carex pellita	Woolly Sedge	4	OBL	OBL	-2	Sedge	Perennial	Native
CXSCOP	Carex scoparia	Carex scoparia	Pointed Broom Sedge	5	FACW	FACW	-1	Sedge	Perennial	Native
CXSTIP	Carex stipata	Carex stipata	Stalk-Grain Sedge	4	OBL	OBL	-2	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CAROVT	Carya ovata	Carya ovata	Shag-Bark Hickory	5	FACU	FACU	1	Tree	Perennial	Native
CENJAC	Centaurea jacea	CENTAUREA JACEA	Brown-Ray Knapweed	0	UPL	FACU	2	Forb	Perennial	Adventive
CIRCAN	Circaea canadensis	Circaea lutetiana canadensis	Broad-Leaf Enchanter's-Nightshade	3	FACU	FACU	1	Forb	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CIRDIS	Cirsium discolor	Cirsium discolor	Field Thistle	3	FACU	UPL	1	Forb	Biennial	Native
CIRVUL	Cirsium vulgare	CIRSIUM VULGARE	Bull Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
CORSER	Cornus alba	Cornus stolonifera; Cornus baileyi; Cornus sericea	Red Osier	5	FACW	FACW	-1	Shrub	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
CRYCAN	Cryptotaenia canadensis	Cryptotaenia canadensis	Canadian Honewort	4	FAC	FAC	0	Forb	Perennial	Native
CYPSTR	Cyperus strigosus	Cyperus strigosus	Straw-Color Flat Sedge	1	FACW	FACW	-1	Sedge	Perennial	Native
daucar	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
ELAANG	Elaeagnus angustifolia	ELAEAGNUS ANGUSTIFOLIA	Russian-Olive	0	FACU	FACU	1	Shrub	Perennial	Adventive
ELEACI	Eleocharis acicularis	Eleocharis acicularis	Needle Spike-Rush	3	OBL	OBL	-2	Sedge	Perennial	Native
ELEOBT	Eleocharis obtusa	Eleocharis ovata	Blunt Spike-Rush	3	OBL	OBL	-2	Sedge	Annual	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
EQUARV	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native
ERISTR	Erigeron strigosus	Erigeron strigosus	Prairie Fleabane	5	FACU	FACU	1	Forb	Annual	Native
EUPPER	Eupatorium perfoliatum	Eupatorium perfoliatum	Common Boneset	4	OBL	FACW	-2	Forb	Perennial	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GAIPUL	Gaillardia pulchella	GAILLARDIA PULCHELLA	Firewheel	0	FACU	UPL	1	Forb	Annual	Adventive
GEUALE	Geum aleppicum	Geum aleppicum strictum	Yellow Avens	3	FACW	FAC	-1	Forb	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	FACU	1	Forb	Perennial	Adventive
GLYSTR	Glyceria striata	Glyceria striata var. stricta	Fowl Manna Grass	4	OBL	OBL	-2	Grass	Perennial	Native
HACVIR	Hackelia virginiana	Hackelia virginiana	Beggar's-Lice	1	FACU	FACU	1	Forb	Perennial	Native

Floristic Quality Analysis

HELAUT	Helenium autumnale	Helenium autumnale var. canaliculatum	Fall Sneezeweed	5	FACW	FACW	-1	Forb	Perennial	Native
HELDIV	Helianthus divaricatus	Helianthus divaricatus	Woodland Sunflower	5	UPL	UPL	2	Forb	Perennial	Native
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	4	FACW	FACW	-1	Forb	Perennial	Native
HELHIR	Helianthus hirsutus	Helianthus hirsutus	Hispid Sunflower	7	UPL	UPL	2	Forb	Perennial	Native
HYPPER	Hypericum perforatum	HYPERICUM PERFORATUM	Common St. John's-Wort	0	FACU	UPL	1	Forb	Perennial	Adventive
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
JUNEFF	Juncus effusus ssp. solutus	Juncus effusus	Lamp Rush	5	OBL	OBL	-2	Forb	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
LACCAN	Lactuca canadensis	Lactuca canadensis	Canadian Blue Lettuce	1	FACU	FACU	1	Forb	Biennial	Native
LEEORY	Leersia oryzoides	Leersia oryzoides	Rice Cut Grass	3	OBL	OBL	-2	Grass	Perennial	Native
LEUVUL	Leucanthemum vulgare	CHRYSANTHEMUM LEUCANTHEMUM PINNATIFIDUM; LEUCANTHEMUM VULGARE VAR. PINNATIFIDUM	Ox-Eye Daisy	0	UPL	UPL	2	Forb	Perennial	Adventive
LOBSIP	Lobelia siphilitica	Lobelia siphilitica	Great Blue Lobelia	4	OBL	FACW	-2	Forb	Perennial	Native
LOLPER	Lolium perenne	LOLIUM PERENNE	Perennial Rye Grass	0	FACU	FACU	1	Grass	Perennial	Adventive
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0	FACU	FACU	1	Shrub	Perennial	Adventive
LUDPAL	Ludwigia palustris	Ludwigia palustris americana	Marsh Primrose-Willow	3	OBL	OBL	-2	Forb	Perennial	Native
LUDPOL	Ludwigia polycarpa	Ludwigia polycarpa	Many-Fruit Primrose-Willow	6	OBL	OBL	-2	Forb	Perennial	Native
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
MAIRAC	Maianthemum racemosum	Smilacina racemosa	Feathery False Solomon's-Seal	5	FACU	FACU	1	Forb	Perennial	Native
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0	UPL	UPL	2	Forb	Biennial	Adventive
MENARV	Mentha arvensis	Mentha arvensis villosa; Mentha arvensis subsp. parietariaefolia; Mentha canadensis	American Wild Mint	5	FACW	FACW	-1	Forb	Perennial	Native
MIMRIN	Mimulus ringens	Mimulus ringens	Allegheny Monkey-Flower	4	OBL	OBL	-2	Forb	Perennial	Native
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4	FACU	FACU	1	Forb	Perennial	Native
MUHSCH	Muhlenbergia schreberi	Muhlenbergia schreberi	Nimblewill	0	FAC	FAC	0	Grass	Perennial	Native
ONOSEN	Onoclea sensibilis	Onoclea sensibilis	Sensitive Fern	5	FACW	FACW	-1	Fern	Perennial	Native
OXASTR	Oxalis stricta	Oxalis europaea	Upright Yellow Wood-Sorrel	0	FACU	FACU	1	Forb	Perennial	Native
PARINT	Parthenium integrifolium	Parthenium integrifolium	Wild Quinine	8	UPL	UPL	2	Forb	Perennial	Native
PARINS	Parthenocissus inserta	Parthenocissus inserta	Thicket-Creeper	0	FACU	FACU	1	Vine	Perennial	Native
PARQUI	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	4	FACU	FACU	1	Vine	Perennial	Native
PENDIG	Penstemon digitalis	Penstemon digitalis	Foxglove Beardtongue	4	FAC	FAC	0	Forb	Perennial	Native

Floristic Quality Analysis

PENSED	Penthorum sedoides	Penthorum sedoides	Ditch-Stonecrop	4 OBL	OBL	-2 Forb	Perennial	Native
PERMAC	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0 FACW	FAC	-1 Forb	Annual	Adventive
PERPEN	Persicaria pensylvanica	Polygonum pensylvanicum	Pinkweed	0 FACW	FACW	-1 Forb	Annual	Native
PERSAG	Persicaria sagittata	Polygonum sagittatum; Tracaulon sagittatum	Arrow-Leaf Tearthumb	7 OBL	OBL	-2 Forb	Annual	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0 FACW	FACW	-1 Grass	Perennial	Adventive
PHRAUSU	Phragmites australis ssp. australis	PHRAGMITES AUSTRALIS	Common Reed	0 FACW	FACW	-1 Grass	Perennial	Adventive
PHYOPU	Physocarpus opulifolius	Physocarpus opulifolius	Atlantic Ninebark	5 FACW	FACW	-1 Shrub	Perennial	Native
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0 FAC	FAC	0 Tree	Perennial	Native
POTNOR	Potentilla norvegica	Potentilla norvegica	Norwegian Cinquefoil	0 FAC	FAC	0 Forb	Annual	Native
PRUVUV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0 FAC	FAC	0 Forb	Perennial	Adventive
QUEBIC	Quercus bicolor	Quercus bicolor	Swamp White Oak	5 FACW	FACW	-1 Tree	Perennial	Native
QUEMAC	Quercus macrocarpa	Quercus macrocarpa	Burr Oak	5 FAC	FACU	0 Tree	Perennial	Native
RATPIN	Ratibida pinnata	Ratibida pinnata	Yellow Coneflower	4 UPL	UPL	2 Forb	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0 FAC	FAC	0 Shrub	Perennial	Adventive
RHUGLA	Rhus glabra	Rhus glabra	Smooth Sumac	1 UPL	UPL	2 Shrub	Perennial	Native
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0 FACU	FACU	1 Shrub	Perennial	Adventive
RUBALL	Rubus allegheniensis	Rubus allegheniensis	Allegheny Blackberry	3 FACU	FACU	1 Shrub	Perennial	Native
RUDHIR	Rudbeckia hirta	Rudbeckia hirta var. pulcherrima	Black-Eyed-Susan	1 FACU	FACU	1 Forb	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0 FAC	FAC	0 Forb	Perennial	Adventive
SALDIS	Salix discolor	Salix discolor	Pussy Willow	3 FACW	FACW	-1 Shrub	Perennial	Native
SALINT	Salix interior	Salix interior	Sandbar Willow	2 FACW	FACW	-1 Shrub	Perennial	Native
SALNIG	Salix nigra	Salix nigra	Black Willow	5 OBL	OBL	-2 Tree	Perennial	Native
SALSEC	Salix sericea	Salix sericea	Silky Willow	10 OBL	OBL	-2 Shrub	Perennial	Native
SCHTAB	Schoenoplectus tabernaemontani	Scirpus validus creber	Soft-Stem Club-Rush	3 OBL	OBL	-2 Sedge	Perennial	Native
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4 OBL	OBL	-2 Sedge	Perennial	Native
SCIPEN	Scirpus pendulus	Scirpus pendulus	Rufous Bulrush	2 OBL	OBL	-2 Sedge	Perennial	Native
EREHIE	Senecio hieraciifolius	Erechtites hieracifolia	American Burnweed	0 FAC	FACU	0 Forb	Annual	Native
SETPUM	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0 FAC	FAC	0 Grass	Annual	Adventive
SILINT	Silphium integrifolium	Silphium integrifolium var. deamii; Silphium integrifolium var. neglectum	Entire-Leaf Rosinweed	5 UPL	FAC	2 Forb	Perennial	Native
SOLCAR	Solanum carolinense	SOLANUM CAROLINENSE	Carolina Horse-Nettle	0 FACU	FACU	1 Forb	Perennial	Adventive
SOLDUL	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0 FAC	FAC	0 Vine	Perennial	Adventive
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1 FACU	FACU	1 Forb	Perennial	Native
SOLJUN	Solidago juncea	Solidago juncea	Early Goldenrod	3 UPL	UPL	2 Forb	Perennial	Native
SONASP	Sonchus asper	SONCHUS ASPER	Spiny-Leaf Sow-Thistle	0 FACU	FACU	1 Forb	Annual	Adventive
SORNUT	Sorghastrum nutans	Sorghastrum nutans	Yellow Indian Grass	5 FACU	FACU	1 Grass	Perennial	Native
SPAPEC	Spartina pectinata	Spartina pectinata	Freshwater Cord Grass	4 FACW	FACW	-1 Grass	Perennial	Native
SYMDRU	Symphyotrichum drummondii	Aster sagittifolius drummondii	Drummond’s Aster	3 UPL	UPL	2 Forb	Perennial	Native
SYMLAN	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3 FAC	FACW	0 Forb	Perennial	Native

Floristic Quality Analysis

SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
SYMNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native
SYMPIL	Symphyotrichum pilosum	Aster pilosus	White Oldfield American-Aster	0	FACU	FACU	1	Forb	Perennial	Native
TRIPRA	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0	FACU	FACU	1	Forb	Perennial	Adventive
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VERTHA	Verbascum thapsus	VERBASCUM THAPSUS	Woolly Mullein	0	UPL	UPL	2	Forb	Biennial	Adventive
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native
VIBDEN	Viburnum dentatum	VIBURNUM DENTATUM VAR. SCABRELLUM	Southern Arrow-Wood	0	FAC	FAC	0	Shrub	Perennial	Adventive
VIBLEN	Viburnum lentago	Viburnum lentago	Nanny-Berry	4	FAC	FAC	0	Shrub	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland Z
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, A.M. Zelles, A.M. Tadda
NOTES: July 17, 2024, and Sept 9, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.68
MEAN C (ALL SPECIES)	1.74
MEAN C (NATIVE TREES)	2.25
MEAN C (NATIVE SHRUBS)	3.00
MEAN C (NATIVE HERBACEOUS)	2.81
FQAI (NATIVE SPECIES)	14.17
FQAI (ALL SPECIES)	11.44
ADJUSTED FQAI	21.61
% C VALUE 0	0.51
% C VALUE 1-3	0.28
% C VALUE 4-6	0.16
% C VALUE 7-10	0.05

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	43
SPECIES RICHNESS (NATIVE)	28
% NON-NATIVE	0.35
WET INDICATOR (ALL)	0.26
WET INDICATOR (NATIVE)	-0.07
% HYDROPHYTE (MIDWEST)	0.49
% NATIVE PERENNIAL	0.58
% NATIVE ANNUAL	0.05
% ANNUAL	0.05
% PERENNIAL	0.84

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
agrgry	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
agrgig	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CIRCAN	Circaea canadensis	Circaea lutetiana canadensis	Broad-Leaf Enchanter's-Nightshade	3	FACU	FACU	1	Forb	Perennial	Native
CORSER	Cornus alba	Cornus stolonifera; Cornus baileyi; Cornus sericea	Red Osier	5	FACW	FACW	-1	Shrub	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne’s Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2	Forb	Biennial	Adventive
ELAUMB	Elaeagnus umbellata	ELAEAGNUS UMBELLATA	Autumn-Olive	0	UPL	UPL	2	Shrub	Perennial	Adventive
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native
EUTGRA	Euthamia graminifolia	Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAVES	Fragaria vesca	FRAGARIA VESCA	Woodland Strawberry	0	UPL	UPL	2	Forb	Perennial	Adventive
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native

Solidago graminifolia; Solidago graminifolia nuttallii;

Floristic Quality Analysis

FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GALSPU	Galium aparine	Galium spurium	Sticky-Willy	0	FACU	FACU	1	Forb	Annual	Native
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	4	FACW	FACW	-1	Forb	Perennial	Native
HYPPER	Hypericum perforatum	HYPERICUM PERFORATUM	Common St. John's-Wort	0	FACU	UPL	1	Forb	Perennial	Adventive
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
JUNVIR	Juniperus virginiana	Juniperus virginiana crebra	Eastern Red-Cedar	0	FACU	FACU	1	Tree	Perennial	Native
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0	FACU	FACU	1	Shrub	Perennial	Adventive
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0	UPL	UPL	2	Forb	Biennial	Adventive
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
POACOM	Poa compressa	POA COMPRESSA	Flat-Stem Blue Grass	0	FACU	FACU	1	Grass	Perennial	Adventive
POAPAS	Poa palustris	Poa palustris	Fowl Blue Grass	7	FACW	FACW	-1	Grass	Perennial	Native
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial	Native
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
SALNIG	Salix nigra	Salix nigra	Black Willow	5	OBL	OBL	-2	Tree	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SOLJUN	Solidago juncea	Solidago juncea	Early Goldenrod	3	UPL	UPL	2	Forb	Perennial	Native
SOLRID	Solidago riddellii	Oligoneuron riddellii	Riddell's Goldenrod	8	OBL	OBL	-2	Forb	Perennial	Native
OLIRIG	Solidago rigida	Oligoneuron rigidum	Hard-Leaf Flat-Top-Goldenrod	3	FACU	FACU	1	Forb	Perennial	Native
SYMDRU	Symphyotrichum drummondii	Aster sagittifolius drummondii	Drummond’s Aster	3	UPL	UPL	2	Forb	Perennial	Native
SYMERI	Symphyotrichum ericoides	Aster ericoides	White Heath American-Aster	6	FACU	FACU	1	Forb	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
SYMNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native
TAROFF	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	FACU	1	Forb	Perennial	Adventive
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland AA
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: D.C. Clooney, C.E. Gurley, A.M. Zelles, A.M. Tadda
NOTES: July 17, 2024, and Sept 10, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.53
MEAN C (ALL SPECIES)	1.42
MEAN C (NATIVE TREES)	2.00
MEAN C (NATIVE SHRUBS)	3.25
MEAN C (NATIVE HERBACEOUS)	2.52
FQAI (NATIVE SPECIES)	14.32
FQAI (ALL SPECIES)	10.73
ADJUSTED FQAI	18.97
% C VALUE 0	0.54
% C VALUE 1-3	0.19
% C VALUE 4-6	0.26
% C VALUE 7-10	0.00

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	57
SPECIES RICHNESS (NATIVE)	32
% NON-NATIVE	0.44
WET INDICATOR (ALL)	0.00
WET INDICATOR (NATIVE)	-0.59
% HYDROPHYTE (MIDWEST)	0.61
% NATIVE PERENNIAL	0.46
% NATIVE ANNUAL	0.09
% ANNUAL	0.09
% PERENNIAL	0.81

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
AGRPAR	Agrimonia parviflora	Agrimonia parviflora	Harvestlice	4	FACW	FAC	-1	Forb	Perennial	Native
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CIRVUL	Cirsium vulgare	CIRSIUM VULGARE	Bull Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
CORSER	Cornus alba	Cornus stolonifera; Cornus baileyi; Cornus sericea	Red Osier	5	FACW	FACW	-1	Shrub	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2	Forb	Biennial	Adventive
ELEPAL	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii; Eleocharis xyridiformis; Eleocharis macrostachya	Common Spike-Rush	1	OBL	OBL	-2	Sedge	Perennial	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native
ERISTR	Erigeron strigosus	Erigeron strigosus	Prairie Fleabane	5	FACU	FACU	1	Forb	Annual	Native

Floristic Quality Analysis

EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4 FACW	FAC	-1 Forb	Perennial	Native
FRAVES	Fragaria vesca	FRAGARIA VESCA	Woodland Strawberry	0 UPL	UPL	2 Forb	Perennial	Adventive
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0 FACU	FACU	1 Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4 FACW	FACW	-1 Tree	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1 FAC	FAC	0 Forb	Perennial	Native
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0 FACU	FACU	1 Forb	Perennial	Adventive
GLYSTR	Glyceria striata	Glyceria striata var. stricta	Fowl Manna Grass	4 OBL	OBL	-2 Grass	Perennial	Native
HELAUT	Helenium autumnale	Helenium autumnale var. canaliculatum	Fall Sneezeweed	5 FACW	FACW	-1 Forb	Perennial	Native
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	4 FACW	FACW	-1 Forb	Perennial	Native
HYPPER	Hypericum perforatum	HYPERICUM PERFORATUM	Common St. John's-Wort	0 FACU	UPL	1 Forb	Perennial	Adventive
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0 FAC	FAC	0 Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2 FACW	FACW	-1 Forb	Perennial	Native
LEUVUL	Leucanthemum vulgare	CHRYSANTHEMUM LEUCANTHEMUM PINNATIFIDUM; LEUCANTHEMUM VULGARE VAR. PINNATIFIDUM	Ox-Eye Daisy	0 UPL	UPL	2 Forb	Perennial	Adventive
LOBSIP	Lobelia siphilitica	Lobelia siphilitica	Great Blue Lobelia	4 OBL	FACW	-2 Forb	Perennial	Native
LOLPER	Lolium perenne	LOLIUM PERENNE	Perennial Rye Grass	0 FACU	FACU	1 Grass	Perennial	Adventive
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0 FACU	FACU	1 Shrub	Perennial	Adventive
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0 UPL	UPL	2 Forb	Biennial	Adventive
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4 FACU	FACU	1 Forb	Perennial	Native
PENSED	Penthorum sedoides	Penthorum sedoides	Ditch-Stonecrop	4 OBL	OBL	-2 Forb	Perennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0 FACW	FACW	-1 Grass	Perennial	Adventive
PHYOPU	Physocarpus opulifolius	Physocarpus opulifolius	Atlantic Ninebark	5 FACW	FACW	-1 Shrub	Perennial	Native
POAPRA	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0 FAC	FACU	0 Grass	Perennial	Adventive
POPALB	Populus alba	POPULUS ALBA	White Poplar	0 UPL	UPL	2 Tree	Perennial	Adventive
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0 FAC	FAC	0 Tree	Perennial	Native
POTNOR	Potentilla norvegica	Potentilla norvegica	Norwegian Cinquefoil	0 FAC	FAC	0 Forb	Annual	Native
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0 FAC	FAC	0 Forb	Perennial	Adventive
PYCVIR	Pycnanthemum virginianum	Pycnanthemum virginianum	Virginia Mountain-Mint	5 FACW	FACW	-1 Forb	Perennial	Native
PYRCAL	Pyrus calleryana	PYRUS CALLERYANA	Ornamental Pear	0 UPL	UPL	2 Tree	Perennial	Adventive
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0 FAC	FAC	0 Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0 FACU	FACU	1 Shrub	Perennial	Adventive

Floristic Quality Analysis

RUDHIR	Rudbeckia hirta	Rudbeckia hirta var. pulcherrima	Black-Eyed-Susan	1 FACU	FACU	1 Forb	Perennial	Native
RUDTRI	Rudbeckia triloba	Rudbeckia triloba	Brown-Eyed-Susan	1 FACU	FACU	1 Forb	Annual	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0 FAC	FAC	0 Forb	Perennial	Adventive
SALINT	Salix interior	Salix interior	Sandbar Willow	2 FACW	FACW	-1 Shrub	Perennial	Native
EREHIE	Senecio hieraciifolius	Erechtites hieracifolia	American Burnweed	0 FAC	FACU	0 Forb	Annual	Native
SOLDUL	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0 FAC	FAC	0 Vine	Perennial	Adventive
SONARV	Sonchus arvensis	SONCHUS ARVENSIS	Field Sow-Thistle	0 FACU	FACU	1 Forb	Perennial	Adventive
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4 FACW	FAC	-1 Forb	Perennial	Native
TRIPRA	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0 FACU	FACU	1 Forb	Perennial	Adventive
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0 OBL	OBL	-2 Forb	Perennial	Adventive
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4 FACW	FACW	-1 Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1 FACW	FAC	-1 Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland AC
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, D.C. Clooney, M.E. Wells, C.E. Gurley
NOTES: July 17, 2024, and Sept 9, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.64
MEAN C (ALL SPECIES)	1.76
MEAN C (NATIVE TREES)	3.00
MEAN C (NATIVE SHRUBS)	2.00
MEAN C (NATIVE HERBACEOUS)	2.61
FQAI (NATIVE SPECIES)	12.37
FQAI (ALL SPECIES)	10.10
ADJUSTED FQAI	21.53
% C VALUE 0	0.52
% C VALUE 1-3	0.21
% C VALUE 4-6	0.24
% C VALUE 7-10	0.03

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	33
SPECIES RICHNESS (NATIVE)	22
% NON-NATIVE	0.33
WET INDICATOR (ALL)	-0.39
WET INDICATOR (NATIVE)	-0.55
% HYDROPHYTE (MIDWEST)	0.79
% NATIVE PERENNIAL	0.48
% NATIVE ANNUAL	0.15
% ANNUAL	0.21
% PERENNIAL	0.73

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACENEG	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
ACERUB	Acer rubrum	Acer rubrum	Red Maple	5	FAC	FAC	0	Tree	Perennial	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
CALSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC	0	Forb	Perennial	Native
CXBEBB	Carex bebbii	Carex bebbii	Bebb's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
DICHUA	Dichanthelium huachucae	Dichanthelium huachucae	Old-Field Rosette Grass	2	UPL	UPL	2	Grass	Perennial	Native
ELEOBT	Eleocharis obtusa	Eleocharis ovata	Blunt Spike-Rush	3	OBL	OBL	-2	Sedge	Annual	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native
ERICAN	Erigeron canadensis	Conyza canadensis	Canadian Horseweed	0	FACU	FACU	1	Forb	Annual	Native
ERISTR	Erigeron strigosus	Erigeron strigosus	Prairie Fleabane	5	FACU	FACU	1	Forb	Annual	Native
ERIVIL	Eriochloa villosa	ERIOCHLOA VILLOSA	Chinese Cup Grass	0	UPL	UPL	2	Grass	Annual	Adventive
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FESRUB	Festuca rubra	FESTUCA RUBRA	Red Fescue	0	FACU	FACU	1	Grass	Perennial	Adventive
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native

Floristic Quality Analysis

GLYSTR	Glyceria striata	Glyceria striata var. stricta	Fowl Manna Grass	4	OBL	OBL	-2	Grass	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
LOLPER	Lolium perenne	LOLIUM PERENNE	Perennial Rye Grass	0	FACU	FACU	1	Grass	Perennial	Adventive
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
PANCAP	Panicum capillare	Panicum capillare	Common Panic Grass	0	FAC	FAC	0	Grass	Annual	Native
permac	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0	FACW	FAC	-1	Forb	Annual	Adventive
PLAMAJ	Plantago major	PLANTAGO MAJOR	Great Plantain	0	FAC	FACU	0	Forb	Perennial	Adventive
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SALINT	Salix interior	Salix interior	Sandbar Willow	2	FACW	FACW	-1	Shrub	Perennial	Native
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
EREHIE	Senecio hieraciifolius	Erechtites hieracifolia	American Burnweed	0	FAC	FACU	0	Forb	Annual	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native

Floristic Quality Analysis

SITE: Wetland AF
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, D.C. Clooney, M.E. Wells
NOTES: July 18, 2024, and Sept 12, 2024

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.70
MEAN C (ALL SPECIES)	1.72
MEAN C (NATIVE TREES)	1.33
MEAN C (NATIVE SHRUBS)	2.67
MEAN C (NATIVE HERBACEOUS)	2.86
FQAI (NATIVE SPECIES)	17.94
FQAI (ALL SPECIES)	14.33
ADJUSTED FQAI	21.60
% C VALUE 0	0.51
% C VALUE 1-3	0.26
% C VALUE 4-6	0.19
% C VALUE 7-10	0.04

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	69
SPECIES RICHNESS (NATIVE)	44
% NON-NATIVE	0.36
WET INDICATOR (ALL)	-0.19
WET INDICATOR (NATIVE)	-0.57
% HYDROPHYTE (MIDWEST)	0.68
% NATIVE PERENNIAL	0.52
% NATIVE ANNUAL	0.10
% ANNUAL	0.12
% PERENNIAL	0.81

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACENEG	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
AGRGRY	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
AGRGIG	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
CALSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC	0	Forb	Perennial	Native
CXBEBB	Carex bebbii	Carex bebbii	Bebb's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CXCRAW	Carex crawei	Carex crawei	Crawe's Sedge	10	FACW	FACW	-1	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXSCOP	Carex scoparia	Carex scoparia	Pointed Broom Sedge	5	FACW	FACW	-1	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CENJAC	Centaurea jacea	CENTAUREA JACEA	Brown-Ray Knapweed	0	UPL	FACU	2	Forb	Perennial	Adventive
CICINT	Cichorium intybus	CICHORIUM INTYBUS	Chicory	0	FACU	FACU	1	Forb	Perennial	Adventive
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CIRVUL	Cirsium vulgare	CIRSIUM VULGARE	Bull Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne’s Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
ELEACI	Eleocharis acicularis	Eleocharis acicularis	Needle Spike-Rush	3	OBL	OBL	-2	Sedge	Perennial	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native

Floristic Quality Analysis

ERISTR	Erigeron strigosus	Erigeron strigosus	Prairie Fleabane	5	FACU	FACU	1	Forb	Annual	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	FACU	1	Forb	Perennial	Adventive
HELAUT	Helenium autumnale	Helenium autumnale var. canaliculatum	Fall Sneezeweed	5	FACW	FACW	-1	Forb	Perennial	Native
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	4	FACW	FACW	-1	Forb	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
LEUVUL	Leucanthemum vulgare	CHRYSANTHEMUM LEUCANTHEMUM PINNATIFIDUM; LEUCANTHEMUM VULGARE VAR. PINNATIFIDUM	Ox-Eye Daisy	0	UPL	UPL	2	Forb	Perennial	Adventive
LOLPER	Lolium perenne	LOLIUM PERENNE	Perennial Rye Grass	0	FACU	FACU	1	Grass	Perennial	Adventive
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0	FACU	FACU	1	Shrub	Perennial	Adventive
LUDPOL	Ludwigia polycarpa	Ludwigia polycarpa	Many-Fruit Primrose-Willow	6	OBL	OBL	-2	Forb	Perennial	Native
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native
LYTALA	Lythrum alatum	Lythrum alatum	Wing-Angle Loosestrife	7	OBL	OBL	-2	Forb	Perennial	Native
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0	UPL	UPL	2	Forb	Biennial	Adventive
MORALB	Morus alba	MORUS ALBA VAR. TATARICA	White Mulberry	0	FAC	FACU	0	Tree	Perennial	Adventive
PANCAP	Panicum capillare	Panicum capillare	Common Panic Grass	0	FAC	FAC	0	Grass	Annual	Native
PARQUI	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	4	FACU	FACU	1	Vine	Perennial	Native
PERPEN	Persicaria pensylvanica	Polygonum pensylvanicum	Pinkweed	0	FACW	FACW	-1	Forb	Annual	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial	Native
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
RUDHIR	Rudbeckia hirta	Rudbeckia hirta var. pulcherrima	Black-Eyed-Susan	1	FACU	FACU	1	Forb	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SALDIS	Salix discolor	Salix discolor	Pussy Willow	3	FACW	FACW	-1	Shrub	Perennial	Native

Floristic Quality Analysis

SCHTAB	Schoenoplectus tabernaemontani	Scirpus validus creber	Soft-Stem Club-Rush	3	OBL	OBL	-2	Sedge	Perennial	Native
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
SCIPEN	Scirpus pendulus	Scirpus pendulus	Rufous Bulrush	2	OBL	OBL	-2	Sedge	Perennial	Native
EREHIE	Senecio hieraciifolius	Erechtites hieracifolia	American Burnweed	0	FAC	FACU	0	Forb	Annual	Native
SETPUM	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0	FAC	FAC	0	Grass	Annual	Adventive
SOLDUL	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0	FAC	FAC	0	Vine	Perennial	Adventive
SYMDRU	Symphyotrichum drummondii	Aster sagittifolius drummondii	Drummond's Aster	3	UPL	UPL	2	Forb	Perennial	Native
SYMLAN	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	FACW	0	Forb	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
TAROFF	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	FACU	1	Forb	Perennial	Adventive
TOXRAD	Toxicodendron radicans	Rhus radicans	Eastern Poison-Ivy	2	FAC	FAC	0	Vine	Perennial	Native
TRIPRA	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0	FACU	FACU	1	Forb	Perennial	Adventive
TRIREP	Trifolium repens	TRIFOLIUM REPENS	White Clover	0	FACU	FACU	1	Forb	Perennial	Adventive
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native
VIBLEN	Viburnum lentago	Viburnum lentago	Nanny-Berry	4	FAC	FAC	0	Shrub	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland AG
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, D.C. Clooney
NOTES: 6/19/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	4.22
MEAN C (ALL SPECIES)	3.17
MEAN C (NATIVE TREES)	4.50
MEAN C (NATIVE SHRUBS)	1.00
MEAN C (NATIVE HERBACEOUS)	4.67
FQAI (NATIVE SPECIES)	12.67
FQAI (ALL SPECIES)	10.97
ADJUSTED FQAI	36.57
% C VALUE 0	0.33
% C VALUE 1-3	0.25
% C VALUE 4-6	0.25
% C VALUE 7-10	0.17

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	12
SPECIES RICHNESS (NATIVE)	9
% NON-NATIVE	0.25
WET INDICATOR (ALL)	0.17
WET INDICATOR (NATIVE)	-0.11
% HYDROPHYTE (MIDWEST)	0.58
% NATIVE PERENNIAL	0.75
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	1.00

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACERUB	Acer rubrum	Acer rubrum	Red Maple	5	FAC	FAC	0	Tree	Perennial	Native
CXBLAN	Carex blanda	Carex blanda	Eastern Woodland Sedge	1	FAC	FAC	0	Sedge	Perennial	Native
CXTENU	Carex tenuiflora	Carex tenuiflora	Sparse-Flower Sedge	10	OBL	OBL	-2	Sedge	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
EURMAC	Eurybia macrophylla	Aster macrophyllus	Large-Leaf Wood-Aster	9	FACU	UPL	1	Forb	Perennial	Native
fraves	Fragaria vesca	FRAGARIA VESCA	Woodland Strawberry	0	UPL	UPL	2	Forb	Perennial	Adventive
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GEUALE	Geum aleppicum	Geum aleppicum strictum	Yellow Avens	3	FACW	FAC	-1	Forb	Perennial	Native
OXASTR	Oxalis stricta	Oxalis europaea	Upright Yellow Wood-Sorrel	0	FACU	FACU	1	Forb	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
TAROFF	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	FACU	1	Forb	Perennial	Adventive
TRIREC	Trillium recurvatum	Trillium recurvatum	Bloody-Butcher	5	FACU	FACU	1	Forb	Perennial	Native

Floristic Quality Analysis

SITE: Wetland AH
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, S.K. Spence
NOTES: 6/19/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.13
MEAN C (ALL SPECIES)	2.42
MEAN C (NATIVE TREES)	1.33
MEAN C (NATIVE SHRUBS)	1.50
MEAN C (NATIVE HERBACEOUS)	3.58
FQAI (NATIVE SPECIES)	15.31
FQAI (ALL SPECIES)	13.47
ADJUSTED FQAI	27.50
% C VALUE 0	0.32
% C VALUE 1-3	0.35
% C VALUE 4-6	0.29
% C VALUE 7-10	0.03

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	31
SPECIES RICHNESS (NATIVE)	24
% NON-NATIVE	0.23
WET INDICATOR (ALL)	0.10
WET INDICATOR (NATIVE)	-0.25
% HYDROPHYTE (MIDWEST)	0.58
% NATIVE PERENNIAL	0.77
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	0.94

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
aceneg	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
AGRGRY	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
APOCAN	Apocynum cannabinum	Apocynum sibiricum	Indian-Hemp	2	FAC	FAC	0	Forb	Perennial	Native
CALSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC	0	Forb	Perennial	Native
CXCEPH	Carex cephalophora	Carex cephalophora	Oval-Leaf Sedge	5	FACU	FACU	1	Sedge	Perennial	Native
CXDIAN	Carex diandra	Carex diandra	Lesser Tussock Sedge	10	OBL	OBL	-2	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXMOLE	Carex molesta	Carex molesta	Troublesome Sedge	2	FAC	FAC	0	Sedge	Perennial	Native
CXSCOP	Carex scoparia	Carex scoparia	Pointed Broom Sedge	5	FACW	FACW	-1	Sedge	Perennial	Native
CENJAC	Centaurea jacea	CENTAUREA JACEA	Brown-Ray Knapweed	0	UPL	FACU	2	Forb	Perennial	Adventive
CIRVUL	Cirsium vulgare	CIRSIUM VULGARE	Bull Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FESRUB	Festuca rubra	FESTUCA RUBRA	Red Fescue	0	FACU	FACU	1	Grass	Perennial	Adventive
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	4	FACW	FACW	-1	Forb	Perennial	Native
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty	0	FAC	FAC	0	Forb	Perennial	Native

Floristic Quality Analysis

		CHRYSANTHEMUM LEUCANTHEMUM PINNATIFIDUM; LEUCANTHEMUM VULGARE VAR. PINNATIFIDUM							
LEUVUL	Leucanthemum vulgare		Ox-Eye Daisy	0	UPL	UPL	2 Forb	Perennial	Adventive
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2 Forb	Perennial	Native
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0	UPL	UPL	2 Forb	Biennial	Adventive
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0 Tree	Perennial	Native
POTSIM	Potentilla simplex	Potentilla simplex argyrisma	Oldfield Cinquefoil	3	FACU	FACU	1 Forb	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0 Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1 Shrub	Perennial	Adventive
SALINT	Salix interior	Salix interior	Sandbar Willow	2	FACW	FACW	-1 Shrub	Perennial	Native
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2 Sedge	Perennial	Native
SCICYP	Scirpus cyperinus	Scirpus cyperinus	Cottongrass Bulrush	6	OBL	OBL	-2 Sedge	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1 Forb	Perennial	Native
SOLJUN	Solidago juncea	Solidago juncea	Early Goldenrod	3	UPL	UPL	2 Forb	Perennial	Native
SOLRIG	Solidago rigida	Oligoneuron rigidum	Hard-Leaf Flat-Top-Goldenrod	3	FACU	FACU	1 Forb	Perennial	Native
SYMERI	Symphyotrichum ericoides	Aster ericoides	White Heath American-Aster	6	FACU	FACU	1 Forb	Perennial	Native

Floristic Quality Analysis

SITE: Wetland AI
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: D.C. Clooney, S.K. Spence, A.M. Zelles, C.E. Gurley
NOTES: 6/20/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.15
MEAN C (ALL SPECIES)	2.03
MEAN C (NATIVE TREES)	2.25
MEAN C (NATIVE SHRUBS)	0.00
MEAN C (NATIVE HERBACEOUS)	3.53
FQAI (NATIVE SPECIES)	14.09
FQAI (ALL SPECIES)	11.32
ADJUSTED FQAI	25.30
% C VALUE 0	0.48
% C VALUE 1-3	0.19
% C VALUE 4-6	0.26
% C VALUE 7-10	0.06

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	31
SPECIES RICHNESS (NATIVE)	20
% NON-NATIVE	0.35
WET INDICATOR (ALL)	-0.29
WET INDICATOR (NATIVE)	-0.55
% HYDROPHYTE (MIDWEST)	0.61
% NATIVE PERENNIAL	0.52
% NATIVE ANNUAL	0.13
% ANNUAL	0.13
% PERENNIAL	0.81

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACENEG	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual	Native
BOECYL	Boehmeria cylindrica	Boehmeria cylindrica drummondiana	Small-Spike False Nettle	5	OBL	OBL	-2	Forb	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CIRVUL	Cirsium vulgare	CIRSIUM VULGARE	Bull Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
ERISTR	Erigeron strigosus	Erigeron strigosus	Prairie Fleabane	5	FACU	FACU	1	Forb	Annual	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GALAPA	Galium aparine	Galium spurium	Sticky-Willy	0	FACU	FACU	1	Forb	Annual	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	FACU	1	Forb	Perennial	Adventive
GLYSTR	Glyceria striata	Glyceria striata var. stricta	Fowl Manna Grass	4	OBL	OBL	-2	Grass	Perennial	Native
HACVIR	Hackelia virginiana	Hackelia virginiana	Beggar's-Lice	1	FACU	FACU	1	Forb	Perennial	Native
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
IRIVIR	Iris virginica var. shrevei	Iris virginica shrevei	Virginia Blueflag	5	OBL	OBL	-2	Forb	Perennial	Native
LACSER	Lactuca serriola	LACTUCA SERRIOLA	Prickly Lettuce	0	FACU	FACU	1	Forb	Biennial	Adventive
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHRAUSU	Phragmites australis ssp. australis	PHRAGMITES AUSTRALIS	Common Reed	0	FACW	FACW	-1	Grass	Perennial	Adventive

Floristic Quality Analysis

POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
RORPAL	Rorippa palustris	0	Bog Yellowcress	4	OBL	OBL	-2	Forb	Perennial	Native
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
salnig	Salix nigra	Salix nigra	Black Willow	5	OBL	OBL	-2	Tree	Perennial	Native
SCHTAB	Schoenoplectus tabernaemontani	Scirpus validus creber	Soft-Stem Club-Rush	3	OBL	OBL	-2	Sedge	Perennial	Native
SOLDUL	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0	FAC	FAC	0	Vine	Perennial	Adventive
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SPAAME	Sparganium americanum	Sparganium americanum	American Burr-Reed	10	OBL	OBL	-2	Forb	Perennial	Native
SYMCOR	Symphyotrichum cordifolium	Aster cordifolius	Heart-Leaf Aster	7	UPL	UPL	2	Forb	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
TRIPRA	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0	FACU	FACU	1	Forb	Perennial	Adventive
TYPGLA	Typha X glauca	TYPHA X GLAUCA	Hybrid Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland AK
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, C.E. Gurley
NOTES: 9/24/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.40
MEAN C (ALL SPECIES)	2.27
MEAN C (NATIVE TREES)	4.00
MEAN C (NATIVE SHRUBS)	4.33
MEAN C (NATIVE HERBACEOUS)	3.29
FQAI (NATIVE SPECIES)	15.21
FQAI (ALL SPECIES)	12.42
ADJUSTED FQAI	27.76
% C VALUE 0	0.37
% C VALUE 1-3	0.27
% C VALUE 4-6	0.33
% C VALUE 7-10	0.03

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	30
SPECIES RICHNESS (NATIVE)	20
% NON-NATIVE	0.33
WET INDICATOR (ALL)	-0.47
WET INDICATOR (NATIVE)	-0.50
% HYDROPHYTE (MIDWEST)	0.73
% NATIVE PERENNIAL	0.63
% NATIVE ANNUAL	0.03
% ANNUAL	0.07
% PERENNIAL	0.90

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
AGRGRY	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
ALNINC	Alnus incana	Alnus rugosa	Speckled Alder	8	FACW	FACW	-1	Shrub	Perennial	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
BOECYL	Boehmeria cylindrica	Boehmeria cylindrica drummondiana	Small-Spike False Nettle	5	OBL	OBL	-2	Forb	Perennial	Native
CICMAC	Cicuta maculata	Cicuta maculata	Spotted Water-Hemlock	6	OBL	OBL	-2	Forb	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0	FACU	FACU	1	Shrub	Perennial	Adventive
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
ONOSEN	Onoclea sensibilis	Onoclea sensibilis	Sensitive Fern	5	FACW	FACW	-1	Fern	Perennial	Native
PARQUI	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	4	FACU	FACU	1	Vine	Perennial	Native
PENDIG	Penstemon digitalis	Penstemon digitalis	Foxglove Beardtongue	4	FAC	FAC	0	Forb	Perennial	Native
PERMAC	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0	FACW	FAC	-1	Forb	Annual	Adventive
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive

Floristic Quality Analysis

POTSIM	Potentilla simplex	Potentilla simplex argyrisma	Oldfield Cinquefoil	3	FACU	FACU	1	Forb	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ROSBLA	Rosa blanda	Rosa blanda	Smooth Rose	4	FACU	FACU	1	Shrub	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SOLDUL	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0	FAC	FAC	0	Vine	Perennial	Adventive
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
STATEN	Stachys tenuifolia	Stachys tenuifolia hispida	Smooth Hedge-Nettle	5	OBL	FACW	-2	Forb	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
TYPGLA	Typha X glauca	TYPHA X GLAUCA	Hybrid Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VIOSOR	Viola sororia	Viola priceana	Hooded Blue Violet	3	FAC	FAC	0	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland AL
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, C.E. Gurley
NOTES: 9/24/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	1.44
MEAN C (ALL SPECIES)	0.87
MEAN C (NATIVE TREES)	n/a
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	1.50
FQAI (NATIVE SPECIES)	4.33
FQAI (ALL SPECIES)	3.36
ADJUSTED FQAI	11.19
% C VALUE 0	0.60
% C VALUE 1-3	0.33
% C VALUE 4-6	0.07
% C VALUE 7-10	0.00

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	15
SPECIES RICHNESS (NATIVE)	9
% NON-NATIVE	0.40
WET INDICATOR (ALL)	-0.20
WET INDICATOR (NATIVE)	-0.44
% HYDROPHYTE (MIDWEST)	0.67
% NATIVE PERENNIAL	0.47
% NATIVE ANNUAL	0.13
% ANNUAL	0.20
% PERENNIAL	0.60

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
CONCAN	Erigeron canadensis	Conyza canadensis	Canadian Horseweed	0	FACU	FACU	1	Forb	Annual	Native
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
JUNDUD	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0	UPL	UPL	2	Forb	Biennial	Adventive
PERMAC	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0	FACW	FAC	-1	Forb	Annual	Adventive
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
EREHIE	Senecio hieraciifolius	Erechtites hieracifolia	American Burnweed	0	FAC	FACU	0	Forb	Annual	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
TYPGLA	Typha X glauca	TYPHA X GLAUCA	Hybrid Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland 3
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, C.E. Gurley
NOTES: 9/24/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.79
MEAN C (ALL SPECIES)	3.25
MEAN C (NATIVE TREES)	2.25
MEAN C (NATIVE SHRUBS)	2.00
MEAN C (NATIVE HERBACEOUS)	4.39
FQAI (NATIVE SPECIES)	18.58
FQAI (ALL SPECIES)	17.20
ADJUSTED FQAI	35.10
% C VALUE 0	0.18
% C VALUE 1-3	0.29
% C VALUE 4-6	0.50
% C VALUE 7-10	0.04

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	28
SPECIES RICHNESS (NATIVE)	24
% NON-NATIVE	0.14
WET INDICATOR (ALL)	-1.54
WET INDICATOR (NATIVE)	-1.63
% HYDROPHYTE (MIDWEST)	1.00
% NATIVE PERENNIAL	0.82
% NATIVE ANNUAL	0.04
% ANNUAL	0.04
% PERENNIAL	0.96

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACESAI	Acer saccharinum	Acer saccharinum	Silver Maple	1	FACW	FACW	-1	Tree	Perennial	Native
ALISUB	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	3	OBL	OBL	-2	Forb	Perennial	Native
ASCINC	Asclepias incarnata	Asclepias incarnata	Swamp Milkweed	3	OBL	OBL	-2	Forb	Perennial	Native
CALCAN	Calamagrostis canadensis	Calamagrostis canadensis	Bluejoint	6	OBL	OBL	-2	Grass	Perennial	Native
CXLACU	Carex lacustris	Carex lacustris	Lakebank Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
CXSTRI	Carex stricta	Carex stricta	Uptight Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
FRAALN	Frangula alnus	RHAMNUS FRANGULA	Glossy False Buckthorn	0	FACW	FAC	-1	Shrub	Perennial	Adventive
IRIVIR	Iris virginica var. shrevei	Iris virginica shrevei	Virginia Blueflag	5	OBL	OBL	-2	Forb	Perennial	Native
LEMMIO	Lemna minor	Lemna minor	Common Duckweed	5	OBL	OBL	-2	Forb	Annual	Native
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native
PERAMP	Persicaria amphibia	Polygonum coccineum; Polygonum amphibium stipulaceum	Water Smartweed	4	OBL	OBL	-2	Forb	Perennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial	Native
POPTRE	Populus tremuloides	Populus tremuloides	Quaking Aspen	3	FAC	FAC	0	Tree	Perennial	Native
RANFLA	Ranunculus flabellaris	Ranunculus flabellaris	Greater Yellow Water Buttercup	5	OBL	OBL	-2	Forb	Perennial	Native
SAGLAT	Sagittaria latifolia	Sagittaria latifolia	Duck-Potato	3	OBL	OBL	-2	Forb	Perennial	Native
SALINT	Salix interior	Salix interior	Sandbar Willow	2	FACW	FACW	-1	Shrub	Perennial	Native
SALNIG	Salix nigra	Salix nigra	Black Willow	5	OBL	OBL	-2	Tree	Perennial	Native
BOLFLU	Schoenoplectus fluviatilis	Scirpus fluviatilis; Bolboschoenus fluviatilis	River Club-Rush	4	OBL	OBL	-2	Sedge	Perennial	Native
SCHTAB	Schoenoplectus tabernaemontani	Scirpus validus creber	Soft-Stem Club-Rush	3	OBL	OBL	-2	Sedge	Perennial	Native
SCULAT	Scutellaria lateriflora	Scutellaria lateriflora	Mad Dog Skullcap	4	OBL	OBL	-2	Forb	Perennial	Native

Floristic Quality Analysis

SIUSUA	Sium suave	Sium suave	Hemlock Water-Parsnip	7	OBL	OBL	-2	Forb	Perennial	Native
SOLDUL	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0	FAC	FAC	0	Vine	Perennial	Adventive
SPAEUR	Sparganium eurycarpum	Sparganium eurycarpum	Broad-Fruit Burr-Reed	5	OBL	OBL	-2	Forb	Perennial	Native
SPAPEC	Spartina pectinata	Spartina pectinata	Freshwater Cord Grass	4	FACW	FACW	-1	Grass	Perennial	Native
TYPGLA	Typha X glauca	TYPHA X GLAUCA	Hybrid Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland 4
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, D.C. Clooney, S.K. Spence, C.E. Gurley
NOTES: 6/19/2025 and 2025/9/24

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.62
MEAN C (ALL SPECIES)	2.85
MEAN C (NATIVE TREES)	3.67
MEAN C (NATIVE SHRUBS)	0.00
MEAN C (NATIVE HERBACEOUS)	3.76
FQAI (NATIVE SPECIES)	22.03
FQAI (ALL SPECIES)	19.55
ADJUSTED FQAI	32.13
% C VALUE 0	0.26
% C VALUE 1-3	0.34
% C VALUE 4-6	0.32
% C VALUE 7-10	0.09

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	47
SPECIES RICHNESS (NATIVE)	37
% NON-NATIVE	0.21
WET INDICATOR (ALL)	-0.57
WET INDICATOR (NATIVE)	-0.73
% HYDROPHYTE (MIDWEST)	0.81
% NATIVE PERENNIAL	0.66
% NATIVE ANNUAL	0.13
% ANNUAL	0.13
% PERENNIAL	0.87

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACENEG	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
ACERUB	Acer rubrum	Acer rubrum	Red Maple	5	FAC	FAC	0	Tree	Perennial	Native
ACESAI	Acer saccharinum	Acer saccharinum	Silver Maple	1	FACW	FACW	-1	Tree	Perennial	Native
APOCAN	Apocynum cannabinum	Apocynum sibiricum	Indian-Hemp	2	FAC	FAC	0	Forb	Perennial	Native
BIDCER	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	3	OBL	OBL	-2	Forb	Annual	Native
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
BOECYL	Boehmeria cylindrica	Boehmeria cylindrica drummondiana	Small-Spike False Nettle	5	OBL	OBL	-2	Forb	Perennial	Native
CALCAN	Calamagrostis canadensis	Calamagrostis canadensis	Bluejoint	6	OBL	OBL	-2	Grass	Perennial	Native
CXBLAN	Carex blanda	Carex blanda	Eastern Woodland Sedge	1	FAC	FAC	0	Sedge	Perennial	Native
CIRCAN	Circaea canadensis	Circaea lutetiana canadensis	Broad-Leaf Enchanter's-Nightshade	3	FACU	FACU	1	Forb	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
ELYSUB	Elymus curvatus	Elymus submuticus	Awnless Wild Rye	4	FAC	FAC	0	Grass	Perennial	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
ERISTR	Erigeron strigosus	Erigeron strigosus	Prairie Fleabane	5	FACU	FACU	1	Forb	Annual	Native
EUTMAC	Eutrochium maculatum	Eupatorium maculatum	Spotted Trumpetweed	5	OBL	OBL	-2	Forb	Perennial	Native
RHAFRA	Frangula alnus	RHAMNUS FRANGULA	Glossy False Buckthorn	0	FACW	FAC	-1	Shrub	Perennial	Adventive
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native

Floristic Quality Analysis

GEULAC	Geum laciniatum	Geum laciniatum	Rough Avens	3	FACW	FACW	-1	Forb	Perennial	Native
HELAUT	Helenium autumnale	Helenium autumnale var. canaliculatum	Fall Sneezeweed	5	FACW	FACW	-1	Forb	Perennial	Native
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
IRIVIR	Iris virginica var. shrevei	Iris virginica shrevei	Virginia Blueflag	5	OBL	OBL	-2	Forb	Perennial	Native
JUNDUD	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
LILMIC	Lilium michiganense	Lilium michiganense	Michigan Lily	8	FACW	FACW	-1	Forb	Perennial	Native
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0	FACU	FACU	1	Shrub	Perennial	Adventive
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native
PENDIG	Penstemon digitalis	Penstemon digitalis	Foxglove Beardtongue	4	FAC	FAC	0	Forb	Perennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PRUVULV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
PRUNIG	Prunus nigra	Prunus nigra	Canadian Plum	9	FACU	FACU	1	Tree	Perennial	Native
RANSCE	Ranunculus sceleratus	Ranunculus sceleratus	Cursed Buttercup	4	OBL	OBL	-2	Forb	Annual	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
SIUSUA	Sium suave	Sium suave	Hemlock Water-Parsnip	7	OBL	OBL	-2	Forb	Perennial	Native
SOLDUL	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0	FAC	FAC	0	Vine	Perennial	Adventive
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SOLGIG	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	FACW	-1	Forb	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
TAROFF	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	FACU	1	Forb	Perennial	Adventive
THADAS	Thalictrum dasycarpum	Thalictrum dasycarpum hypoglaucum	Purple Meadow-Rue	6	FACW	FACW	-1	Forb	Perennial	Native
THADIO	Thalictrum dioicum	Thalictrum dioicum	Early Meadow-Rue	7	FACU	FACU	1	Forb	Perennial	Native
TOXRAD	Toxicodendron radicans	Rhus radicans	Eastern Poison-Ivy	2	FAC	FAC	0	Vine	Perennial	Native
TYPGLA	Typha X glauca	TYPHA X GLAUCA	Hybrid Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
ULMAME	Ulmus americana	Ulmus americana	American Elm	3	FACW	FACW	-1	Tree	Perennial	Native
VIOSOR	Viola sororia	Viola priceana	Hooded Blue Violet	3	FAC	FAC	0	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland 5
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, C.E. Gurley
NOTES: 9/24/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	4.13
MEAN C (ALL SPECIES)	3.30
MEAN C (NATIVE TREES)	4.50
MEAN C (NATIVE SHRUBS)	2.50
MEAN C (NATIVE HERBACEOUS)	4.25
FQAI (NATIVE SPECIES)	20.21
FQAI (ALL SPECIES)	18.07
ADJUSTED FQAI	36.90
% C VALUE 0	0.23
% C VALUE 1-3	0.17
% C VALUE 4-6	0.50
% C VALUE 7-10	0.10

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	30
SPECIES RICHNESS (NATIVE)	24
% NON-NATIVE	0.20
WET INDICATOR (ALL)	-1.07
WET INDICATOR (NATIVE)	-1.21
% HYDROPHYTE (MIDWEST)	0.93
% NATIVE PERENNIAL	0.67
% NATIVE ANNUAL	0.13
% ANNUAL	0.13
% PERENNIAL	0.83

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
APOCAN	Apocynum cannabinum	Apocynum sibiricum	Indian-Hemp	2	FAC	FAC	0	Forb	Perennial	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BOECYL	Boehmeria cylindrica	Boehmeria cylindrica drummondiana	Small-Spike False Nettle	5	OBL	OBL	-2	Forb	Perennial	Native
CXUTRI	Carex utriculata	Carex utriculata	Northwest Territory Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
RHAFRA	Frangula alnus	RHAMNUS FRANGULA	Glossy False Buckthorn	0	FACW	FAC	-1	Shrub	Perennial	Adventive
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
HELAUT	Helenium autumnale	Helenium autumnale var. canaliculatum	Fall Sneezeweed	5	FACW	FACW	-1	Forb	Perennial	Native
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	4	FACW	FACW	-1	Forb	Perennial	Native
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
IRIVIR	Iris virginica var. shrevei	Iris virginica shrevei	Virginia Blueflag	5	OBL	OBL	-2	Forb	Perennial	Native
LEMMIO	Lemna minor	Lemna minor	Common Duckweed	5	OBL	OBL	-2	Forb	Annual	Native
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native

Floristic Quality Analysis

MENARV	Mentha arvensis	Mentha arvensis villosa; Mentha arvensis subsp. parietariaefolia; Mentha canadensis	American Wild Mint	5	FACW	FACW	-1	Forb	Perennial	Native
ONOSEN	Onoclea sensibilis	Onoclea sensibilis	Sensitive Fern	5	FACW	FACW	-1	Fern	Perennial	Native
PERAMP	Persicaria amphibia	Polygonum coccineum; Polygonum amphibium stipulaceum	Water Smartweed	4	OBL	OBL	-2	Forb	Perennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
POAPAS	Poa palustris	Poa palustris	Fowl Blue Grass	7	FACW	FACW	-1	Grass	Perennial	Native
RANSCE	Ranunculus sceleratus	Ranunculus sceleratus	Cursed Buttercup	4	OBL	OBL	-2	Forb	Annual	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
SALNIG	Salix nigra	Salix nigra	Black Willow	5	OBL	OBL	-2	Tree	Perennial	Native
SAMCAN	Sambucus nigra ssp. canadensis	Sambucus canadensis	Black Elder	4	FAC	FACW	-1	Shrub	Perennial	Native
EREHIE	Senecio hieraciifolius	Erechtites hieracifolia	American Burnweed	0	FAC	FACU	0	Forb	Annual	Native
SIUSUA	Sium suave	Sium suave	Hemlock Water-Parsnip	7	OBL	OBL	-2	Forb	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
TYPGLA	Typha X glauca	TYPHA X GLAUCA	Hybrid Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native

Floristic Quality Analysis

SITE: Wetland 6
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, C.E. Gurley
NOTES: 6/19/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	4.22
MEAN C (ALL SPECIES)	3.23
MEAN C (NATIVE TREES)	5.00
MEAN C (NATIVE SHRUBS)	4.50
MEAN C (NATIVE HERBACEOUS)	4.32
FQAI (NATIVE SPECIES)	20.23
FQAI (ALL SPECIES)	17.71
ADJUSTED FQAI	36.93
% C VALUE 0	0.27
% C VALUE 1-3	0.20
% C VALUE 4-6	0.40
% C VALUE 7-10	0.13

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	30
SPECIES RICHNESS (NATIVE)	23
% NON-NATIVE	0.23
WET INDICATOR (ALL)	-1.00
WET INDICATOR (NATIVE)	-1.17
% HYDROPHYTE (MIDWEST)	0.87
% NATIVE PERENNIAL	0.67
% NATIVE ANNUAL	0.07
% ANNUAL	0.07
% PERENNIAL	0.83

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ALNINC	Alnus incana	Alnus rugosa	Speckled Alder	8	FACW	FACW	-1	Shrub	Perennial	Native
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
BOECYL	Boehmeria cylindrica	Boehmeria cylindrica drummondiana	Small-Spike False Nettle	5	OBL	OBL	-2	Forb	Perennial	Native
CALCAN	Calamagrostis canadensis	Calamagrostis canadensis	Bluejoint	6	OBL	OBL	-2	Grass	Perennial	Native
cxstri	Carex stricta	Carex stricta	Uptight Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
CXTRIB	Carex tribuloides	Carex tribuloides	Blunt Broom Sedge	7	OBL	FACW	-2	Sedge	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CONMAC	Conium maculatum	CONIUM MACULATUM	Poison-Hemlock	0	FACW	FACW	-1	Forb	Biennial	Adventive
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2	Forb	Biennial	Adventive
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native
EUTMAC	Eutrochium maculatum	Eupatorium maculatum	Spotted Trumpetweed	5	OBL	OBL	-2	Forb	Perennial	Native
GALLAB	Galium labradoricum	Galium labradoricum	Northern Bog Bedstraw	10	OBL	OBL	-2	Forb	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
GLYSTR	Glyceria striata	Glyceria striata var. stricta	Fowl Manna Grass	4	OBL	OBL	-2	Grass	Perennial	Native
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
IRIVIR	Iris virginica var. shrevei	Iris virginica shrevei	Virginia Blueflag	5	OBL	OBL	-2	Forb	Perennial	Native
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
PENDIG	Penstemon digitalis	Penstemon digitalis	Foxglove Beardtongue	4	FAC	FAC	0	Forb	Perennial	Native
PERAMP	Persicaria amphibia	Polygonum coccineum; Polygonum amphibium stipulaceum	Water Smartweed	4	OBL	OBL	-2	Forb	Perennial	Native

Floristic Quality Analysis

PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1 Grass	Perennial	Adventive
PYCVIR	Pycnanthemum virginianum	Pycnanthemum virginianum	Virginia Mountain-Mint	5	FACW	FACW	-1 Forb	Perennial	Native
RANHIS	Ranunculus hispidus	Ranunculus hispidus	Bristly Buttercup	8	FAC	FAC	0 Forb	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0 Shrub	Perennial	Adventive
RORPAL	Rorippa palustris	0	Bog Yellowcress	4	OBL	OBL	-2 Forb	Perennial	Native
SALNIG	Salix nigra	Salix nigra	Black Willow	5	OBL	OBL	-2 Tree	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1 Forb	Perennial	Native
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2 Forb	Perennial	Adventive
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1 Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland 9
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, D.C. Clooney, S.K. Spence
NOTES: 6/20/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	5.00
MEAN C (ALL SPECIES)	1.00
MEAN C (NATIVE TREES)	n/a
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	5.00
FQAI (NATIVE SPECIES)	5.00
FQAI (ALL SPECIES)	2.24
ADJUSTED FQAI	22.36
% C VALUE 0	0.80
% C VALUE 1-3	0.00
% C VALUE 4-6	0.20
% C VALUE 7-10	0.00

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	5
SPECIES RICHNESS (NATIVE)	1
% NON-NATIVE	0.80
WET INDICATOR (ALL)	-0.80
WET INDICATOR (NATIVE)	-2.00
% HYDROPHYTE (MIDWEST)	0.80
% NATIVE PERENNIAL	0.20
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	0.80

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
cxstri	Carex stricta	Carex stricta	Uptight Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2	Forb	Biennial	Adventive
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
SOLSEM	Solidago sempervirens	SOLIDAGO SEMPERVIRENS	Seaside Goldenrod	0	FACW	FACW	-1	Forb	Perennial	Adventive
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive

Floristic Quality Analysis

SITE: Wetland 10
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: A.M. Zelles, C.E. Gurley
NOTES: 6/20/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.67
MEAN C (ALL SPECIES)	3.00
MEAN C (NATIVE TREES)	n/a
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	3.67
FQAI (NATIVE SPECIES)	11.00
FQAI (ALL SPECIES)	9.95
ADJUSTED FQAI	33.17
% C VALUE 0	0.27
% C VALUE 1-3	0.27
% C VALUE 4-6	0.36
% C VALUE 7-10	0.09

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	11
SPECIES RICHNESS (NATIVE)	9
% NON-NATIVE	0.18
WET INDICATOR (ALL)	-1.18
WET INDICATOR (NATIVE)	-1.44
% HYDROPHYTE (MIDWEST)	0.91
% NATIVE PERENNIAL	0.73
% NATIVE ANNUAL	0.09
% ANNUAL	0.09
% PERENNIAL	0.91

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
CXBEBB	Carex bebbii	Carex bebbii	Bebb's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXSCOP	Carex scoparia	Carex scoparia	Pointed Broom Sedge	5	FACW	FACW	-1	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
eleery	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii; Eleocharis xyridiformis; Eleocharis macrostachya	Common Spike-Rush	1	OBL	OBL	-2	Sedge	Perennial	Native
FESRUB	Festuca rubra	FESTUCA RUBRA	Red Fescue	0	FACU	FACU	1	Grass	Perennial	Adventive
JUNTEN	Juncus tenuis	Juncus tenuis	Lesser Poverty Rush	0	FAC	FAC	0	Forb	Perennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
RANSCE	Ranunculus sceleratus	Ranunculus sceleratus	Cursed Buttercup	4	OBL	OBL	-2	Forb	Annual	Native
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
SCICYP	Scirpus cyperinus	Scirpus cyperinus	Cottongrass Bulrush	6	OBL	OBL	-2	Sedge	Perennial	Native

Floristic Quality Analysis

SITE: Wetland 11
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley & A.M. Zelles
NOTES: 6/20/2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.83
MEAN C (ALL SPECIES)	2.00
MEAN C (NATIVE TREES)	n/a
MEAN C (NATIVE SHRUBS)	1.50
MEAN C (NATIVE HERBACEOUS)	3.10
FQAI (NATIVE SPECIES)	9.81
FQAI (ALL SPECIES)	8.25
ADJUSTED FQAI	23.80
% C VALUE 0	0.35
% C VALUE 1-3	0.35
% C VALUE 4-6	0.24
% C VALUE 7-10	0.06

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	17
SPECIES RICHNESS (NATIVE)	12
% NON-NATIVE	0.29
WET INDICATOR (ALL)	-0.94
WET INDICATOR (NATIVE)	-1.00
% HYDROPHYTE (MIDWEST)	0.82
% NATIVE PERENNIAL	0.71
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	1.00

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ASCSYR	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	UPL	1	Forb	Perennial	Native
CXSTRI	Carex stricta	Carex stricta	Uptight Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
eleery	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii; Eleocharis xyridiformis; Eleocharis macrostachya	Common Spike-Rush	1	OBL	OBL	-2	Sedge	Perennial	Native
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
PHRAUSU	Phragmites australis ssp. australis	PHRAGMITES AUSTRALIS	Common Reed	0	FACW	FACW	-1	Grass	Perennial	Adventive
POAPAS	Poa palustris	Poa palustris	Fowl Blue Grass	7	FACW	FACW	-1	Grass	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SALINT	Salix interior	Salix interior	Sandbar Willow	2	FACW	FACW	-1	Shrub	Perennial	Native
SCIPUN	Schoenoplectus pungens	Scirpus pungens	Three-Square	4	OBL	OBL	-2	Sedge	Perennial	Native
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
TYPANG	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native

Floristic Quality Analysis

SITE: Wetland 15
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, S.K. Spence, & A.M. Zelles
NOTES: September 24, 2025 and June 15, 2025

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	3.50
MEAN C (ALL SPECIES)	2.60
MEAN C (NATIVE TREES)	3.00
MEAN C (NATIVE SHRUBS)	4.33
MEAN C (NATIVE HERBACEOUS)	3.58
FQAI (NATIVE SPECIES)	17.85
FQAI (ALL SPECIES)	15.38
ADJUSTED FQAI	30.17
% C VALUE 0	0.29
% C VALUE 1-3	0.40
% C VALUE 4-6	0.26
% C VALUE 7-10	0.06

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	35
SPECIES RICHNESS (NATIVE)	26
% NON-NATIVE	0.26
WET INDICATOR (ALL)	-0.54
WET INDICATOR (NATIVE)	-0.81
% HYDROPHYTE (MIDWEST)	0.74
% NATIVE PERENNIAL	0.69
% NATIVE ANNUAL	0.06
% ANNUAL	0.09
% PERENNIAL	0.86

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
AGRGRY	Agrimonia gryposepala	Agrimonia gryposepala	Tall Hairy Grooveburr	2	FACU	FACU	1	Forb	Perennial	Native
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
CALCAN	Calamagrostis canadensis	Calamagrostis canadensis	Bluejoint	6	OBL	OBL	-2	Grass	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
DIPLAC	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2	Forb	Biennial	Adventive
EPICOL	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL	-2	Forb	Perennial	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata	Green Ash	4	FACW	FACW	-1	Tree	Perennial	Native
GEUALE	Geum aleppicum	Geum aleppicum strictum	Yellow Avens	3	FACW	FAC	-1	Forb	Perennial	Native
GRAVIR	Gratiola virginiana	Gratiola virginiana	Round-Fruit Hedge-Hyssop	10	OBL	OBL	-2	Forb	Annual	Native
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	4	FACW	FACW	-1	Forb	Perennial	Native
IRIVIR	Iris virginica var. shrevei	Iris virginica shrevei	Virginia Blueflag	5	OBL	OBL	-2	Forb	Perennial	Native
JUNTOR	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	4	OBL	OBL	-2	Forb	Perennial	Native

Floristic Quality Analysis

PERMAC	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0	FACW	FAC	-1	Forb	Annual	Adventive
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHRAUSU	Phragmites australis ssp. australis	PHRAGMITES AUSTRALIS	Common Reed	0	FACW	FACW	-1	Grass	Perennial	Adventive
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial	Native
POTSIM	Potentilla simplex	Potentilla simplex argyrisma	Oldfield Cinquefoil	3	FACU	FACU	1	Forb	Perennial	Native
PYCVIR	Pycnanthemum virginianum	Pycnanthemum virginianum	Virginia Mountain-Mint	5	FACW	FACW	-1	Forb	Perennial	Native
ROBPSE	Robinia pseudoacacia	ROBINIA PSEUDOACACIA	Black Locust	0	FACU	FACU	1	Tree	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
SALINT	Salix interior	Salix interior	Sandbar Willow	2	FACW	FACW	-1	Shrub	Perennial	Native
SALNIG	Salix nigra	Salix nigra	Black Willow	5	OBL	OBL	-2	Tree	Perennial	Native
salsec	Salix sericea	Salix sericea	Silky Willow	10	OBL	OBL	-2	Shrub	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SOLJUN	Solidago juncea	Solidago juncea	Early Goldenrod	3	UPL	UPL	2	Forb	Perennial	Native
SPAPEC	Spartina pectinata	Spartina pectinata	Freshwater Cord Grass	4	FACW	FACW	-1	Grass	Perennial	Native
TYPGLA	Typha X glauca	TYPHA X GLAUCA	Hybrid Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
VIOSOR	Viola sororia	Viola priceana	Hooded Blue Violet	3	FAC	FAC	0	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Floristic Quality Analysis

SITE: Wetland 20
LOCALE: Waukegan Airport, Waukegan, Lake County, IL
BY: C.E. Gurley, S.K. Spence
NOTES: 17-Jun-25

CONSERVATISM-BASED METRICS	
MEAN C (NATIVE SPECIES)	2.44
MEAN C (ALL SPECIES)	1.83
MEAN C (NATIVE TREES)	n/a
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	2.63
FQAI (NATIVE SPECIES)	7.33
FQAI (ALL SPECIES)	6.35
ADJUSTED FQAI	21.17
% C VALUE 0	0.33
% C VALUE 1-3	0.42
% C VALUE 4-6	0.25
% C VALUE 7-10	0.00

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	12
SPECIES RICHNESS (NATIVE)	9
% NON-NATIVE	0.25
WET INDICATOR (ALL)	-0.83
WET INDICATOR (NATIVE)	-0.89
% HYDROPHYTE (MIDWEST)	0.83
% NATIVE PERENNIAL	0.75
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	1.00

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
CXBLAN	Carex blanda	Carex blanda	Eastern Woodland Sedge	1	FAC	FAC	0	Sedge	Perennial	Native
CXGRAN	Carex granularis	Carex granularis	Limestone-Meadow Sedge	3	FACW	FACW	-1	Sedge	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
EUPPER	Eupatorium perfoliatum	Eupatorium perfoliatum	Common Boneset	4	OBL	FACW	-2	Forb	Perennial	Native
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	0	FACU	FACU	1	Forb	Perennial	Native
GEUALE	Geum aleppicum	Geum aleppicum strictum	Yellow Avens	3	FACW	FAC	-1	Forb	Perennial	Native
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
SCIPEN	Scirpus pendulus	Scirpus pendulus	Rufous Bulrush	2	OBL	OBL	-2	Sedge	Perennial	Native
SYMLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Appendix B-4

Wetlands with no Site Access: Prior Delineation Forms and Floristic Quality Analyses

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 11/4/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 7A

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 31, T46N, R12E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): <2 Lat: 42.41727 Long: -87.88178 Datum: NAD 83

Soil Map Unit Name: NRCS mapped Houghton MK; revised to Peotone SICL, 0-2% slopes NWI classification: POWF

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**Yes**
Hydric Soil Present?	Yes		
Wetland Hydrology Present?	Yes		

Remarks: Community type is marsh.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Leersia oryzoides*	60	Yes	OBL
2. *Polygonum lapathifolium*	40	Yes	FACW
3. *Bidens cernua*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A = _____

Hydrophytic Vegetation Indicators

- [x] 1-Rapid Test for Hydrophytic Vegetation
- [ ] 2-Dominance Test is >50%
- [ ] 3-Prevalence Index is < or =3.0[1]
- [ ] 4-Morphological Adaptations [1](Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 7A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	95	7.5YR 3/4	5	C	M	SICL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☑ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? No Depth (inches): _____

Water Table Present? Yes Depth (inches): 4

Saturation Present? (includes capillary fringe) Yes Depth (inches): 4

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 11/4/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 7B

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 31, T46N, R12E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): <2 Lat: 42.41544 Long: -87.88274 Datum: NAD 83

Soil Map Unit Name: NRCS mapped Houghton MK; revised to Peotone SICL, 0-2% slopes NWI classification: PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**Yes**
Hydric Soil Present?	Yes		
Wetland Hydrology Present?	Yes		

Remarks: Community type is wet meadow.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Phalaris arundinacea*	80	Yes	FACW
2. *Lythrum salicaria*	5	No	OBL
3. *Scirpus validus var. creber*	5	No	OBL
4. *Echinochloa crusgalli*	3	No	FACW
5. *Polygonum lapathifolium*	3	No	FACW
6. *Cirsium arvense*	2	No	FACU
7. *Erigeron annuus*	1	No	FACU
8.			
9.			
10.			
	99	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

- [x] 1-Rapid Test for Hydrophytic Vegetation
- [ ] 2-Dominance Test is >50%
- [ ] 3-Prevalence Index is < or =3.0[1]
- [ ] 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 7B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	95	7.5YR 4/6	5	C	M	SICL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes Depth (inches): <12

Water Table Present? Yes Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes Depth (inches): 0

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 11/4/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 7C

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 31, T46N, R12E

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex

Slope (%): <2 Lat: 42.41665 Long: -87.88172 Datum: NAD 83

Soil Map Unit Name: NRCS mapped Beecher SIL; revised to Udoll NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**No**
Hydric Soil Present?	No		
Wetland Hydrology Present?	No		

Remarks: Community type is non-native grassland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Poa pratensis*	50	Yes	FAC
2. *Plantago rugelii*	30	Yes	FAC
3. *Trifolium repens*	10	No	FACU
4. *Taraxacum officinale*	3	No	FACU
5. *Fragaria virginiana*	1	No	FACU
6.			
7.			
8.			
9.			
10.			
	94	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- ☐ 1-Rapid Test for Hydrophytic Vegetation
- ☑ 2-Dominance Test is >50%
- ☐ 3-Prevalence Index is < or =3.0[1]
- ☐ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 7C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	100					SIL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? No Depth (inches): _____

Water Table Present? No Depth (inches): _____

Saturation Present? (includes capillary fringe) No Depth (inches): _____

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 11/4/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 7D/8B

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 31, T46N, R12E

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex

Slope (%): <2 Lat: 42.41537 Long: -87.88218 Datum: NAD 83

Soil Map Unit Name: Ozaukee SIL, 2-4% slopes NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	No	**Is the Sampled Area within a Wetland?** **No**
Hydric Soil Present?	No	
Wetland Hydrology Present?	No	

Remarks: Community type is shrubland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Rhamnus cathartica*	30	Yes	FAC
2. *Juniperus virginiana var. crebra*	20	Yes	FACU
3. *Fraxinus pennsylvanica var. subintegerrima*	5	No	FACW
4.			
5.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1. *Lonicera tatarica*	60	Yes	FACU
2. *Rhamnus cathartica*	10	No	FAC
3. *Cornus racemosa*	3	No	FAC
4.			
5.			
	73	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Rhamnus cathartica*	25	Yes	FAC
2. *Rosa multiflora*	2	No	FACU
3. *Juniperus virginiana var. crebra*	1	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	28	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- ☐ 1-Rapid Test for Hydrophytic Vegetation
- ☐ 2-Dominance Test is >50%
- ☐ 3-Prevalence Index is < or =3.0[1]
- ☐ 4-Morphological Adaptations [1](Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 7D/8B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	100					SIL	
8-13	10YR 4/3	100					SIL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? No Depth (inches): _____

Water Table Present? No Depth (inches): _____

Saturation Present? (includes capillary fringe) No Depth (inches): _____

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 11/4/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 8A

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 31, T46N, R12E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): <2 Lat: 42.41572 Long: -87.88276 Datum: NAD 83

Soil Map Unit Name: Houghton MK, 0-2% slopes NWI classification: POWF

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**Yes**
Hydric Soil Present?	Yes		
Wetland Hydrology Present?	Yes		

Remarks: Community type is marsh.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Scirpus validus var. creber*	3	Yes	OBL
2. *Typha latifolia*	3	Yes	OBL
3. *Leersia oryzoides*	2	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	8	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- [x] 1-Rapid Test for Hydrophytic Vegetation
- [ ] 2-Dominance Test is >50%
- [ ] 3-Prevalence Index is < or =3.0[1]
- [ ] 4-Morphological Adaptations [1](Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 8A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	N 2.5/	100					MK	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☑ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☑ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes Depth (inches): <24

Water Table Present? Yes Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes Depth (inches): 0

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Previous data form - CMT 2025 Wetland Report does not confirm due to site access

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/29/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 18A

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 29, T46N, R12E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): <2 Lat: 42.42897 Long: -87.86214 Datum: NAD 83

Soil Map Unit Name: Ashkum SICL, 0-2% slopes NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**Yes**
Hydric Soil Present?	Yes		
Wetland Hydrology Present?	Yes		

Remarks: Community type is forested wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	50	Yes	FAC
2. *Rhamnus cathartica*	5	No	FAC
3.			
4.			
5.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1. *Rhamnus cathartica*	80	Yes	FAC
2. *Fraxinus pennsylvanica var. subintegerrima*	3	No	FACW
3.			
4.			
5.			
	83	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1. *Vitis riparia*	5	Yes	FACW
2.			
	5	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- ☐ 1-Rapid Test for Hydrophytic Vegetation
- ☑ 2-Dominance Test is >50%
- ☐ 3-Prevalence Index is < or =3.0[1]
- ☐ 4-Morphological Adaptations [1](Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 18A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	95	7.5YR 4/6	5	C	M	SICL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes Depth (inches): <6

Water Table Present? Yes Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes Depth (inches): 0

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/29/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 18B

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 29, T46N, R12E

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex

Slope (%): <2 Lat: 42.42858 Long: -87.86199 Datum: NAD 83

Soil Map Unit Name: Ashkum SICL, 0-2% slopes NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**No**
Hydric Soil Present?	No		
Wetland Hydrology Present?	No		

Remarks: Community type is non-native grassland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1. *Rhamnus cathartica*	7	Yes	FAC
2. *Juniperus virginiana var. crebra*	3	Yes	FACU
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Poa pratensis*	85	Yes	FAC
2. *Fragaria virginiana*	7	No	FACU
3. *Aster ericoides*	3	No	FACU
4. *Pyrus calleryana*	3	No	UPL
5. *Solidago canadensis*	3	No	FACU
6.			
7.			
8.			
9.			
10.			
	101	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- ☐ 1-Rapid Test for Hydrophytic Vegetation
- ☑ 2-Dominance Test is >50%
- ☐ 3-Prevalence Index is < or =3.0[1]
- ☐ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 18B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	100					SIL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? No Depth (inches): _____

Water Table Present? No Depth (inches): _____

Saturation Present? (includes capillary fringe) No Depth (inches): _____

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/29/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 19A

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 29, T46N, R12E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): <2 Lat: 42.42951 Long: -87.85909 Datum: NAD 83

Soil Map Unit Name: Ashkum SICL, 0-2% slopes NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**Yes**
Hydric Soil Present?	Yes		
Wetland Hydrology Present?	Yes		

Remarks: Community type is marsh.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Typha angustifolia*	95	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals (A)	(B)	

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- [x] 1-Rapid Test for Hydrophytic Vegetation
- [ ] 2-Dominance Test is >50%
- [ ] 3-Prevalence Index is < or =3.0[1]
- [ ] 4-Morphological Adaptations [1](Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 19A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	95	7.5YR 4/6	5	C	M	SICL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes Depth (inches): <3

Water Table Present? Yes Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes Depth (inches): 0

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Previous data form - CMT 2025 Wetland Report does not confirm due to site access

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Waukegan National Airport City/County: Lake Sampling Date 10/29/2015

Applicant/Owner: IDOT District 1 State: IL Sampling Point 19B/20B

Investigator(s): Geatz, Olnas, and Sivicek Section, Township, Range: Sec. 29, T46N, R12E

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex

Slope (%): <2 Lat: 42.42912 Long: -87.85870 Datum: NAD 83

Soil Map Unit Name: NRCS mapped Ashkum SICL; revised to Ozaukee SIL, 0-2% slopes NWI classification: U

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area within a Wetland?**	**No**
Hydric Soil Present?	No		
Wetland Hydrology Present?	No		

Remarks: Community type is shrubland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	30	Yes	FAC
2. *Morus alba*	7	No	FAC
3.			
4.			
5.			
	37	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1. *Rhamnus cathartica*	60	Yes	FAC
2. *Lonicera tatarica*	10	No	FACU
3.			
4.			
5.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Rhamnus cathartica*	15	Yes	FAC
2. *Alliaria petiolata*	10	Yes	FAC
3. *Geum canadense*	8	Yes	FAC
4. *Fragaria virginiana*	3	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	36	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	(A)		(B)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators

- [ ] 1-Rapid Test for Hydrophytic Vegetation
- [x] 2-Dominance Test is >50%
- [ ] 3-Prevalence Index is < or =3.0[1]
- [ ] 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 19B/20B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 4/3	100					SIL	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2] Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two is required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? No Depth (inches): _____

Water Table Present? No Depth (inches): _____

Saturation Present? (includes capillary fringe) No Depth (inches): _____

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



Inventory Assessment

Edit This Inventory | Download Report | Done

Wetland 7 Update

» Date & Location:

2019-09-06
UGN
Waukegan
Lake, IL

» FQA Database:

Region: **Flora of the Chicago Region**
Year Published: **2017**
Description:
Flora of the Chicago Region UFQA Database. 2018. Kenneth Johnson. [As per Flora of the Chicago Region: A Floristic and Ecological Synthesis. 2017. Gerould Wilhelm and Laura Rericha. Indiana Academy of Science. Indianapolis, IN.]

» Details:

Practitioner: **Heather Lacey & Alex Zelles**
Latitude:
Longitude:
Weather Notes:
Duration Notes:
Community Type Notes:
Other Notes:
This assessment is **private** (viewable only by you).

» Conservatism-Based Metrics:

Total Mean C: **2.3**
Native Mean C: **3.2**
Total FQI: **13.8**
Native FQI: **16.3**
Adjusted FQI: **27.2**
% C value 0: **36.1%**
% C value 1-3: **30.6%**
% C value 4-6: **30.6%**
% C value 7-10: **2.8%**
Native Tree Mean C: **2.3**
Native Shrub Mean C: **1.5**
Native Herbaceous Mean C: **3.5**

» Species Richness:

Total Species: **36**
Native Species: **26 (72.2%)**
Non-native Species: **10 (27.8%)**

» Species Wetness:

Mean Wetness: **-1.1**
Native Mean Wetness: **-1.3**

» Physiognomy Metrics:

Tree: **4 (11.1%)**
Shrub: **3 (8.3%)**
Vine: **2 (5.6%)**
Forb: **19 (52.8%)**
Grass: **4 (11.1%)**
Sedge: **4 (11.1%)**
Rush: **0 (0%)**
Fern: **0 (0%)**
Bryophyte: **0 (0%)**

» Duration Metrics:

Annual: **7 (19.4%)**
Perennial: **29 (80.6%)**
Biennial: **0 (0%)**

Native Annual: **6 (16.7%)**
Native Perennial: **20 (55.6%)**
Native Biennial: **0 (0%)**

» Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Acer negundo	Sapindaceae	ACENEG	native	0	0	tree	perennial	boxelder

Bidens cernua	Asteraceae	BIDCER	native	3	-2	forb	annual	nodding bur marigold
Calamagrostis canadensis	Poaceae	CALCAN	native	6	-2	grass	perennial	blue joint grass
Carex lacustris	Cyperaceae	CXLACU	native	5	-2	sedge	perennial	common lake sedge
Cicuta maculata	Apiaceae	CICMAC	native	6	-2	forb	perennial	water hemlock
Cirsium arvense	Asteraceae	CIRARV	non-native	0	1	forb	perennial	field thistle
Cornus racemosa	Cornaceae	CORRAC	native	1	0	shrub	perennial	gray dogwood
Cyperus strigosus	Cyperaceae	CYPSTR	native	1	-1	sedge	perennial	long-scaled nut sedge
Echinochloa crus-galli	Poaceae	ECHCRU	non-native	0	0	grass	annual	barnyard grass
Eleocharis erythropoda	Cyperaceae	ELEERY	native	1	-2	sedge	perennial	red-rooted spikerush
Epilobium coloratum	Onagraceae	EPICOL	native	3	-2	forb	annual	cinnamon willowherb
Erigeron annuus	Asteraceae	ERIANS	native	0	1	forb	annual	annual fleabane
Frangula alnus	Rhamnaceae	FRAALN	non-native	0	-1	shrub	perennial	glossy buckthorn
Iris virginica var. shrevei	Iridaceae	IRIVIS	native	5	-2	forb	perennial	blue flag
Leersia oryzoides	Poaceae	LEEORY	native	3	-2	grass	perennial	rice cut grass
Lemna minor	Lemnaceae	LEMMIR	native	5	-2	forb	annual	green duckweed
Lysimachia nummularia	Myrsinaceae	LYSNUM	non-native	0	-1	forb	perennial	moneywort
Lythrum salicaria	Lythraceae	LYTSAL	non-native	0	-1	forb	perennial	purple loosestrife

Persicaria amphibia var. stipulacea	Polygonaceae	PERAMS	native	4	-2	forb	perennial	marsh smartweed
Persicaria lapathifolia	Polygonaceae	PERLAP	native	0	0	forb	annual	pale pinkweed
Phalaris arundinacea	Poaceae	PHAARA	non-native	0	-1	grass	perennial	reed canary grass
Rorippa palustris var. fernaldiana	Brassicaceae	RORPAF	native	2	-2	forb	annual	marsh cress
Rumex crispus	Polygonaceae	RUMCRI	non-native	0	0	forb	perennial	curly dock
Salix alba	Salicaceae	SALALB	non-native	0	-1	tree	perennial	white willow
Salix amygdaloides	Salicaceae	SALAMY	native	4	-1	tree	perennial	peach-leaved willow
Salix interior	Salicaceae	SALINT	native	2	-1	shrub	perennial	sandbar willow
Schoenoplectus tabernaemontani	Cyperaceae	SCHTAB	native	3	-2	sedge	perennial	great bulrush
Sium suave	Apiaceae	SIUSUA	native	7	-2	forb	perennial	tall water parsnip
Solanum dulcamara	Solanaceae	SOLDUL	non-native	0	0	vine	perennial	deadly nightshade
Solidago gigantea	Asteraceae	SOLGIG	native	4	-1	forb	perennial	late goldenrod
Sparganium eurycarpum	Sparganiaceae	SPAEUR	native	5	-2	forb	perennial	common bur reed
Typha angustifolia	Typhaceae	TYPANG	non-native	0	-2	forb	perennial	narrow-leaved cattail
Typha latifolia	Typhaceae	TYPLAT	native	5	-2	forb	perennial	broad-leaved cattail
Ulmus americana	Ulmaceae	ULMAME	native	3	-1	tree	perennial	american elm

Verbena hastata	Verbenaceae	VERHAS	native	4	-1	forb	perennial	blue vervain
Vitis riparia	Vitaceae	VITRIR	native	1	0	vine	perennial	riverbank grape



Inventory Assessment

Edit This Inventory | Download Report | Done

Wetland 8 Update

» Date & Location:

2019-09-06
UGN
Waukegan
Lake, IL

» FQA Database:

Region: **Flora of the Chicago Region**
Year Published: **2017**
Description:
Flora of the Chicago Region UFQA Database. 2018. Kenneth Johnson. [As per Flora of the Chicago Region: A Floristic and Ecological Synthesis. 2017. Gerould Wilhelm and Laura Rericha. Indiana Academy of Science. Indianapolis, IN.]

» Details:

Practitioner: **Heather Lacey & Alex Zelles**
Latitude:
Longitude:
Weather Notes:
Duration Notes:
Community Type Notes:
Other Notes:
This assessment is **private** (viewable only by you).

» Conservatism-Based Metrics:

Total Mean C: **3.1**
Native Mean C: **4**
Total FQI: **9.3**
Native FQI: **10.6**
Adjusted FQI: **35.3**
% C value 0: **22.2%**
% C value 1-3: **33.3%**
% C value 4-6: **44.4%**
% C value 7-10: **0%**
Native Tree Mean C: **5**
Native Shrub Mean C: **2**
Native Herbaceous Mean C: **4.2**

» Species Richness:

Total Species: **9**
Native Species: **7 (77.8%)**
Non-native Species: **2 (22.2%)**

» Species Wetness:

Mean Wetness: **-1.7**
Native Mean Wetness: **-1.9**

» Physiognomy Metrics:

Tree: **1 (11.1%)**
Shrub: **1 (11.1%)**
Vine: **0 (0%)**
Forb: **4 (44.4%)**
Grass: **2 (22.2%)**
Sedge: **1 (11.1%)**
Rush: **0 (0%)**
Fern: **0 (0%)**
Bryophyte: **0 (0%)**

» Duration Metrics:

Annual: **2 (22.2%)**
Perennial: **7 (77.8%)**
Biennial: **0 (0%)**

Native Annual: **1 (11.1%)**
Native Perennial: **6 (66.7%)**
Native Biennial: **0 (0%)**

» Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Echinochloa crus-galli	Poaceae	ECHCRU	non-native	0	0	grass	annual	barnyard grass

Leersia oryzoides	Poaceae	LEEORY	native	3	-2	grass	perennial	rice cut grass
Lemna minor	Lemnaceae	LEMMIR	native	5	-2	forb	annual	green duckweed
Salix interior	Salicaceae	SALINT	native	2	-1	shrub	perennial	sandbar willow
Salix nigra	Salicaceae	SALNIG	native	5	-2	tree	perennial	black willow
Schoenoplectus tabernaemontani	Cyperaceae	SCHTAB	native	3	-2	sedge	perennial	great bulrush
Sparganium eurycarpum	Sparganiaceae	SPAEUR	native	5	-2	forb	perennial	common bur reed
Typha angustifolia	Typhaceae	TYPANG	non-native	0	-2	forb	perennial	narrow-leaved cattail
Typha latifolia	Typhaceae	TYPLAT	native	5	-2	forb	perennial	broad-leaved cattail



Inventory Assessment

Edit This Inventory | Download Report | Done

Wetland 18 Update

» Date & Location:

2019-09-06
UGN
Waukegan
Lake, IL

» FQA Database:

Region: **Flora of the Chicago Region**
Year Published: **2017**
Description:
Flora of the Chicago Region UFQA Database. 2018. Kenneth Johnson. [As per Flora of the Chicago Region: A Floristic and Ecological Synthesis. 2017. Gerould Wilhelm and Laura Rericha. Indiana Academy of Science. Indianapolis, IN.]

» Details:

Practitioner: **Heather Lacey & Alex Zelles**
Latitude:
Longitude:
Weather Notes:
Duration Notes:
Community Type Notes:
Other Notes:
This assessment is **private** (viewable only by you).

» Conservatism-Based Metrics:

Total Mean C: **1.2**
Native Mean C: **2**
Total FQI: **4.3**
Native FQI: **5.7**
Adjusted FQI: **15.7**
% C value 0: **53.8%**
% C value 1-3: **30.8%**
% C value 4-6: **15.4%**
% C value 7-10: **0%**
Native Tree Mean C: **1.6**
Native Shrub Mean C: **n/a**
Native Herbaceous Mean C: **2.7**

» Species Richness:

Total Species: **13**
Native Species: **8 (61.5%)**
Non-native Species: **5 (38.5%)**

» Species Wetness:

Mean Wetness: **-0.5**
Native Mean Wetness: **-0.9**

» Physiognomy Metrics:

Tree: **5 (38.5%)**
Shrub: **2 (15.4%)**
Vine: **1 (7.7%)**
Forb: **2 (15.4%)**
Grass: **2 (15.4%)**
Sedge: **1 (7.7%)**
Rush: **0 (0%)**
Fern: **0 (0%)**
Bryophyte: **0 (0%)**

» Duration Metrics:

Annual: **1 (7.7%)**
Perennial: **11 (84.6%)**
Biennial: **1 (7.7%)**

Native Annual: **1 (7.7%)**
Native Perennial: **7 (53.8%)**
Native Biennial: **0 (0%)**

» Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Acer negundo	Sapindaceae	ACENEG	native	0	0	tree	perennial	boxelder
Acer saccharinum	Sapindaceae	ACESAI	native	1	-1	tree	perennial	silver maple

Epilobium coloratum	Onagraceae	EPICOL	native	3	-2	forb	annual	cinnamon willowherb
Fraxinus pennsylvanica	Oleaceae	FRAPEN	native	4	-1	tree	perennial	red ash
Hesperis matronalis	Brassicaceae	HESMAT	non-native	0	1	forb	biennial	dames rocket
Phalaris arundinacea	Poaceae	PHAARA	non-native	0	-1	grass	perennial	reed canary grass
Phragmites australis	Poaceae	PHRAUA	non-native	0	0	grass	perennial	common reed
Populus deltoides	Salicaceae	POPDEL	native	0	0	tree	perennial	eastern cottonwood
Rhamnus cathartica	Rhamnaceae	RHACAT	non-native	0	0	shrub	perennial	common buckthorn
Scirpus atrovirens	Cyperaceae	SCIATR	native	4	-2	sedge	perennial	dark green rush
Ulmus americana	Ulmaceae	ULMAME	native	3	-1	tree	perennial	american elm
Viburnum opulus	Adoxaceae	VIBOPU	non-native	0	0	shrub	perennial	european cranberry bush
Vitis riparia	Vitaceae	VITRIR	native	1	0	vine	perennial	riverbank grape



Inventory Assessment

Edit This Inventory | Download Report | Done

Wetland 19 FQI Update

» Date & Location:

2019-09-05
UGN
Waukegan
Lake, IL

» FQA Database:

Region: **Flora of the Chicago Region**
Year Published: **2017**
Description:
Flora of the Chicago Region UFQA Database. 2018. Kenneth Johnson. [As per Flora of the Chicago Region: A Floristic and Ecological Synthesis. 2017. Gerould Wilhelm and Laura Rericha. Indiana Academy of Science. Indianapolis, IN.]

» Details:

Practitioner: **Heather Lacey & Alex Zelles**
Latitude:
Longitude:
Weather Notes:
Duration Notes:
Community Type Notes:
Other Notes:
This assessment is **private** (viewable only by you).

» Conservatism-Based Metrics:

Total Mean C: **1.9**
Native Mean C: **2.6**
Total FQI: **8.7**
Native FQI: **10.1**
Adjusted FQI: **22**
% C value 0: **42.9%**
% C value 1-3: **28.6%**
% C value 4-6: **28.6%**
% C value 7-10: **0%**
Native Tree Mean C: **3.3**
Native Shrub Mean C: **1**
Native Herbaceous Mean C: **2.5**

» Species Richness:

Total Species: **21**
Native Species: **15 (71.4%)**
Non-native Species: **6 (28.6%)**

» Species Wetness:

Mean Wetness: **-0.6**
Native Mean Wetness: **-0.8**

» Physiognomy Metrics:

Tree: **4 (19%)**
Shrub: **2 (9.5%)**
Vine: **1 (4.8%)**
Forb: **8 (38.1%)**
Grass: **3 (14.3%)**
Sedge: **3 (14.3%)**
Rush: **0 (0%)**
Fern: **0 (0%)**
Bryophyte: **0 (0%)**

» Duration Metrics:

Annual: **1 (4.8%)**
Perennial: **20 (95.2%)**
Biennial: **0 (0%)**

Native Annual: **1 (4.8%)**
Native Perennial: **14 (66.7%)**
Native Biennial: **0 (0%)**

» Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Ambrosia trifida	Asteraceae	AMBTRI	native	0	0	forb	annual	giant ragweed

Carex vulpinoidea	Cyperaceae	CXVULP	native	2	-1	sedge	perennial	brown fox sedge
Cirsium arvense	Asteraceae	CIRARV	non-native	0	1	forb	perennial	field thistle
Cornus racemosa	Cornaceae	CORRAC	native	1	0	shrub	perennial	gray dogwood
Euthamia graminifolia	Asteraceae	EUTGRA	native	4	0	forb	perennial	smooth grass-leaved goldenrod
Fraxinus pennsylvanica	Oleaceae	FRAPEN	native	4	-1	tree	perennial	red ash
Geum canadense	Rosaceae	GEUCAN	native	1	0	forb	perennial	white avens
Juncus tenuis	Juncaceae	JUNTEN	native	0	0	forb	perennial	path rush
Juncus torreyi	Juncaceae	JUNTOR	native	2	-1	forb	perennial	torreys rush
Persicaria hydropiperoides	Polygonaceae	PERHYS	native	6	-2	forb	perennial	mild water pepper
Phalaris arundinacea	Poaceae	PHAARA	non-native	0	-1	grass	perennial	reed canary grass
Phragmites australis	Poaceae	PHRAUA	non-native	0	0	grass	perennial	common reed
Poa pratensis	Poaceae	POAPRA	non-native	0	1	grass	perennial	kentucky bluegrass
Populus deltoides	Salicaceae	POPDEL	native	0	0	tree	perennial	eastern cottonwood
Rhamnus cathartica	Rhamnaceae	RHACAT	non-native	0	0	shrub	perennial	common buckthorn
Salix amygdaloides	Salicaceae	SALAMY	native	4	-1	tree	perennial	peach-leaved willow
Salix nigra	Salicaceae	SALNIG	native	5	-2	tree	perennial	black willow
Schoenoplectus tabernaemontani	Cyperaceae	SCHTAB	native	3	-2	sedge	perennial	great bulrush
Scirpus cyperinus	Cyperaceae	SCICYP	native	6	-2	sedge	perennial	woolgrass

Typha angustifolia	Typhaceae	TYPANG	non-native	0	-2	forb	perennial	narrow-leaved cattail
Vitis riparia	Vitaceae	VITRIR	native	1	0	vine	perennial	riverbank grape

UGN Aquatic Resources Report (2025)

APPENDIX C: SITE PHOTOGRAPHS



1. Representative photo of Wetland A interior. June 2025.



2. Wetland data collection point A1. June 2025.



3. Wetland soil pit results for A1.



4. Upland data collection point A2. June 2025.



5. Upland soil pit results for A2.



7. Representative photo of wooded area near Wetland A and Wetland 6. June 2025.



6. Representative photo of open upland areas east and west of Wetland A. June 2025.



8. Representative photo of Wetland D, showing northwest side, facing east. June 2024.



9. Representative photo of Wetland E, showing south end facing northeast. June 2024.



10. Representative photo of upland area near Wetland E, facing northwest toward Wetland F (not visible). Sept 2024.



11. Representative photo of Wetland F (left), showing northwest side, facing east. July 2024.



12. Wetland F west side (left) facing southeast. Sept 2024.



13. Representative photo of Wetland G interior. June 2024.



15. Upland soil pit results for G3.



14. Upland data collection point G3. July 2024.



16. Wetland data collection point H3. July 2024.



17. Wetland soil pit results for H3.



19. Upland soil pit results for H4.



18. Upland data collection point H4. July 2024.



20. Representative photo of Wetland H west boundary, facing northwest. July 2024.



21. Representative photo of Wetland H near north boundary, facing north. July 2024.



22. Wetland I (left and center) and Wetland AC (right foreground) facing southeast. July 2024.



23. South end of Wetland I (right) facing southwest. June 2024.



24. Representative photo of Wetland I, view of east side facing west. June 2024.



25. Southeast end of Wetland I facing northwest. July 2024.



27. Wetland soil pit results for J3.



26. Wetland data collection point J3, facing southwest. June 2024.



28. Upland data collection point J4. June 2024.



29. Upland soil pit results for J4.



31. Wetland soil pit results for J5.



30. Wetland data collection point J5, facing south. June 2024.



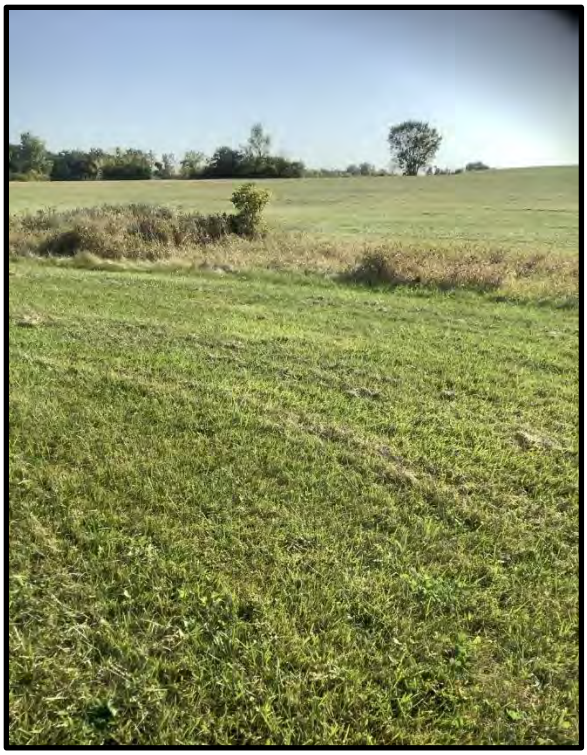
32. Southwest corner of Wetland J, facing north. June 2024.



33. Southeast corner of Wetland J, facing west. June 2024.



34. West side of Wetland J, facing south near data point J5.



35. Wetland L east terminus and surrounding airfield, facing southeast. September 2025.



36. Representative photo of Wetland L west portion, facing southwest. September 2025.



37. Wetland L adjacent to Wadsworth Road, facing northwest. September 2025.



39. Wetland soil pit results for S1.



38. Representative photo of Wetland S interior, facing east. June 2025.



40. Wetland data collection point S1. June 2025.



41. Representative photo of upland data point S2 surroundings, facing south. June 2025.



43. Representative photo of Wetland T interior near north end of wetland. September 2025.



42. Representative photo of Wetland T south portion, facing southeast toward wetland boundary. September 2025.



44. Wetland data collection point X1 for Wetland X. June 2024.



45. Wetland soil pit results for X1.



47. Upland soil pit results for X2.



46. Upland data collection point X2. June 2024.



48. Southwest leg of Wetland X, facing east (from Drainage 3). June 2024.



49. West leg of Wetland X (Drainage 1) near west terminus, facing southwest. June 2024.



51. Drainage 1 upgradient of Wetland X, facing north, with wetland vegetation within drainage. June 2025.



50. Wetland X near center of west leg (Drainage 1), facing north. June 2024.



52. Drainage 1 upgradient of Wetland X, facing southwest toward wetland. June 2025.



53. Drainage 4 facing east toward Wetland X. Sept 2024.



54. East boundary of Wetland X, facing west across wetland. June 2024.



55. Southeast corner of Wetland X, facing northwest. June 2024.



56. Wetland data collection point Y1. June 2024.



57. Wetland soil pit results point Y1.



59. Upland soil pit results Y2.



58. Upland data collection point Y2. June 2024.



60. Interior of Wetland Y at north end facing south. Formerly Wetland K. June 2025.



61. Interior of Wetland Y near data point Y1, in added wetland area connecting former Wetlands K and 13. June 2025.



62. Wetland Y at south end facing north into wetland interior. Formerly Wetland 13. June 2025.



63. Drainage 8 near Wetland Y north end. June 2025.



64. Drainage 9 near Wetland Y north end. June 2025.



65. Overview photo of Drainage 2 (upland) facing west.



66. Overview photo of Drainage 2 (upland) facing north across the drainage swale. June 2025.



67. Wetland data collection point Z1 for Wetland Z. June 2024.



68. Wetland soil pit results for Z1.



69. Upland data collection point Z2. June 2024.



70. Upland soil pit results for Z2.



71. Overview photo of Wetland AA. June 2024.



72. Wetland data collection point AA1. June 2024.



73. Wetland soil pit results AA1.



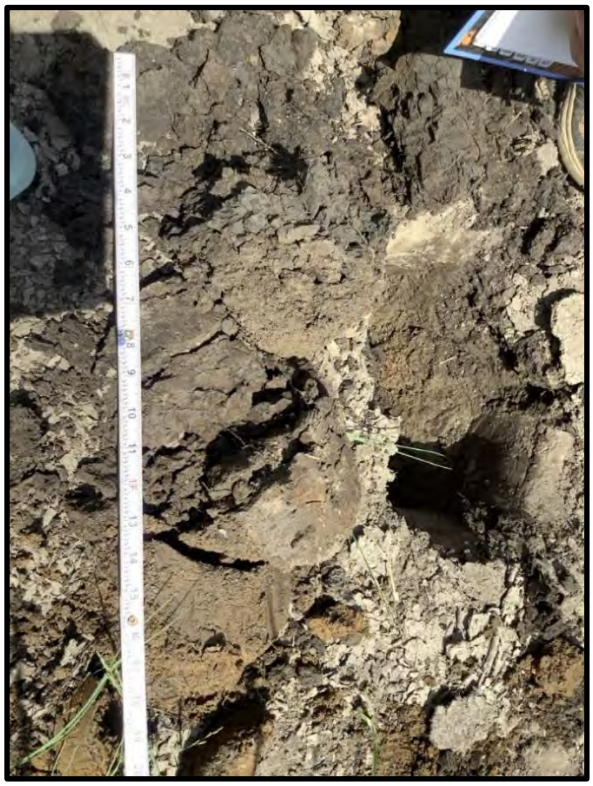
75. Detail of upland soil for AA2.



74. Upland data collection point AA2. June 2024.



76. Data collection point for AB1. July 2024.



77. Upland soil pit results point for AB1, which is not a wetland. July 2024.



78. Data collection point for AB2. July 2024.



79. Upland soil pit results for AB2. July 2024.



80. Overview photo of Wetland AC, facing south. July 2024.



81. Wetland data collection point AC1 for Wetland AC. July 2024.



82. Wetland soil pit results point for Wetland AC.



83. Wetland soil pit results point for Wetland AC.



84. Upland data collection point AC2. July 2024.



85. Upland soil pit results for AC2.



86. Upland data collection point AD1. July 2024.



87. Upland soil pit results for AD1. July 2024.



88. Upland data collection point AD2. July 2024.



89. Upland soil pit results for AD2. July 2024.



91. Overview photo of Wetland AF east end, facing west (in Drainage 5). July 2024.



90. Overview photo of Wetland AF west end. July 2024.



92. Wetland data collection point AF1. July 2024.



93. Wetland soil pit results for AF1.



95. Upland soil pit results for AF2.



94. Upland data collection point AF2. July 2024.



96. Drainage 5 near data point AF3, upgradient of Wetland AF. June 2025.



97. Upland data collection point AF3. June 2025.



99. Overview of Wetland AG. June 2025.



98. Upland soil pit results for AF3.



100. Wetland data collection point AG1. June 2025.



101. Wetland soil pit results for AG1.



103. Upland soil pit results for AG2.



102. Upland data collection point AG2. June 2025.



104. Wetland AH surroundings near wetland data point AH1. June 2025.



105. Wetland data collection point AH1. June 2025.



106. Wetland soil pit results for AH1.



107. Representative photo of Wetland AH interior, northeast corner facing northwest. June 2025.



108. Upland data collection point AH2. June 2025.



109. Upland soil pit results for AH2.



110. Representative photo of wooded upland east of Wetland AH and Pond M. June 2025.



111. South end of Wetland AI, facing northwest across UNT1. June 2025.



112. Wetland data collection point AI1. June 2025.



113. Wetland soil pit results for AI1.



115. Wetland AI, wooded northwest portion, facing east toward UNT1. June 2025.



114. Wetland AI near wetland center, facing north parallel to UNT1. June 2025.



116. Upland data collection point AI2. June 2025.



117. Upland data collection point AI2 surroundings with old pavement. June 2025.



119. Upland data collection point AI3. June 2025.



118. Upland soil pit results for AI2.



120. Upland soil pit results for AI3.



121. Upland data collection point AI4. June 2025.



123. Representative photo of wooded upland east of Wetland AI. June 2025.



122. Upland soil pit results for AI4.



124. Unnamed Tributary to Des Plaines (UNT1) immediately south of culvert under W Town Line Rd, facing downstream (south). June 2025.



125. Unnamed Tributary to Des Plaines (UNT1) flowing through Wetland 4, facing downstream (south). June 2025.



126. Unnamed Tributary to Des Plaines (UNT1) near center of Wetland 4 in project area, facing downstream (south). September 2025.



127. Drainage 10 near Wetland AI. June 2025.



128. Representative photo of grassy upland east of Wetland AI and southeast of Drainage 10. There is a drainage mapped in the LCWI in this location which was not observed. June 2025.



129. Representative photo of large open upland area south of W Town Line Rd. June 2025.



131. Upland soil pit results for AJ1. June 2025.



130. Upland data collection point AJ1. June 2025.



132. Representative photo of upland AJ1 surroundings. June 2025.



133. Representative photo of Drainage 11 adjacent to Wetland AK (right). September 2025.



134. Representative photo of Wetland AK, facing south from north boundary. September 2025.



135. Wetland data collection point AK1. September 2025.



136. Wetland soil pit results for AK1. September 2025.



137. Upland data collection point AK2. September 2025.



138. Upland soil pit results for AK2. September 2025.



139. Representative photo of wooded upland near Wetland AK. September 2025.



140. Drainage 12 near Wetland AK, facing north from connection to Drainage 11 (not shown). September 2025.



141. Overview photo of Wetland AL, facing northwest. September 2025.



142. Wetland data collection point AL1. September 2025.



143. Wetland soil pit results for AL1. September 2025.



144. Upland data collection point AL2. September 2025.



145. Upland soil pit results for AL2. September 2025.



146. Representative photo of Wetland 3 interior near center of wetland in project area. September 2025.



147. Representative photo of Wetland 3 interior, facing southeast near project south boundary. September 2025.



148. Wetland 4 west portion approaching transition to Wetland 3. September 2025.



149. Wetland 4 west portion approaching transition to Wetland 3. September 2025.



151. Representative photo of Wetland 4 on either side of UNT 1, facing southwest (downstream). June 2025.



150. Interior of Wetland 4 east of UNT 1. September 2025.



152. Northeast boundary of Wetland 4. June 2025.



153. Wetland data collection point 4D. June 2025.



155. Wetland data collection point 4E. June 2025.



154. Wetland soil pit results for 4D.



156. Wetland soil pit results for 4E.



157. Interior of Wetland 4 near boundary with Wetland 6. June 2025.



158. Boundary between Wetland 4 (foreground) and Wetland 6 (emergent background). June 2025.



159. Upland data collection point 4F. June 2025.



160. Upland soil pit results for 4F.



161. Overview photo of Wetland 5, facing southwest from east wetland boundary. September 2025.



162. Representative photo of Wetland 5 interior facing north from south project boundary. September 2025.



163. Wetland 6 east portion (foreground) facing southwest toward Wetland 5 (far background). September 2025.



164. Wetland 6 (foreground) facing south toward transition to Wetland 5 (background). September 2025.



165. Wetland data collection point 6C. June 2025.



166. Wetland soil pit results for 6C.



167. Wetland 6 wooded margin north of data point 6D, facing south into wetland.



168. Wetland data collection point 6D. June 2025.



169. Wetland soil pit results for 6D. September 2025.



171. Upland soil pit results for 6E. September 2025.



170. Upland data collection point 6E. September 2025.



172. Representative photo of wooded upland northwest of data point 6E. September 2025.



173. Representative photo of Wetland 6 north portion, facing south. June 2025.



174. Northeast portion of Wetland 7, facing south on W Suddard St. No site access permitted. June 2025.



175. Representative photo of Wetland 9. June 2025.



176. Representative photo of Wetland 9 interior. June 2025.



177. Representative photo of upland adjacent to Wetland 9. June 2025.



179. Upland data collection point 9B. June 2025.



178. Wetland data collection point 9A. June 2025.



180. South end of Wetland 10, facing northeast. June 2025.



181. North end of Wetland 10, facing southwest. June 2025.



183. Wetland soil pit results for 10C.



182. Wetland data collection point 10C. June 2025.



184. Representative photo of mowed upland airfield between Wetland 10 and Wetland 11. June 2025.



185. Overview photo of Wetland 11, facing southeast. June 2025.



186. Wetland data collection point 11C June 2025.



187. Wetland soil pit results for 11C.



188. Representative photo of Wetland 11 interior. June 2025.



189. Overview photo of southeast portion of Wetland 11, connected to larger part wetland via culverts. June 2025.



190. Representative photo of mowed upland northeast of Wetland 11. June 2025.



191. Drainage 6 upgradient of Wetland 15, facing north (upgradient). June 2025.



192. Drainage 6 upgradient of Wetland 15, facing south (downgradient). June 2025.



193. Representative photo of Drainage 7. June 2025.



195. Pond M view from south end facing north. June 2025.



194. Representative photo of open upland area west of Pond M. June 2025.



196. Pond M view from east side facing west. June 2025.



197. Representative photo of Pond M banks. June 2025.



199. Wetland 15 east portion. September 2025.



198. Facing south along Drainage 13 (foreground riprap) toward Wetland 15 (background). September 2025.



200. Wetland 15 central portion, facing south across wetland. Shrubs in background are in upland across ravine. September 2025



201. Scrub-shrub vegetation in northwest portion of Wetland 15, facing northwest in Drainage 6 within wetland. September 2025.



202. Overview photo of Wetland 20, facing south across wetland. June 2024

UGN Aquatic Resources Report (2025)

APPENDIX D: Lake County Jurisdictional Documentation

CMT

Appendix D-1

Lake County Exempt IWLC Confirmation: Wetlands D, E, F, and I

CMT
Infrastructure Professionals

June 6, 2025

Juli E. Crane, Principal Wetland Specialist
Lake County Stormwater Management Commission
500 W. Winchester Rd, Suite 201
Libertyville, IL 60048

RE: SMC# SESC-23-129
Mitigation for Unauthorized Wetland Impacts from Tree Removal
Waukegan National Airport, Waukegan, Lake County, IL
Review Requested on Possible Exempt Wetlands

Dear Ms. Crane,

This letter requests confirmation of SMC exemption status of a subset of the wetlands currently undergoing mitigation monitoring at Waukegan National Airport. Specifically, upon review of historic aerial imagery north of Wadsworth Road (attached), we have determined that several wetlands in this area may be excluded from the Watershed Development Ordinance (WDO) definition of Isolated Waters of Lake County. Specifically, the WDO (as amended July 11, 2023) states that "[w]etlands created incidental to construction grading on development sites" are "excluded from Isolated Waters of Lake County, as determined by the Enforcement Officer." We request the SMC review the information below and attached historic aerial imagery for nine (9) wetlands to determine whether they should be excluded from mitigation monitoring.

First, we have determined that Wetland AC north of Wadsworth Rd (Area 1) is a newly developing wetland due to the obstruction removal project site disturbance in 2023, and should therefore be excluded from monitoring. This wetland was identified during onsite delineations in 2024. This wetland had not been previously identified as a potential wetland during Lake County's original site review in 2023, and although it is visible in imagery from the 2024 monitoring, it does not appear to be present in imagery from 2023. It appears to have developed in 2024 in one of the upland locations where machinery drove through the area in 2023, and during an initial site visit during May 2025 appears to have further expanded since October 2024. Therefore, we expect this wetland is newly developing as the site continues to settle following 2023 disturbance, and is not an Isolated Water of Lake County (per ordinance definition of isolated waters, exclusion A-3). We therefore request confirmation from SMC that Wetland AC can be excluded from mitigation monitoring moving forward.

Second, we request a review from SMC of five (5) wetlands north of Wadsworth Rd (Area 1) that have developed at the locations of former structures which were demolished in the 1980s. The five wetlands in question, from west to east, are Wetlands AA, Z, F, D, and E. The current boundaries of these wetlands closely follow the locations of former structures, as is visible in the historic aerial imagery provided. Although there may have been farmed wetlands in this vicinity prior to the 1960s, the topography has been modified by a small suburban development from sometime before 1961 to sometime after 1980. Wetlands AA, Z, F, and E appear to have become wetlands specifically in locations that were not recontoured after buildings were removed and where foundations have likely settled. The same also appears to be true of Wetland I; however, as this wetland was previously identified as an HQAR, it does not qualify for

CMT
Infrastructure Professionals

exclusion (per ordinance definition of isolated waters, section B-1). Wetland D is located adjacent to prior development and does not appear to have been a farmed wetland prior to the 1960s. It is centered on what appears to be a yard, tree nursery or maintained upland area from the 1960s to 1980s, and its formation may also have been influenced by the removal of the adjacent development.

This possibility is consistent with the current uneven local topography on site at these locations, which makes these wetlands and their surroundings difficult to navigate on foot (e.g. during site monitoring). It may also explain the presence of rubble on site (e.g. broken concrete) and the occasional presence of feral landscaping plants (e.g. *Hemerocallis fulva* in Wetland E). Additionally, according to the NRCS Soil Maps, none of these five wetlands is mapped in a hydric soil unit, unlike the adjacent Wetlands 20 and J. Given these observations, it is likely that these five wetlands exist due to previous site disturbance and may not qualify as Isolated Waters of Lake County (per ordinance definition of isolated waters, exclusion A-3). We therefore request SMC review the attached historic aerials and confirm whether these five wetlands may be excluded from mitigation monitoring requirements moving forward.

Third, we request a review from SMC of three (3) wetlands in the south portion of the Airport facility (Area 3), whose formation may have been influenced by stockpiling. The three connected wetland areas, monitored as U, N-2019, and N-2024, are not apparent on historic aerial imagery prior to the 1990s. Sometime after 1961, material was stockpiled west and east of the current wetland area, likely affecting surface flow and possibly leading to the incidental creation of this wetland area. The NRCS soil map units support this, with the nearest hydric soil unit located adjacent to the current wetland area, following a former drainage route visible on maps prior to the 1960s. Based on this information, it is possible this wetland area exists due to previous site disturbance and may not qualify as Isolated Waters of Lake County (per ordinance definition of isolated waters, exclusion A-3). We therefore request SMC review the attached historic aerials and confirm whether these three wetlands may be excluded from mitigation monitoring requirements moving forward.

As we discussed during our meeting on May 29, 2025, Waukegan National Airport has concerns about budget constraints with respect to the 2025 mitigation monitoring. Therefore, if any of these wetlands (Wetlands D, E, F, U, N (2019 and 2024), Z, AA and AC) can be reasonably excluded from the upcoming June 2025 monitoring due to being exempt from the SMC ordinance, **we would appreciate that confirmation by June 12.**

Please let us know if you have any questions, and thank you for your assistance!

Sincerely,

Christine Gurley

Christine Gurley
Environmental Scientist

Alexandra Zelles

CMT
Infrastructure Professionals

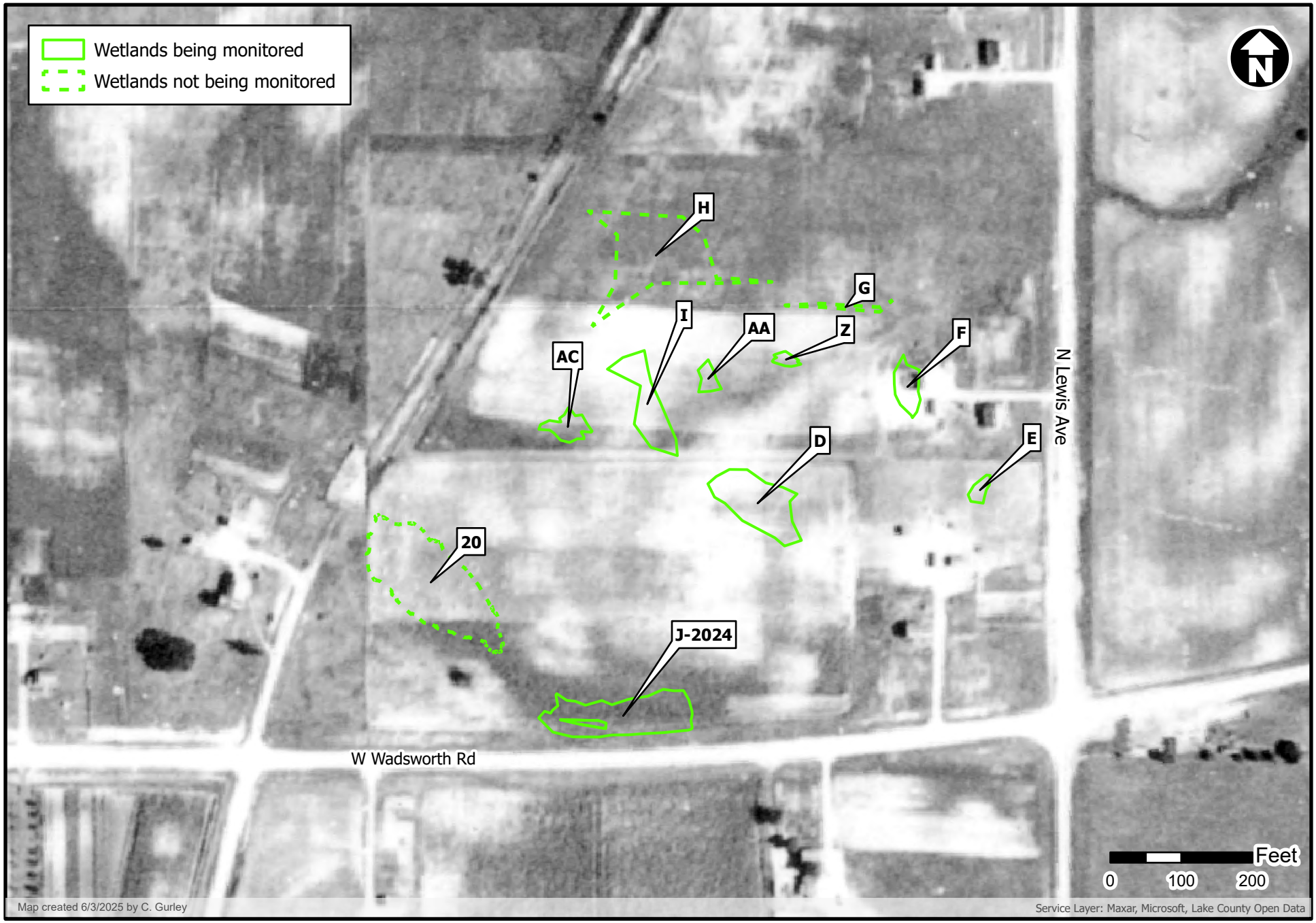
Alexandra Zelles
CWS, Senior Environmental Scientist

CC: Skip Goss, Craig Louden

Attachments: (1) Historic Aerial Maps of "Area 1" North of Wadsworth Rd, 1929-2023, 11 pages; (2) Historic Aerial Maps of "Area 3" in southern part of Airport Facility, 1929-2023, 12 pages; (3) NRCS SSURGO Soil Maps, 2 pages.

ATTACHMENTS

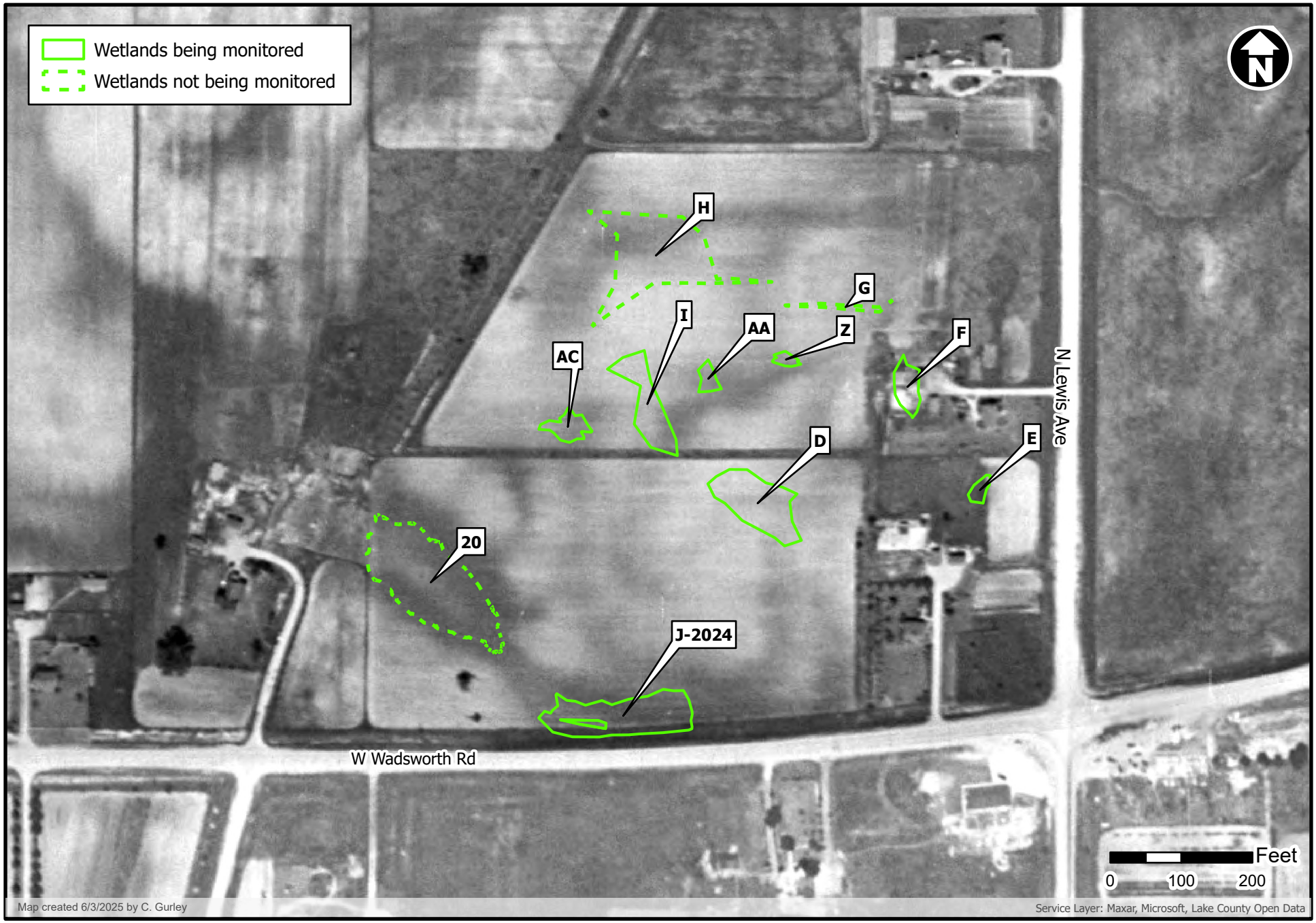
Historic Aerial Maps
Area 1, North of Wadsworth Rd



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (1939)

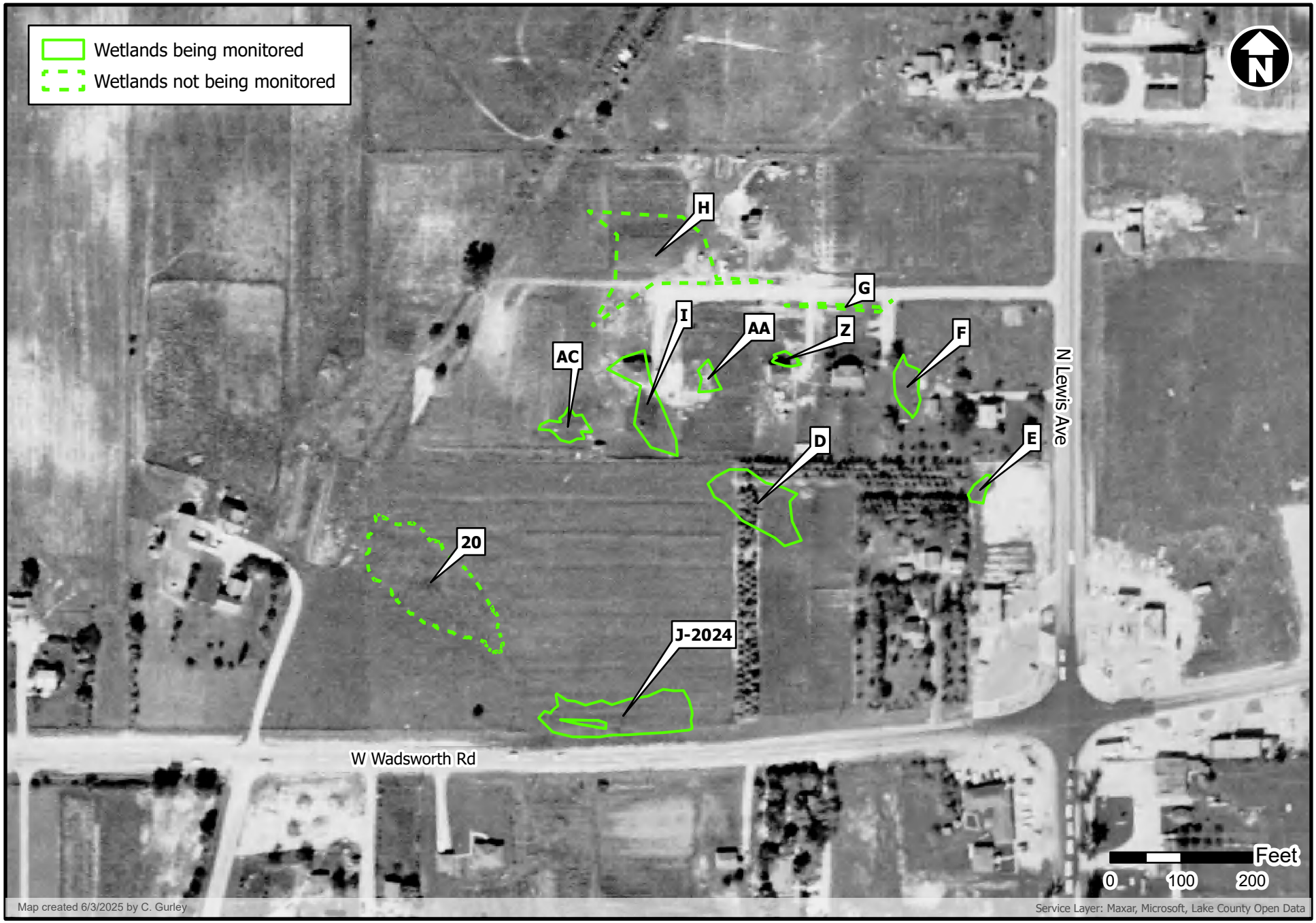
CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (1946)

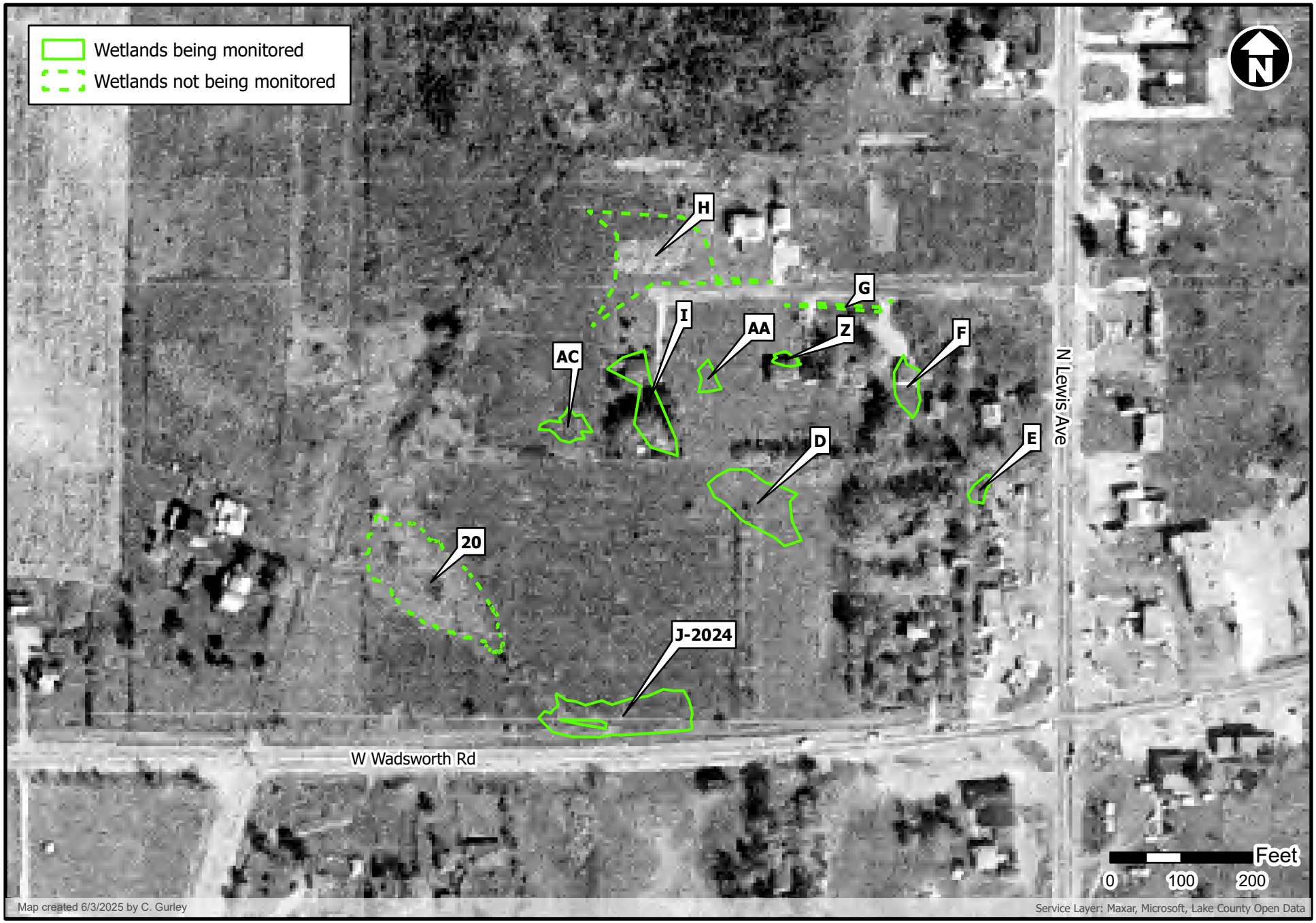
CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (1961)

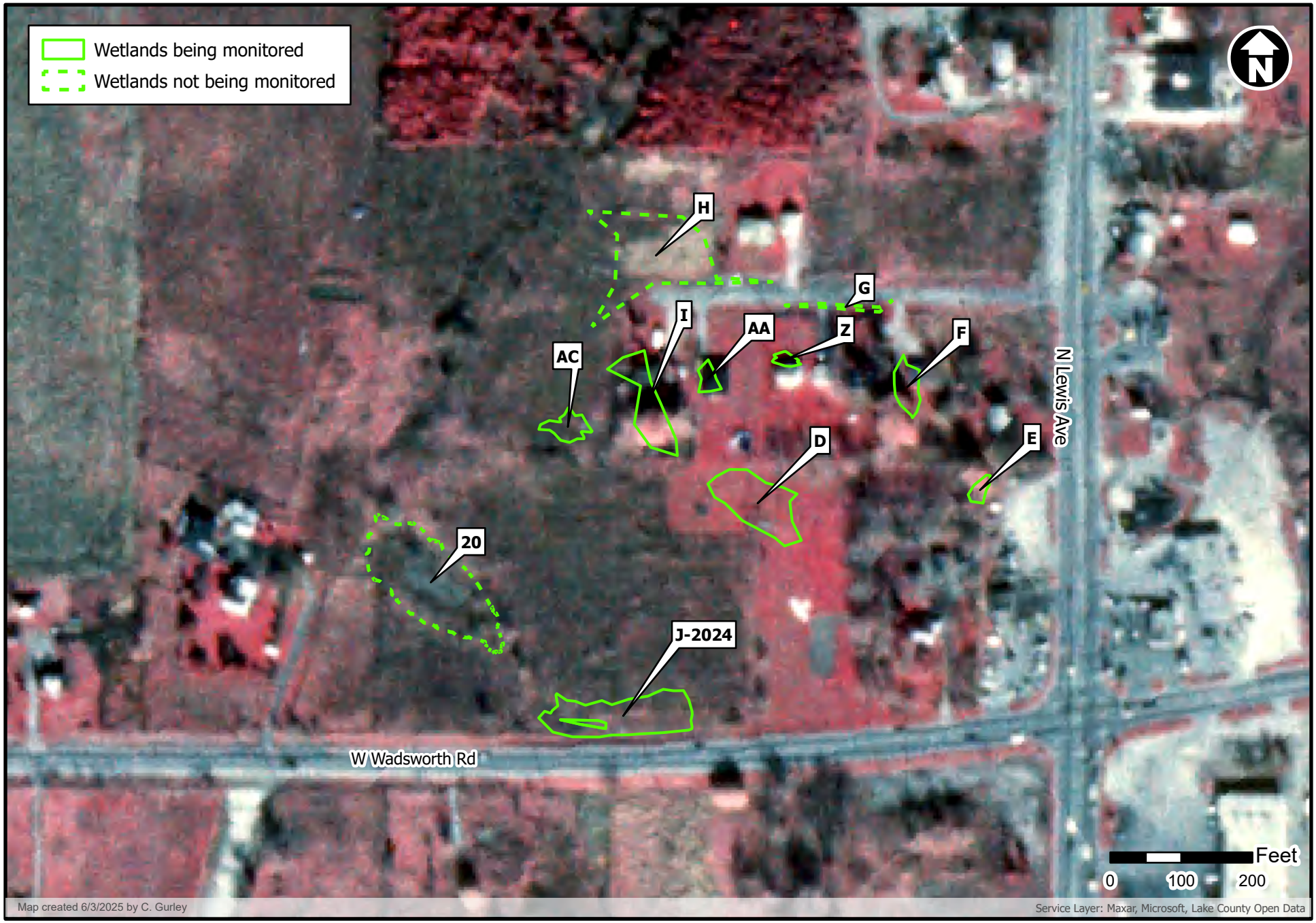
CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (1974)

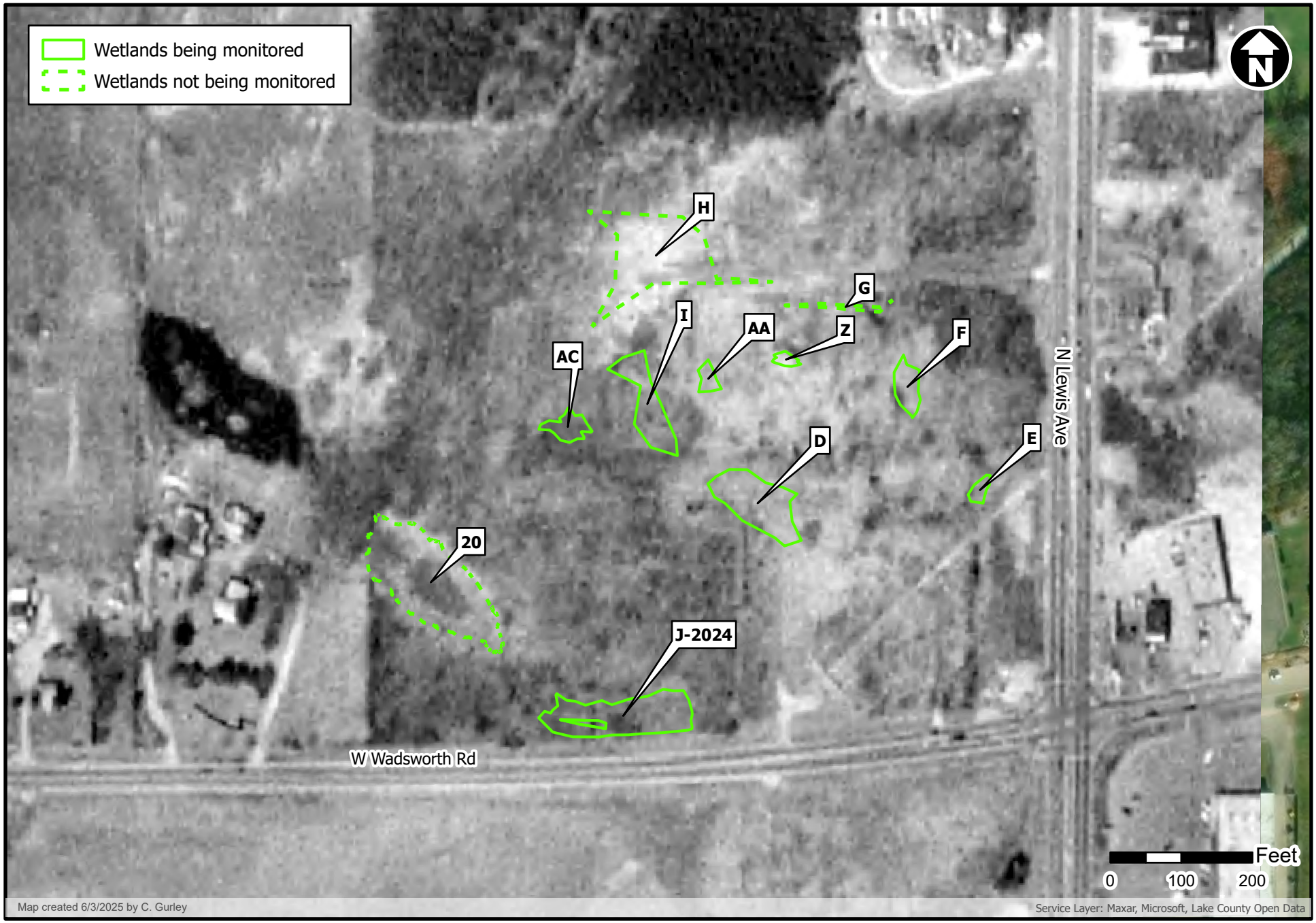
CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (1980 infrared)

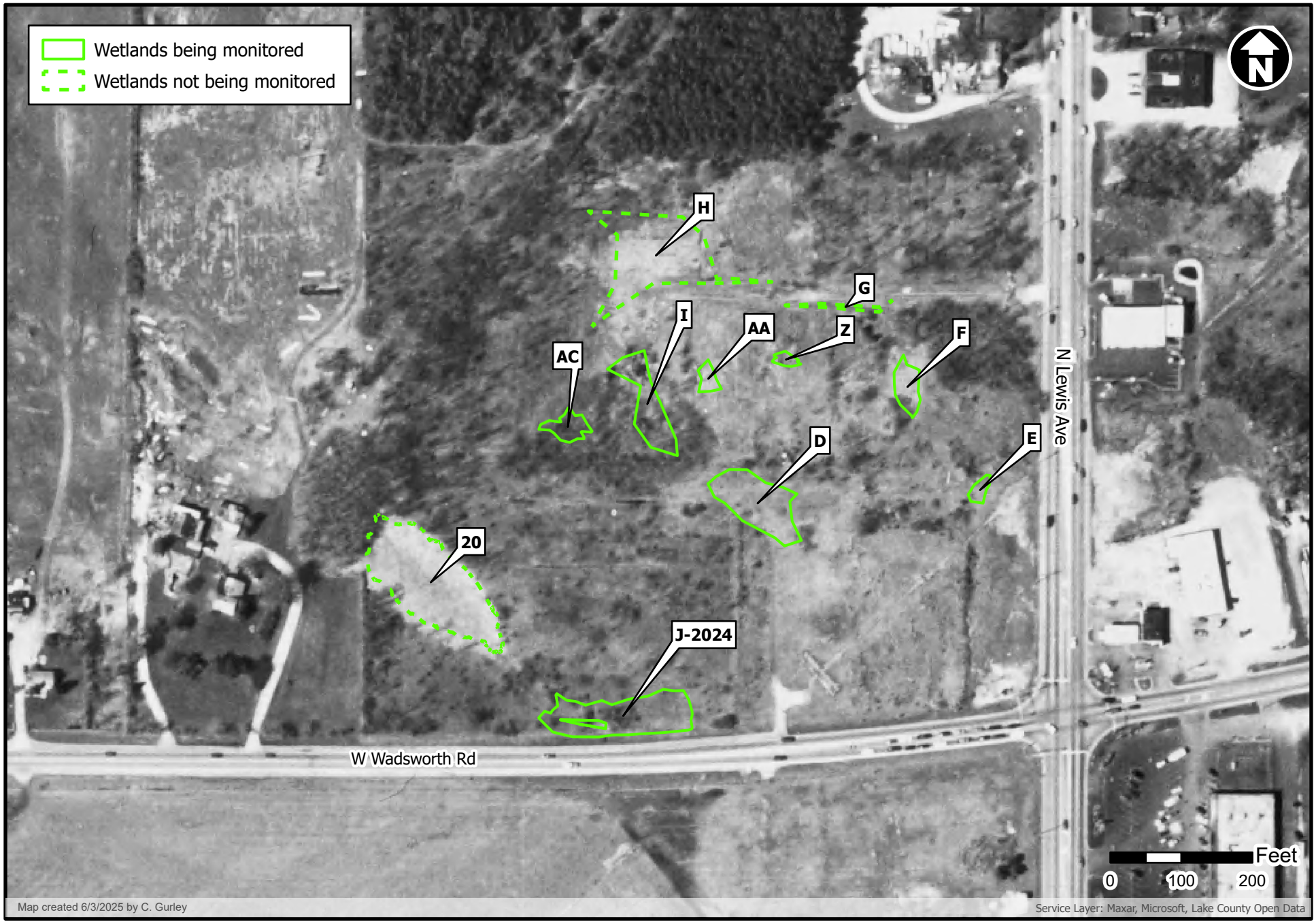
CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (1993)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (1997)

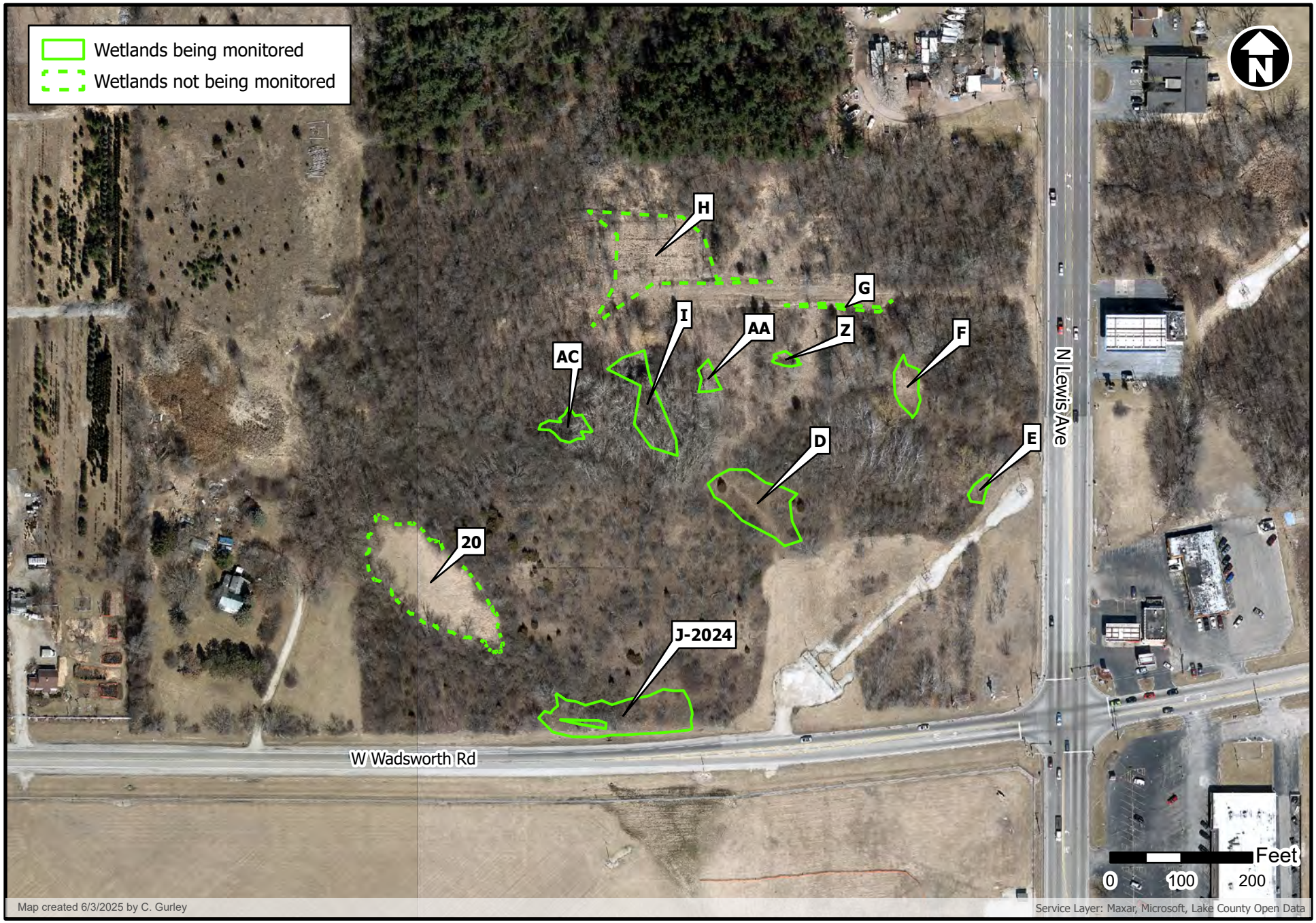
CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (2017)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (2018)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (2023)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 1 (2023, with hydro lines)

CMT
Crawford, Murphy & Tilly

ATTACHMENTS

Historic Aerial Maps
Area 3, southern part of Airport Facility



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (1939)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (1946)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (1961)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (1974)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (1980 infrared)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (1993)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (1997)

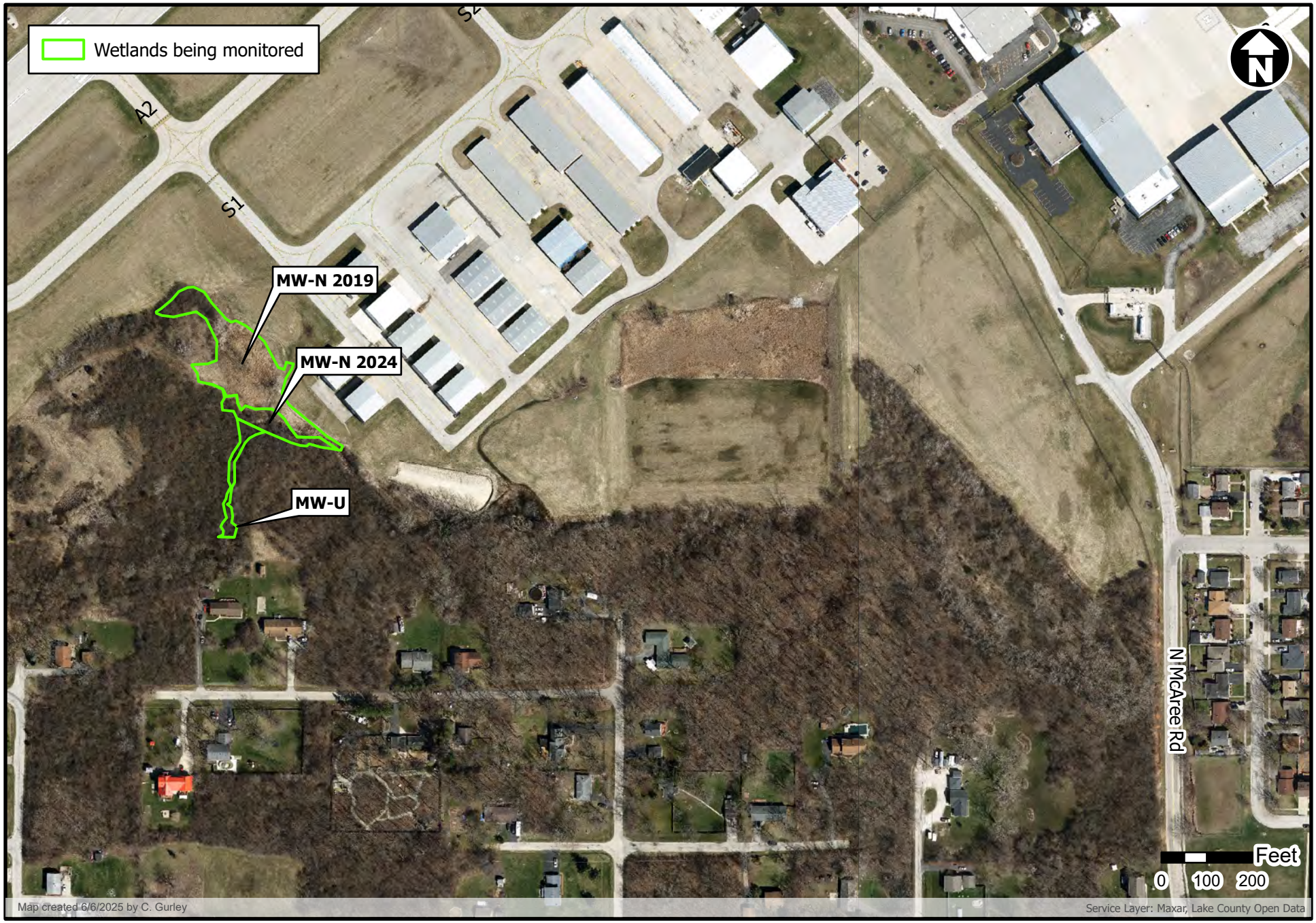
CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (2002)

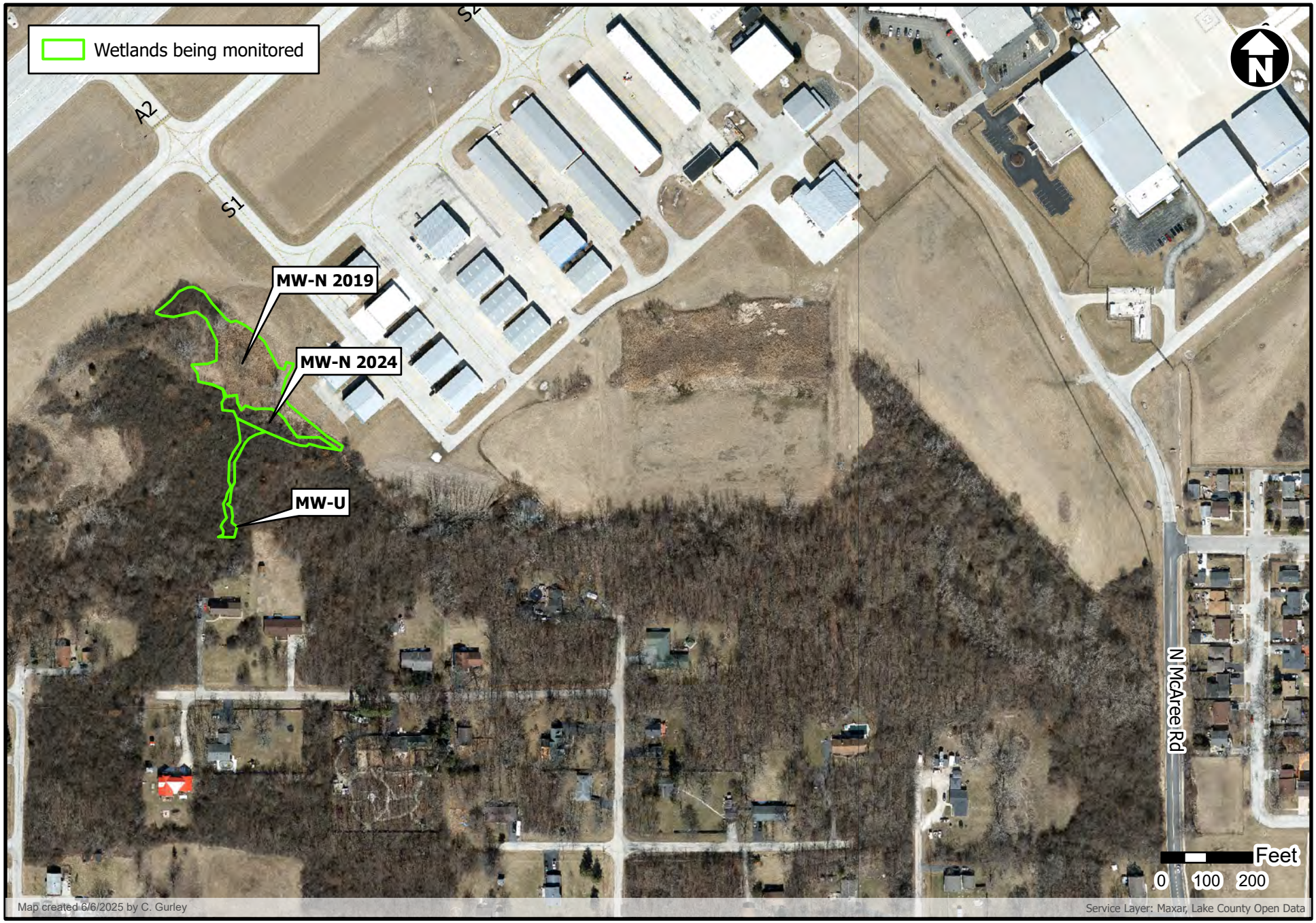
CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (2017)

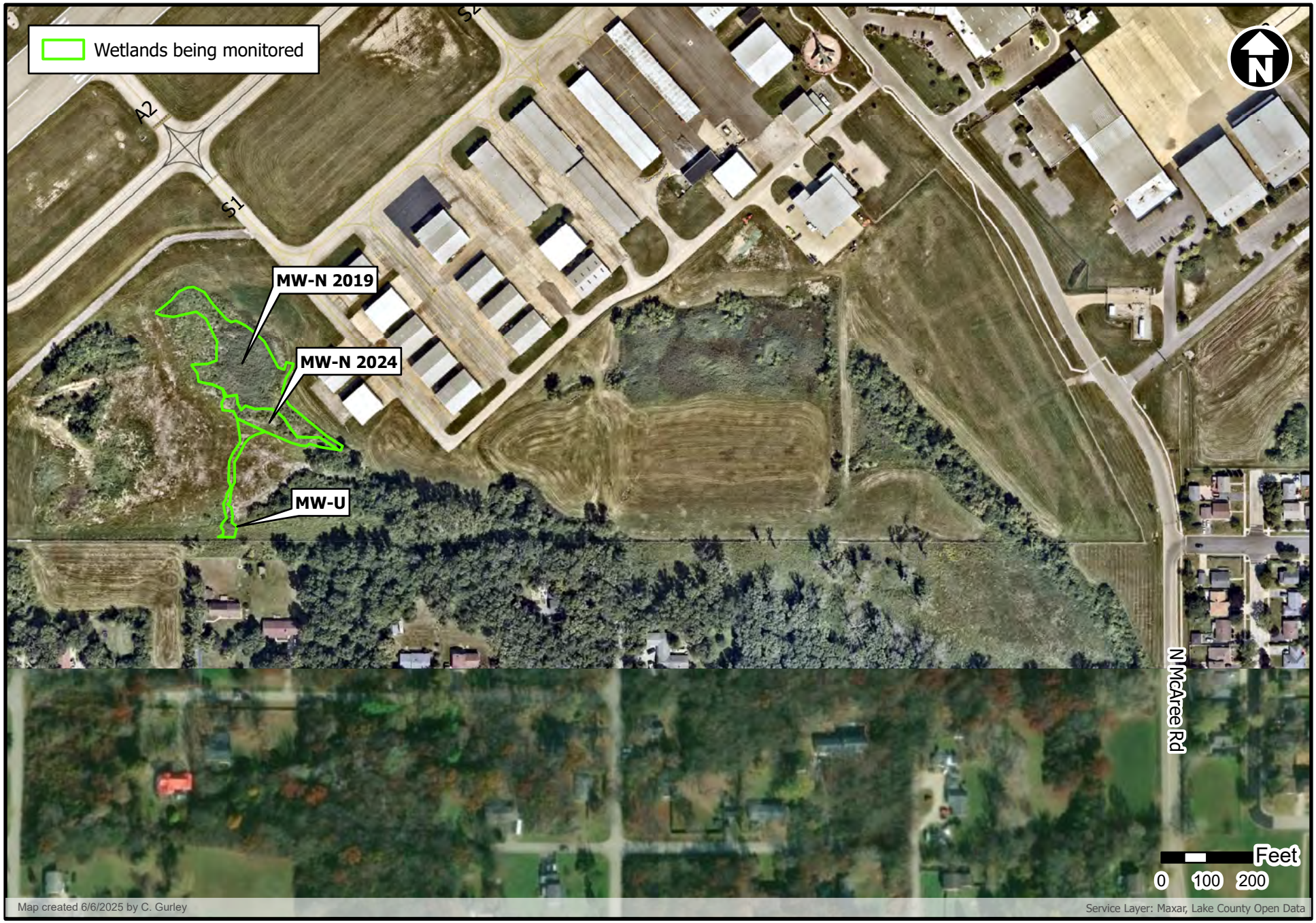
CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (2018)

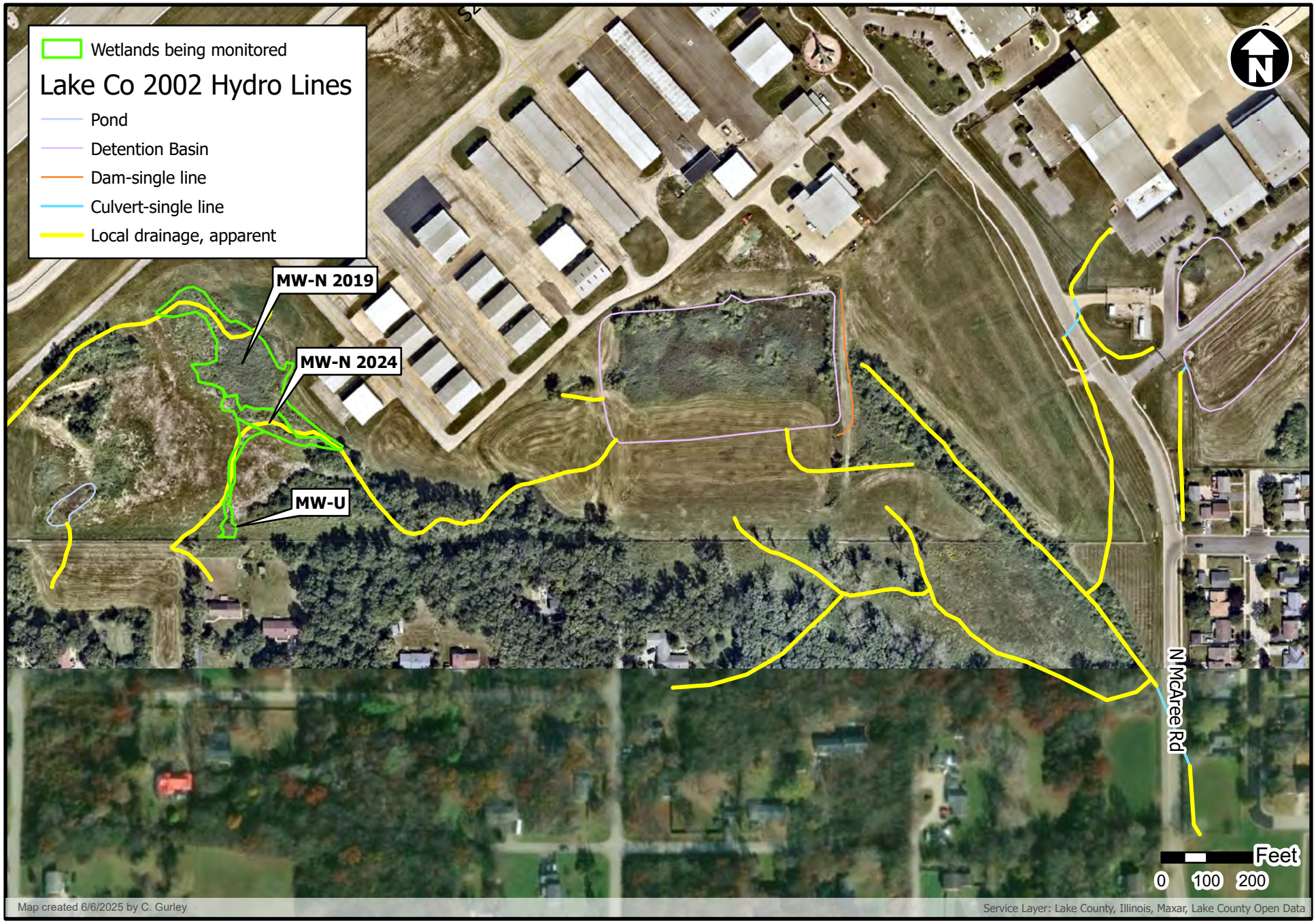
CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (2023)

CMT
Crawford, Murphy & Tilly



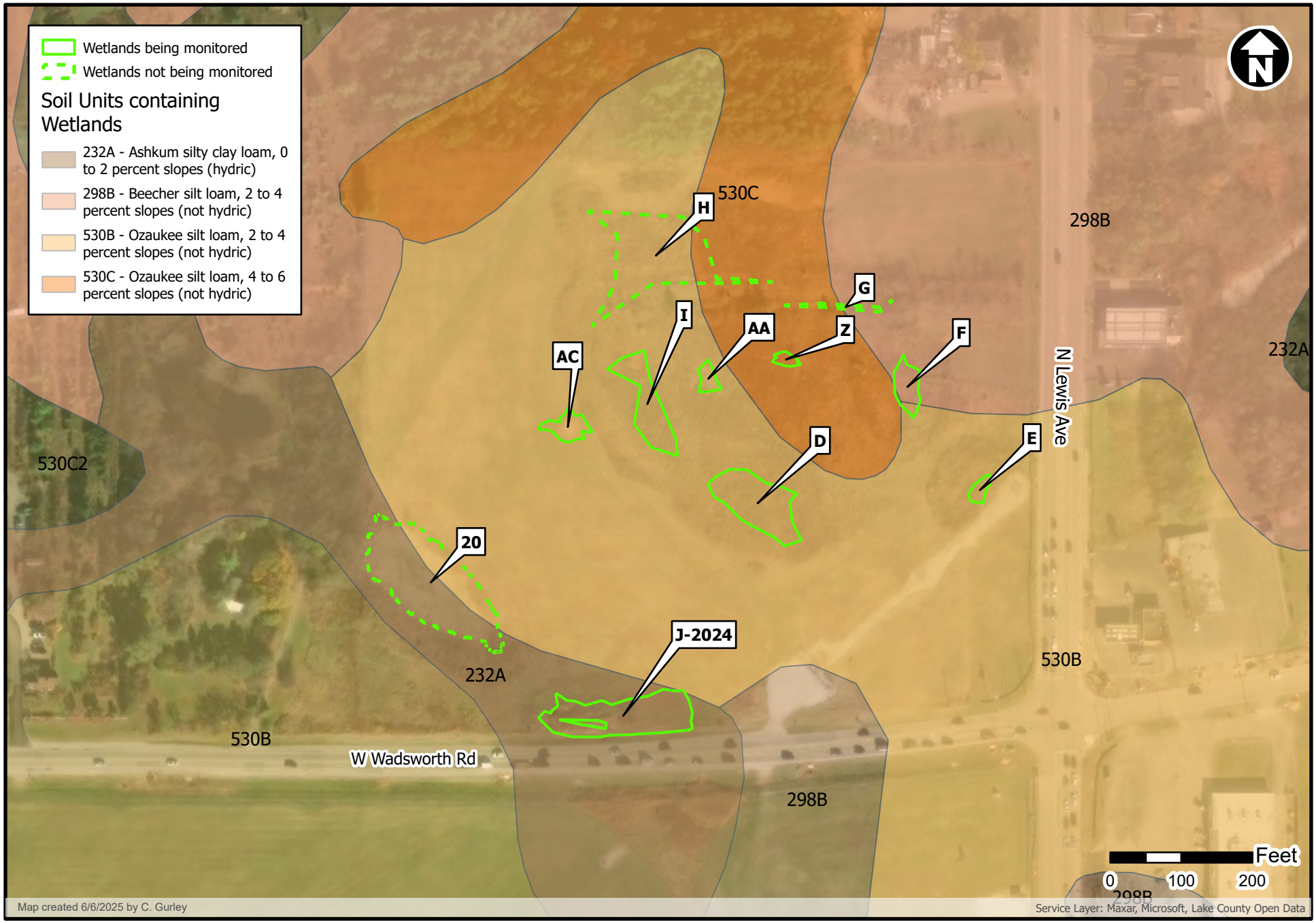
UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Historic Aerial Imagery, Area 3 (2023, with hydro lines)

CMT
Crawford, Murphy & Tilly

ATTACHMENTS

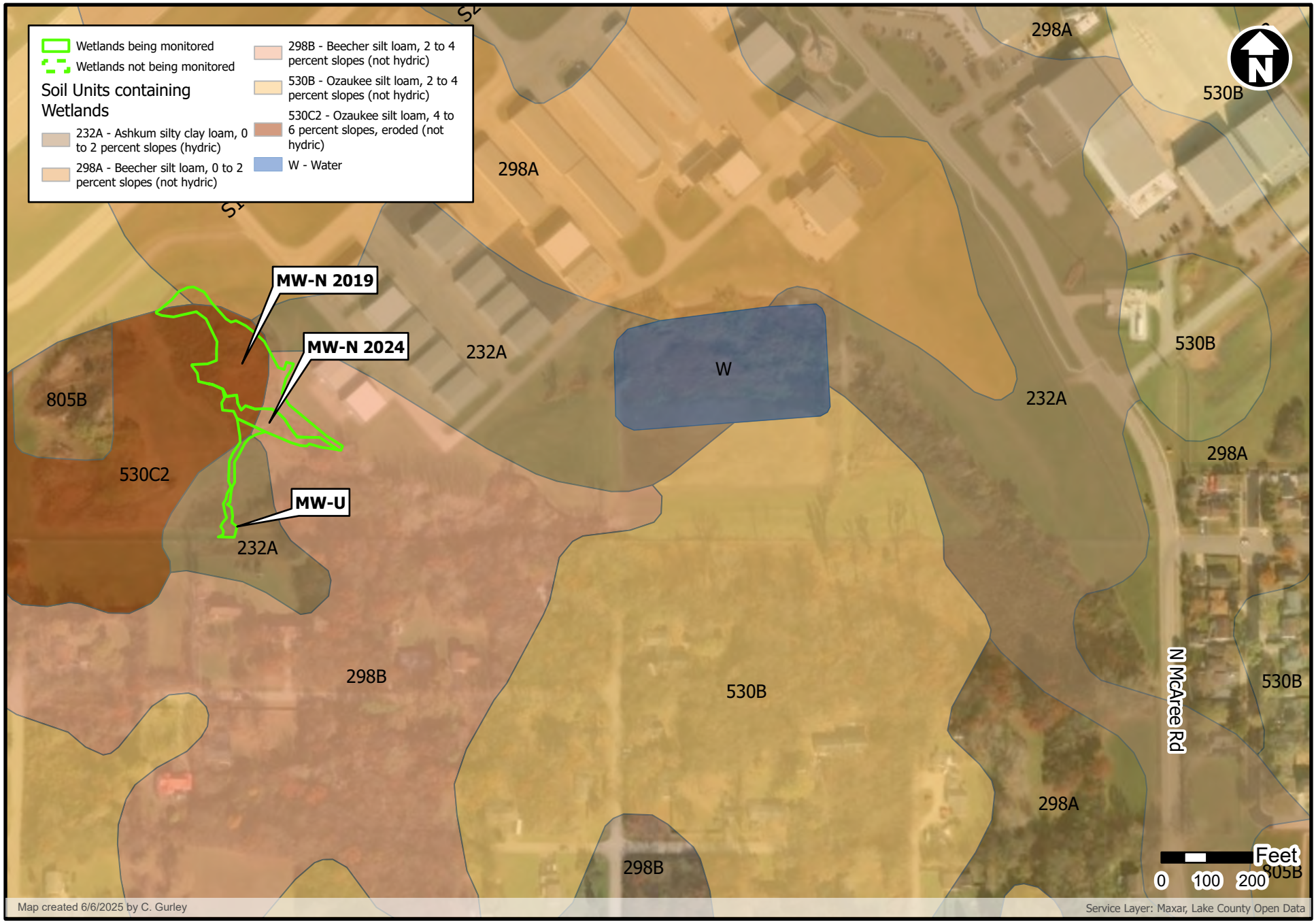
NRCS SSURGO Soil Maps



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

NRCS SSURGO Soil Map (Area 1)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

NRCS SSURGO Soil Map (Area 3)

CMT
Crawford, Murphy & Tilly

STORMWATER MANAGEMENT COMMISSION

September 23, 2025

Mr. Skip Goss
Waukegan National Airport
2601 Plane Rest Dr.
Waukegan, IL 60087

Subject: **SMC File #: SESC-23-129**
Waukegan National Airport, 11552 W. Wadsworth Rd., Beach Park, Lake Co., IL
PIN #s: 04-29-302-014 through 04-29-302-019
ISOLATED WETLAND EXCLUSION DETERMINATION

Dear Mr. Goss:

This letter is a follow-up to our August 14, 2025, Lake County Preliminary Jurisdictional Determination that identified the Wetlands AA and Z as excluded from regulation as *Isolated Waters of Lake County* (IWLC) under the Lake County Watershed Development Ordinance (WDO). The attached exhibit *UGN Airport Obstruction Removal Wetland Enhancement Mitigation Aerial Map Post-Impact (Sept 2023, Area 1 & Area 3)*, by Crawford, Murphy & Tilly, Inc. (CMT, dated 6/9/2025) shows the features referenced in this letter. The exclusion review was requested for Wetlands D, E, F, U, N, Z, AA, and AC. SMC also included Wetland I.

Based on a review of available information and consultation with the SMC Enforcement Officer (EO), the following sites meet IWLC exclusion criteria per WDO Appendix A's definition of IWLC:

Site	Exclusion	Exclusion Description
Wetland D	A.3	Wetlands created incidental to construction grading on development sites.
Wetland E	A.3	Wetlands created incidental to construction grading on development sites.
Wetland F	A.3	Wetlands created incidental to construction grading on development sites.
Wetland I	A.1	Excavations/impoundments that have received a permit from the appropriate jurisdictional authority.

In summary, **Wetlands D, E, F, I, Z and AA are not regulatory wetlands or waters.** Note that **Wetlands N, U, and AC remain subject to either federal or local jurisdiction,** and impacts to those features requires appropriate permitting consistent with the WDO—unless you demonstrate they are IWLC based on a valid jurisdictional determination (WDO §1001.01) and obtain an IWLC exclusion request from the EO.

If you disagree with this exclusion determination, you may submit a written appeal to SMC.

We would like to be of assistance. If you have questions regarding this exclusion letter or would like to set up a meeting, please contact Ms. Juli Crane at jcrane@lakecountyil.gov. If you have any additional concerns that have not been addressed by the regulatory staff, you may contact Chief Engineer Brian Frank at bfrank@lakecountyil.gov.

Sincerely,
LAKE COUNTY STORMWATER MANAGEMENT COMMISSION

Brian Frank, P.E., CFM
Chief Engineer

Juli E. Crane, PWS, CWS, CFM
Principal Wetland Specialist

JULI E. CRANE 000917

Enclosure: *UGN Airport Obstruction Removal Wetland Enhancement Mitigation Aerial Map Post Impact (Sept 2023, Area 1 and Area 3)*, (CMT, 6/9/2025)

xc: Christine Gurley, CMT
Heather Lacey, CMT
Craig Louden, CMT
Alexandra Zelles, CMT

This document was digitally transmitted. Please print out a copy of the document and retain for your records. If you are unable to print the document, or desire a hard copy mailed be to you, please notify SMC at your earliest convenience.



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Aerial Map Post-Impact (Sept 2023, Area 1)

CMT
Crawford, Murphy & Tilly



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Aerial Map Post-Impact (Sept 2023, Area 3)

CMT
Crawford, Murphy & Tilly

Appendix D-2

Lake County Exempt IWLC Confirmation: Wetland AA and Wetland Z

STORMWATER MANAGEMENT COMMISSION

August 14, 2025

Mr. Skip Goss
Waukegan National Airport
2601 Plane Rest Dr.
Waukegan, IL 60087

Subject: **SMC File #:** IWLC-25-1044
Waukegan National Airport (Area 1), 11552 W. Wadsworth Rd., Beach Park, Lake Co., IL
PIN #s: 04-29-302-014 through 04-29-302-019
LAKE COUNTY PRELIMINARY WETLAND JURISDICTIONAL DETERMINATION and IWLC EXCLUSION

Dear Mr. Goss:

This letter responds to your request for a Lake County Preliminary Wetland Jurisdictional Determination (LCPJD) for the above-referenced location, received by the Lake County Stormwater Management Commission (SMC) on August 7, 2025. SMC wetland staff reviewed reference materials (see Addendum A) and performed a site reconnaissance on August 13, 2025. The aquatic resources referenced in this letter are depicted on the enclosed exhibit *UGN Airport Obstruction Removal Wetland Enhancement Mitigation Aerial Map, June 2025 Imagery*, by Crawford, Murphy & Tilly, Inc. (CMT), no date. Per request, this LCPJD only covers Wetland AA and Wetland Z. The following are our findings:

- Wetland AA and Wetland Z appear to be *Isolated Waters of Lake County* (IWLC) as defined in the Lake County Watershed Development Ordinance (WDO, 7-11-2023), which is subject to regulation by the SMC. However, based on a review of submitted reference materials, the Enforcement Officer (EO) has determined that Wetlands AA and Z meet exclusion criterion A.3 under the definition of IWLC in the WDO: "Wetlands created incidental to construction grading on development sites." **Accordingly, Wetlands AA and Z are not considered regulatory wetlands/waters.**

- The project area does not appear to contain federally regulated U.S. Army Corps of Engineers (USACE) aquatic resources, as currently defined in 33 U.S.C. 1251 et seq., Section 328.3(a).

This LPJD has been approved by SMC's Chief Engineer and the findings are valid for a period of three (3) years from the date of this letter unless new information warrants a revision before the expiration date. If you disagree with the findings of this LCPJD, you may request an approved jurisdictional determination (AJD) from the USACE-Chicago District Office.

This LCPJD represents SMC's professional opinion regarding the jurisdictional status of the aquatic resources on the subject site. We determined the jurisdiction of IWLC using the definition of IWLC contained in Appendix A of the WDO (as amended 7-11-23). We based the findings for potential federally regulated aquatic resources on our interpretation of the "Revised Definition of 'Waters of the United States' Conforming," dated 11-8-2023 (33 CFR Section 328.3(a)); the "Memorandum to the Field Between the U.S. Department of the Army, U.S Army Corps of Engineers and the U.S. Environmental Protection Agency Concerning the Proper Implementation of 'Continuous Surface Connection' Under the Definition of 'Waters of the United States' Under the Clean Water Act", dated 3-12-2025; and the U.S. Environmental Protection Agency-U.S Army Corps of Engineers "Training: 2025 Continuous Surface Connection," dated 4-29-2025.

Permitting Considerations

1. This letter satisfies the requirement for a written jurisdictional determination under WDO §1001 for the indicated aquatic features.

2. The surveyed boundaries of all existing aquatic resources on the site, including features constructed in dry land, need to be clearly depicted on the engineering plans for permitting purposes. Plans should also show the approximate location of off-site wetlands/waters (recommended within 100 feet of the development site).

3. The wetland delineation exhibit is to show the approximate location and extent of *off-site* wetlands/waters based on available reference materials (WDO §1000.02.F.), and the delineation report should describe the relative quality of any off-site wetlands on properties within the maximum buffer requirements adjoining the development site.

4. A Lake County Watershed Development Permit (WDP) may be required from the SMC for site development in accordance with the provisions of the WDO. Please coordinate with SMC's Regulatory Supervisor Kelcey Traynoff (ktraynoff@lakecountyil.gov) for questions regarding the WDP Standard Provisions and SMC's Principal Wetland Specialist Juli Crane (jcrane@lakecountyil.gov) for questions regarding Wetland Submittal provisions.

We would like to be of assistance. If you have questions regarding this LCPJD or would like to set up a meeting, please contact Ms. Juli Crane at the above email.

Sincerely,
LAKE COUNTY STORMWATER MANAGEMENT COMMISSION

Brian Frank, P.E., CFM
Chief Engineer

Juli E. Crane, Sr. PWS, CWS, CERP
Principal Wetland Specialist

Enclosures: *Figure: UGN Airport Obstruction Removal Wetland Enhancement Mitigation Aerial Map, June 2025 Imagery* (CMT, n.d.)
Addendum A: SMC PJD Field Report (8/13/2025)

xc: Kathy Chernich, USACE
Chicagorequests@usace.army.mil
Christine Gurley, CMT
B. Frank, SMC, EO for Beach Park
B. Santelik, SMC, CWS for Beach Park
K. Traynoff, SMC

This document was digitally transmitted. Please print out a copy of the document and retain for your records. If you are unable to print the document, or desire a hard copy mailed be to you, please notify SMC at your earliest convenience.



UGN Airport Obstruction Removal Wetland Enhancement Mitigation

Aerial Map, June 2025 Imagery

CMT
Crawford, Murphy & Tilly

STORMWATER MANAGEMENT COMMISSION

Addendum A
Preliminary Jurisdictional Determination Field Report

LakeCounty

Site Name: *Waukegan Airport PJD 2025*

Date: *August 13, 2025 2:20 PM*

SMC #: *IWLC-25-1044*

USACE #: *N/a*

Attendees:
- **SMC Representative:** *Juli Crane*
- **Other SMC Representative(s):** *Other*
- **Other Attendees:** *None*

PJD Requestor:
- **Name:** *Skip Goss, Waukegan National Airport*
- **Address:** *2601 Plane Rest Dr.*
- **City:** *Waukegan*
- **State/Zip:** *IL 60087*
- **Email:** *Sgoss@waukeganport.com*

Site Info:
- **Address:** *11552 Wadsworth Rd*
- **City:** *Beach Park*
- **State/Zip:** *IL 60099*
- **PIN#:** *04-29-302-014 through 04-29-302-019*
- **Lat/Long:** *42.42962 / -87.85681*
- **Description:** *Fallow land recently cleared of brush; evidence of past residential subdivision development (prior to 1961) and abandonment/removal of structures and infrastructure before 1993. PJD request is for only two wetlands: Wetland AA and Wetland Z.*

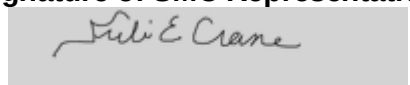
References: *UGN Airport Obstruction Removal Wetland Enhancement Mitigation Aerial Map (CMT, June 2025 imagery, n.d.), FEMA Floodplain Map (2016), Aerial Photos (1939-2024,Lake County Online GIS), Topographic Map - 1' contours (Lake County Online GIS, 2007 & 2017), Lake County Wetland Inventory Map (Lake County Online GIS, 2002), Lake County Hydro Lines (Lake County Online GIS, 2002), Lake County Soil Surveys (SCS 1970 & NRCS 2005), USGS Quadrangle Maps (1960, 1972, 1993), USGS Flood of Record Map (Zion HA-233, 1967), Lake County Storm Sewer Network Maps (SMC GIS, 2022); Lake County Wetland Restoration & Preservation Plan - Online Decision Support Tool (SMC, 2020), Topographic Wetness Index Map (ISWS, 2017)*

Disposition of Isolated Waters of Lake County (IWLC):
- **Site appears to contain IWLC:** *Yes*
  - **List wetland/water IDs from reference map:** *Wetlands AA and Z*
  - **Potential IWLC Exclusions:** *Wetlands AA and Z appear to have formed incidental to construction activities*
- **SMC representative concurs with staked/flagged IWLC boundaries:** *No*
  - **If SMC representative DOES NOT concur, please explain:** *BV not requested*

Disposition of Federally Regulated Aquatic Resources:
- **Site appears to contain Federally Regulated Aquatic Resources [33 CFR 328.3(a)]:** *No*
  - **List wetland/water IDs from reference map and basis:** *N/A*
  - **Apparent Exclusions [33 CFR 328.3(b)]:** *Wetland AA and Wetland Z lack connection to RWP; therefore, they are not (a)(4) wetlands.*

Comments: *Recent high mowing of site has occurred. Request is related to SESC-23-129 approval.*

Attestment: *SMC has reviewed the information herein and CONCURS with determination.*
Signature of SMC Representative:



Appendix D-3

Lake County Wetland Monitoring Conditional Acceptance Letter

STORMWATER MANAGEMENT COMMISSION

September 5, 2025

Mr. Skip Goss
Waukegan Airport Authority
2601 W. Plane Rest Dr.
Waukegan, Illinois 60087

Subject: SMC# SESC-23-129
Waukegan Airport Obstruction Removal Project, Waukegan, Lake County, IL
Conditional Early Sign-off of Wetland Mitigation

Dear Mr. Goss:

This letter responds to the request for early sign-off of wetland mitigation associated with unauthorized impacts from tree removal conducted as part of the Waukegan Airport Obstruction Removal project. The request was submitted on your behalf by CMT and received by the Lake County Stormwater Management Commission (SMC) on August 24, 2025.

Based on the June 2025 monitoring results, five mitigation areas fully meet performance standards outlined in the approved mitigation plan (CMT, revised 9/8/2023). However, 12 additional areas did not meet one or more of the five required performance standards, and leniency was requested for those deficiencies.

Some failures to meet the floristic quality (native mean C) criterion may be due to plant misidentifications—particularly among sedge species. For example, *Carex stricta* and *C. pellita* may have been misidentified as *C. lacustris*. Additionally, one floristic inventory recorded the presence of *Carex crawfordii*, a state-listed species from the Ovales group of sedges. This may in fact be a more common species such as *C. scoparia* or *C. tribuloides*. SMC recommends verification by a sedge specialist, as the confirmed presence of a listed species could have implications for future site work or expansion activities.

After detailed review of each site and non-attainment issue with the Chief Engineer, **SMC agrees to the requested leniency, subject to the following conditions**:

- Fall 2025 monitoring will not be required.
- The performance summary (Appendix A), submitted with the early sign-off request, will be accepted as the final monitoring report.
- As a condition of leniency, the **Airport Authority must conduct one herbaceous weed management treatment (either in fall 2025—September/October—or June 2026) and provide documentation to SMC covering the following areas and species**:
    - **Wetland 13** (frog pond) – Treat common buckthorn (*Rhamnus cathartica*)
    - **Buffer U/N** – Treat Canada thistle (*Cirsium arvense*)
    - **Buffer X/Y/K/13** – Treat Canada thistle.

Documentation must include treatment date(s), herbicide(s) used, and photographs of treated species clearly marked with dye.

Upon receipt and verification of this documentation, SMC will issue final mitigation approval and authorize the release of retainage monies, minus any applicable assessments.

We would like to be of assistance. If you have any questions, or would like to set up a meeting, please call me at jcrane@lakecountyil.gov. If you have any additional concerns that have not been addressed by the regulatory staff, you may contact Chief Engineer Brian Frank at bfrank@lakecountyil.gov.

Sincerely,
LAKE COUNTY STORMWATER MANAGEMENT COMMISSION

Brian Frank, P.E., CFM
Chief Engineer

Juli E. Crane, PWS, CWS, CFM
Principal Wetland Specialist

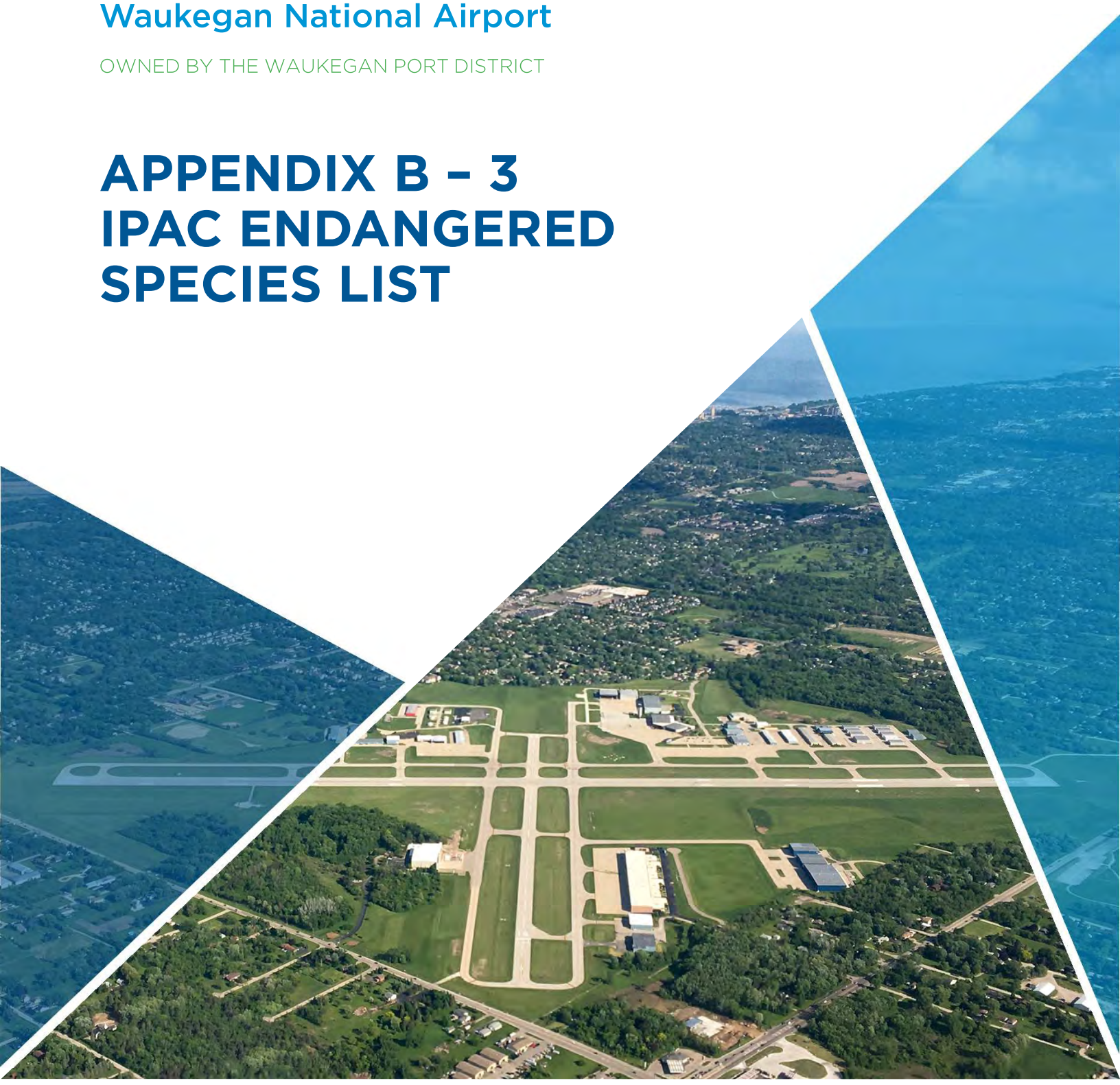
xc: Alexandra Zelles, Heather Lacey, CMT
Craig Louden, Antonio Marin, CMT
Mea Blauer, SMC

This document was digitally transmitted. Please print out a copy of the document and retain for your records. If you are unable to print the document, or desire a hard copy be mailed to you, please notify SMC at your earliest convenience.

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX B – 3
IPAC ENDANGERED SPECIES LIST



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Service Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800

In Reply Refer To: 02/12/2026 19:25:46 UTC
Project Code: 2023-0008410
Project Name: Waukegan Replacement Runway 5/23

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing

determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chicago Ecological Service Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

PROJECT SUMMARY

Project Code: 2023-0008410
Project Name: Waukegan Replacement Runway 5/23
Project Type: Airport - Maintenance/Modification
Project Description: Construct a new replacement Runway 5/23 of 7,000 feet long and 150 feet wide. The replacement runway would be 400 feet from centerline-to-centerline northwest of the existing Runway 5/23. Construct a roadway tunnel allowing for replacement Runway 5/23 to be constructed over Illinois Route 131-Green Bay Road. Other associated work includes installation of runway lights, precision approach path indicators, taxiway work, perimeter security and wildlife fence, and approximately 90 acres of tree removal for site clearing and obstruction removal.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.4188784,-87.87298202417519,14z



Counties: Lake County, Illinois

ENDANGERED SPECIES ACT SPECIES

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

BIRDS

NAME	STATUS
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Rusty Patched Bumble Bee *Bombus affinis* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9383	Endangered
Western Regal Fritillary *Argynnis idalia occidentalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/12017	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Pitcher's Thistle *Cirsium pitcheri* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8153	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Danielle clooney
Address: 8790 Purdue Road
City: Indianapolis
State: IN
Zip: 46268
Email dclooney@cmtengr.com
Phone: 5132165804

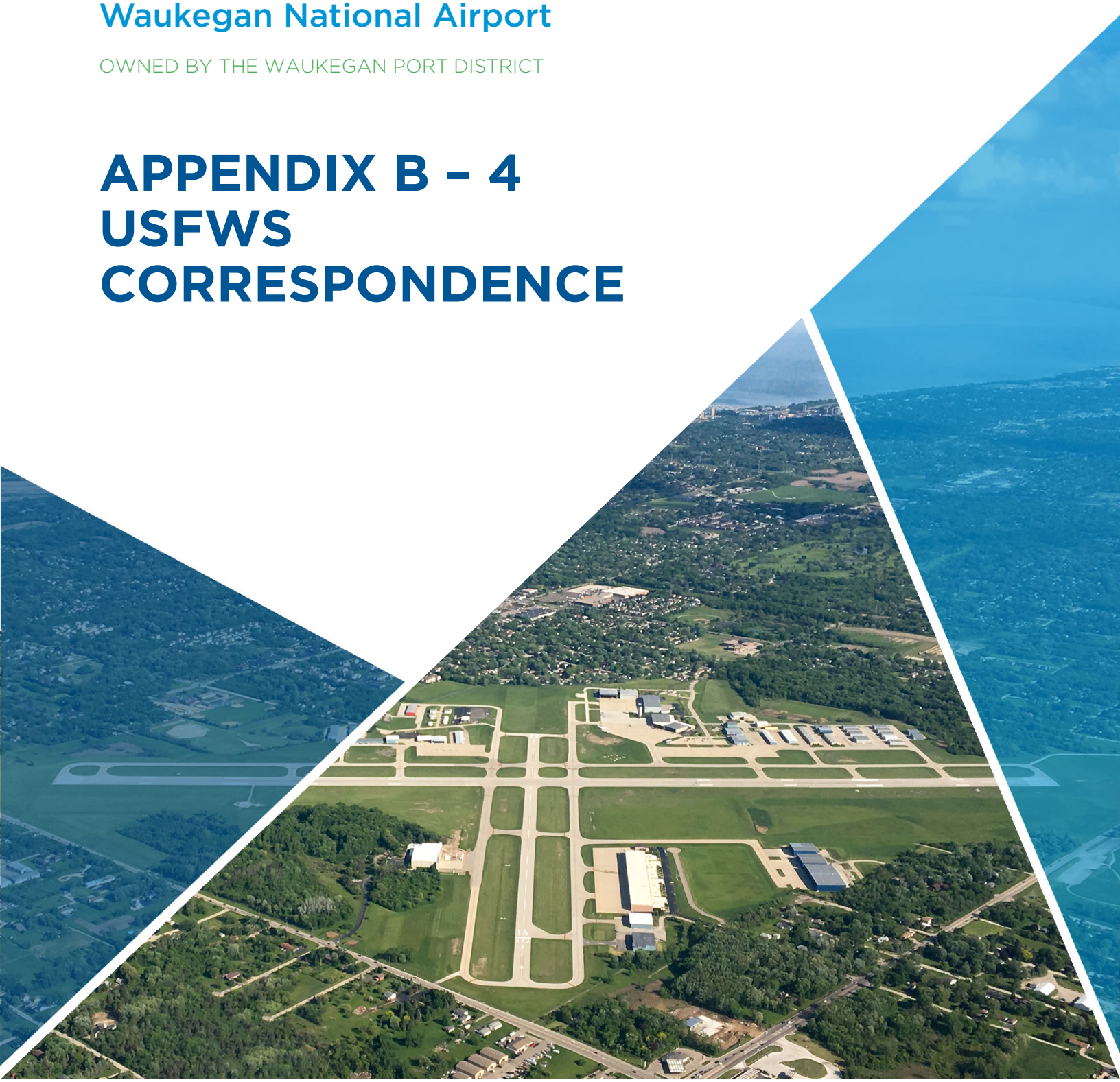
LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX B – 4
USFWS CORRESPONDENCE



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

From: Cirton, Shawn
To: Terry Schaddel; Heather Lacey
Cc: Bobb.Beauchamp@faa.gov
Subject: Fw: [EXTERNAL] RE: UGN PDEA Cooperating Agency Comments
Date: Wednesday, May 24, 2023 1:13:43 PM

External Message: *This email was sent from someone outside of CMT. Please use caution with links and attachments from unknown senders or receiving unexpected emails.*

Hi Terry and Heather. I was going over projects and just wanted to make sure that you had my response to Bob (regarding adding a conservation measure for the RPBB) as you revised the BA.

Please let me know if we need to discuss further.

Shawn Cirton
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Chicago Illinois Field Office
230 South Dearborn Street, Suite 2938
Chicago, IL 60604
(847)366-2345

From: Cirton, Shawn <shawn_cirton@fws.gov>
Sent: Wednesday, May 17, 2023 12:16 PM
To: Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Subject: Re: [EXTERNAL] RE: UGN PDEA Cooperating Agency Comments

Hi Bob. I didn't have time to thoroughly review the entire PDEA. So I won't provide comments.

However, I did review the draft BA. The BA is fine. However, based on my review and our discussion on 3/21/23, the conservation measure (CM) of planting appropriate floral resources in the prairie/savanna LCFPD areas south of Yorkhouse Road, to offset the loss of RPBB foraging habitat, should be added. The CM should refer to the USFWS RPBB planting list. Our former webpage had that list readily available for the public. I do not think it is available on that website any longer but I can track it down and get it to your team.

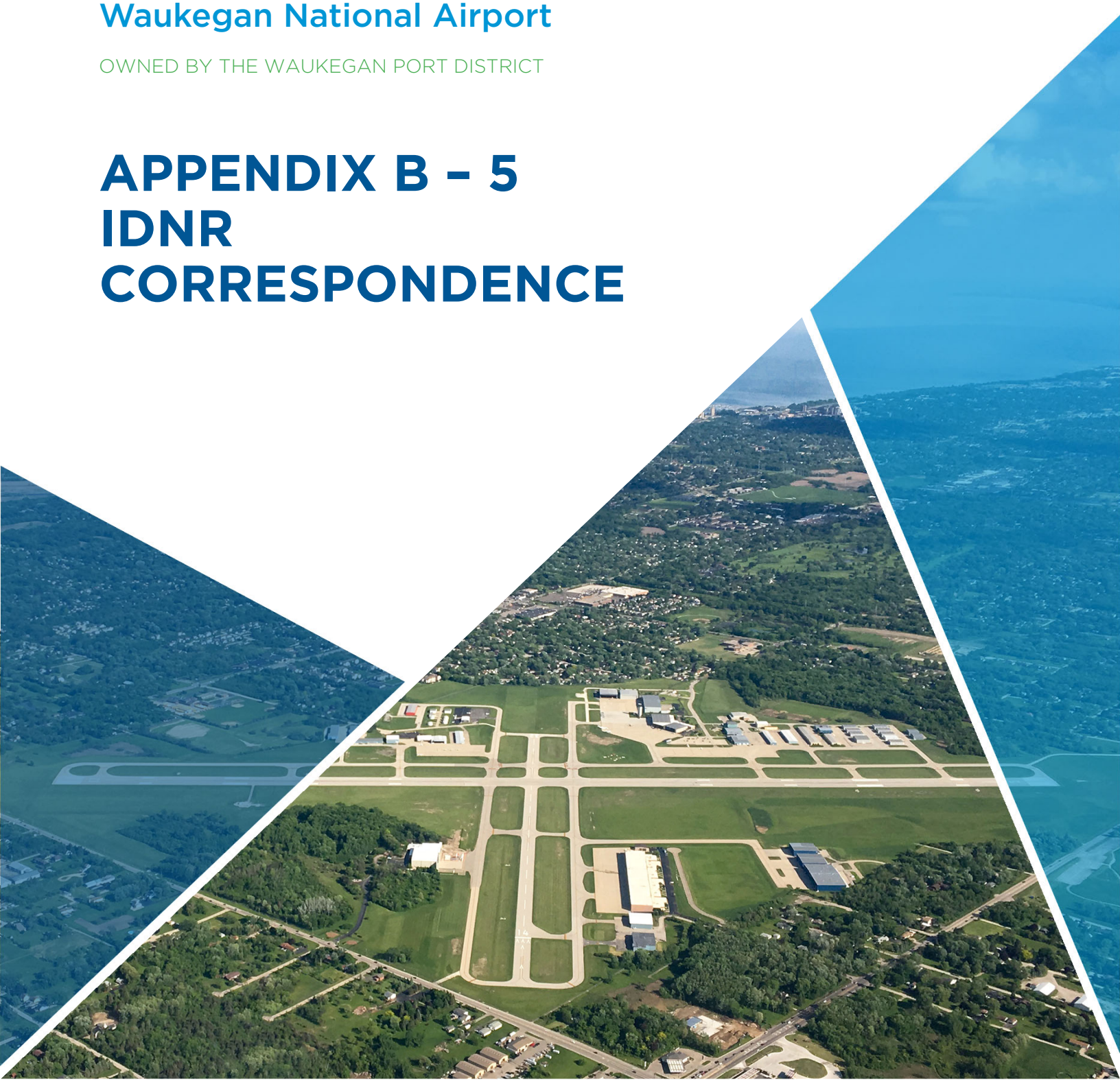
Let me know if you our your consultant team would like to discuss further.

Shawn Cirton
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Chicago Illinois Field Office
230 South Dearborn Street, Suite 2938
Chicago, IL 60604
(847)366-2345

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX B – 5
IDNR CORRESPONDENCE



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

JB Pritzker, Governor • Jim Montgomery, Director
One Natural Resources Way • Springfield, Illinois 62702-1271
www.dnr.illinois.gov

October 28, 2026

Alexandra Zelles
550 North Commons Drive, Suite 116
Aurora, IL 60504

RE: Waukegan Replacement Runway 5/23
Consultation Program
EcoCAT Review #2706905
Lake County

Dear Ms. Zelles:

The Department has received your submission for this project for the purposes of consultation pursuant to the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075.

The purpose of this project is to provide a primary runway and associated airfield improvements that comply with FAA design standards at Waukegan National Airport (UGN). The need for the project is driven by the following non-compliant features of the existing Runway 5/23. The Proposed Action includes the following safety and operational improvements to meet the established purpose and need: Build a new replacement for Runway 5/23 that currently measures 6,000 feet in length and 150 feet in width. The replacement runway would be the same dimensions as the existing runway but relocated 400 feet from centerline-to-centerline northwest of the existing Runway 5/23; Construct a roadway tunnel allowing for replacement Runway 5/23 to be constructed over Illinois Route 131-Green Bay Road; Install associated runway and approach path apparatuses; Decommission existing Runway 5/23 and convert a portion of the former runway pavement into replacement Taxiway A; Acquisition of approximately 17.62 acres of land in fee simple title and approximately 56.43 acres in avigation easements; includes the relocation of 16 residences; Removal of approximately 27 acres of trees to construct the improvements and obstruction removal within the Runway Protection Zones and Airport Imaginary Surfaces; and other connected actions and mitigation measures, including wetland and stream mitigation, construction and modification of stormwater basins.
Note: this project was previously submitted, and since 2022 the project scope has been adjusted and project limits have decreased.

This project was reviewed based on the plans and information provided. If the project plans, scope, or schedule change in a manner that could alter existing environmental conditions, this consultation is no longer valid and a new consultation with the Department must be reinitiated.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

State Threatened or Endangered Species
Rusty-patched Bumble Bee *(Bombus affinis)*

Due to the project scope and proximity to protected resources the Department recommends the following actions be taken to avoid adversely impacting listed species in the vicinity of the project:

Rusty-patched Bumble Bee
EcoCAT indicates a record of the state-listed Rusty-patched Bumble Bee occurs in the vicinity of the project. The Department recommends:
Foraging habitat:

- Work which disturbs the ground or may remove flowering plants should be done between October 1st and April 1st to avoid potential impacts.
- If these dates cannot be accommodated, once the growing season begins, the project limits should be routinely mowed similar to typical lawn grass height (not more than 6 inches). The area should not be allowed to grow in excess of 6 inches after the initial mowing to prevent the return of floral resources. Mowing should continue throughout the growing season.
- If these mowing restrictions cannot be accommodated, a Rusty Patched Bumble Bee foraging habitat assessment should be conducted by a qualified biologist. Factors to consider prior to conducting a site visit include time of year and how this affects the bee's life cycle, activity, and colony development. A habitat assessment proposal should be sent to the Department for concurrence on methods and results should be sent to the Department for final comment.
- Alternatively, the applicant may assume presence and seek an Incidental Take Authorization (ITA) pursuant to Part 1080 and Section 5.5 of the Illinois Endangered Species Protection Act. All questions pertaining to ITA should be directed to the ITA coordinator, Heather Osborn (Heather.Osborn@Illinois.gov). Visit the link below for information on the ITA process: Incidental Take Authorizations - Species Conservation (illinois.gov)

Overwintering habitat:

- Work within wooded areas should be done between April 1st and October 1st to avoid potential impacts.
- If these dates cannot be accommodated, a Rusty Patched Bumble Bee overwintering habitat assessment should be conducted by a qualified biologist. Factors to consider prior to conducting a site visit include time of year and how this affects the bee's life cycle, activity, and colony development. A habitat assessment

proposal should be sent to the Department for concurrence on methods and results should be sent to the Department for final comment.

- Alternatively, the applicant may assume presence and seek an Incidental Take Authorization (ITA) pursuant to Part 1080 and Section 5.5 of the Illinois Endangered Species Protection Act. All questions pertaining to ITA should be directed to the ITA coordinator, Heather Osborn (Heather.Osborn@Illinois.gov). Visit the link below for information on the ITA process: Incidental Take Authorizations - Species Conservation (illinois.gov)

Please note that due to the federal status of the Rusty-patched Bumble Bee, and its potential occurrence in the project area, coordination with the U.S. Fish and Wildlife Service may be necessary and is separate from this consultation and Illinois State regulations.

If the above recommendations are adopted, the Department has determined that impacts to these protected resources are unlikely. If surveys or habitat assessments are recommended, the Department will make a final determination regarding potential adverse impacts after reviewing the survey or assessment results. If an Incidental Take Authorization is recommended, pursued, and issued, that authorization, along with any associated permits, provides legal protection in the event the project results in the take of a listed species.

In accordance with 17 Ill. Adm. Code 1075.40(h), please notify the Department of your decision regarding these recommendations.

Consultation on the part of the Department is closed, unless the applicant desires additional information or advice related to this proposal. Consultation for Part 1075 is valid for two years unless new information becomes available which was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the action has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal and should not be regarded as a final statement on the project being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are unexpectedly encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations.

This letter does not serve as permission to take any listed or endangered species. As a reminder, no take of an endangered species is permitted without an Incidental Take Authorization or the required permits. Anyone who takes a listed or endangered species without an Incidental Take Authorization or required permit may be subject to criminal and/or civil penalties pursuant to the *Illinois Endangered Species Act*, the *Fish and Aquatic Life Act*, the *Wildlife Code* and other applicable authority.

The Department also offers the following conservation measures be considered to help protect native wildlife and enhance natural areas in the project area:

If temporary or permanent lighting is required, the Department recommends the following lighting recommendation to minimize adverse effects to wildlife:

- All lighting should be fully shielded fixtures that emit no light upward.
- Only "warm-white" or filtered LEDs (CCT < 3,000 K; S/P ratio < 1.2) should be used to minimize blue emission.
- Only light the exact space with the amount (lumens) needed to meet facility safety requirement.
- If LEDs are to be used, avoid the temptation to over-light based on the higher luminous efficiency of LEDs.

If erosion control blanket is to be used, the Department also recommends that wildlife-friendly plastic-free blanket be used around wetlands and adjacent to natural areas, if not feasible to implement project wide, to prevent the entanglement of native wildlife.

Please contact Grant Gebhards (grant.m.gebhards@illinois.gov) with any questions about this review.
Sincerely,

Bradley Hayes
Manager, Impact Assessment Section
Division of Real Estate Services and Consultation
Office of Realty & Capital Planning
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702
Bradley.Hayes@Illinois.gov
Phone: (217) 782-0031

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX C
SECTION 4(F)



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

October 24, 2025

Mr. Jay Lerner, Executive Director
Waukegan Park District
1324 Golf Road
Waukegan, IL 60087

Re: Waukegan National Airport (UGN)
Waukegan, IL
Replacement Runway Safety Project
Section 4(f) De minimis Concurrence Request

Dear Mr. Lerner:

On August 4, 2021, I sent you a letter regarding UGN's requested purchase of 0.1 acre of fee simple property and 3.8 acres of avigation easements (air rights) over the south-easternmost portion of the Greg Petry SportsPark (Lake County Parcel Number 0431300006). These acquisitions were to support the proposed construction of a new 7,000-foot replacement Runway 5/23 and ancillary improvements. On September 14, 2021, you graciously approved our request regarding the acquisition process as "*de minimis*." We are very appreciative of the Waukegan Park District's (WPD) continued support of the UGN Replacement Runway Safety Project.

With new safety and standards guidance recently issued by the Federal Aviation Administration (FAA), revisions have been made to the original UGN Replacement Runway Safety Project. These findings have led to a reduction in the overall runway length to 6,000 feet. All other development items, including revisions to Illinois Route 131/Green Bay Road, remain mostly unchanged.

Regarding the above referenced changes to the Proposed Action, we are now requesting your review and concurrence of the updated Replacement Runway Safety Project impacts as they relate to WPD property and facilities. As noted, the original Proposed Action included fee acquisition of WPD property at 0.1 acre. The updated Proposed Action no longer requires any fee acquisition of WPD property. In addition, the previous Proposed Action also identified the acquisition of 3.8 acres of avigation easements (air rights). This action has been reduced to 3.69 acres. Exhibit 1, depicting this action is attached herein. For your information, please note that a preliminary environmental analysis for the Replacement Runway Safety Project will be posted on the Waukegan National Airport's website for all resource agencies and the general public to review in the next several weeks. A Public Hearing will be held for the project at a future date determined by the FAA.

In addition, as part of the Proposed Action, UGN will also purchase Lake County Parcel Number 0431306011 from the Waukegan Park District as depicted in Exhibit 2. This referenced parcel, while owned by the Waukegan Park District, is not shown as part of the Greg Petry SportsPark as depicted on the Waukegan Park District website. Furthermore, the parcel is not depicted and/or discussed in the Waukegan Park District's Master Plan (2022) and does not appear to be available to the public for walk on recreation. Based on the aforementioned items this parcel is not subject to Section 4(f).

For purposes of the environmental analysis addressed above, I would request your concurrence that the conveyance of avigation easements to UGN will not adversely affect the activities, features or attributes of the Section 4(f) property and are therefore considered a "*de minimis"* impact on the Waukegan Greg Petry SportPark. In addition, we are requesting the Waukegan Park District's confirmation that Lake County Parcel Number 0431306011 is not subject to Section 4(f). If the Park District concurs, please sign, date and return this page. Thank you for your continued support.

Sincerely,

Skip Goss
General Manager

Cc: Heather Lacey, CMT
Craig Louden, CMT

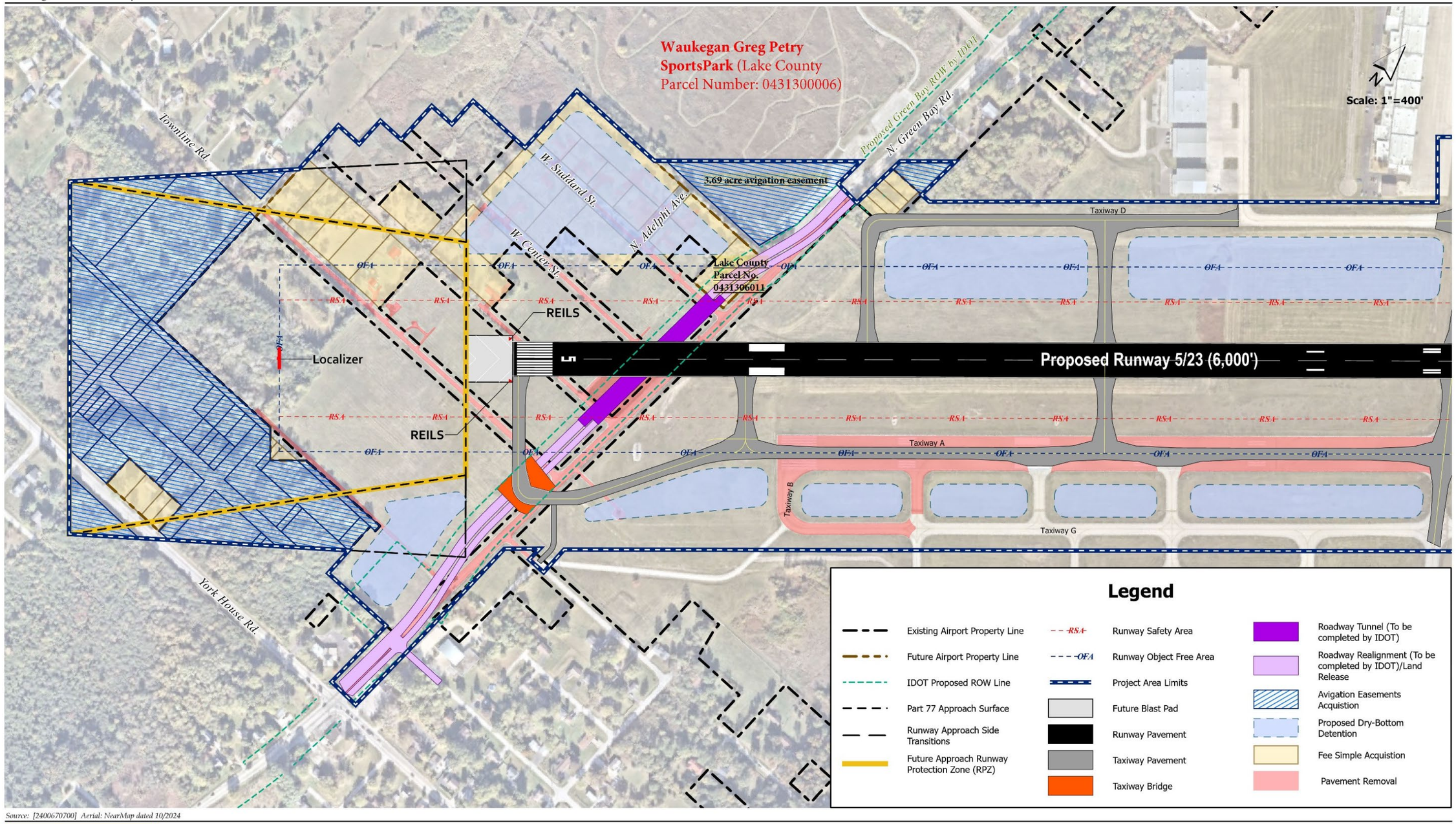
✓	The Waukegan Park District concurs that the proposed acquisition of 3.69 acres of avigation easements for the proposed Waukegan National Airport's Replacement Runway Safety Project will not adversely affect the activities, features or attributes of Section 4(f) property and therefore are considered "*de minimis.*" In addition, the Waukegan Park District confirms that Lake County Parcel Number 0431306011 is not subject to Section 4(f).

Jay Lerner, Executive Director

November 5, 2025
Date

Exhibit 1

Waukegan National Airport



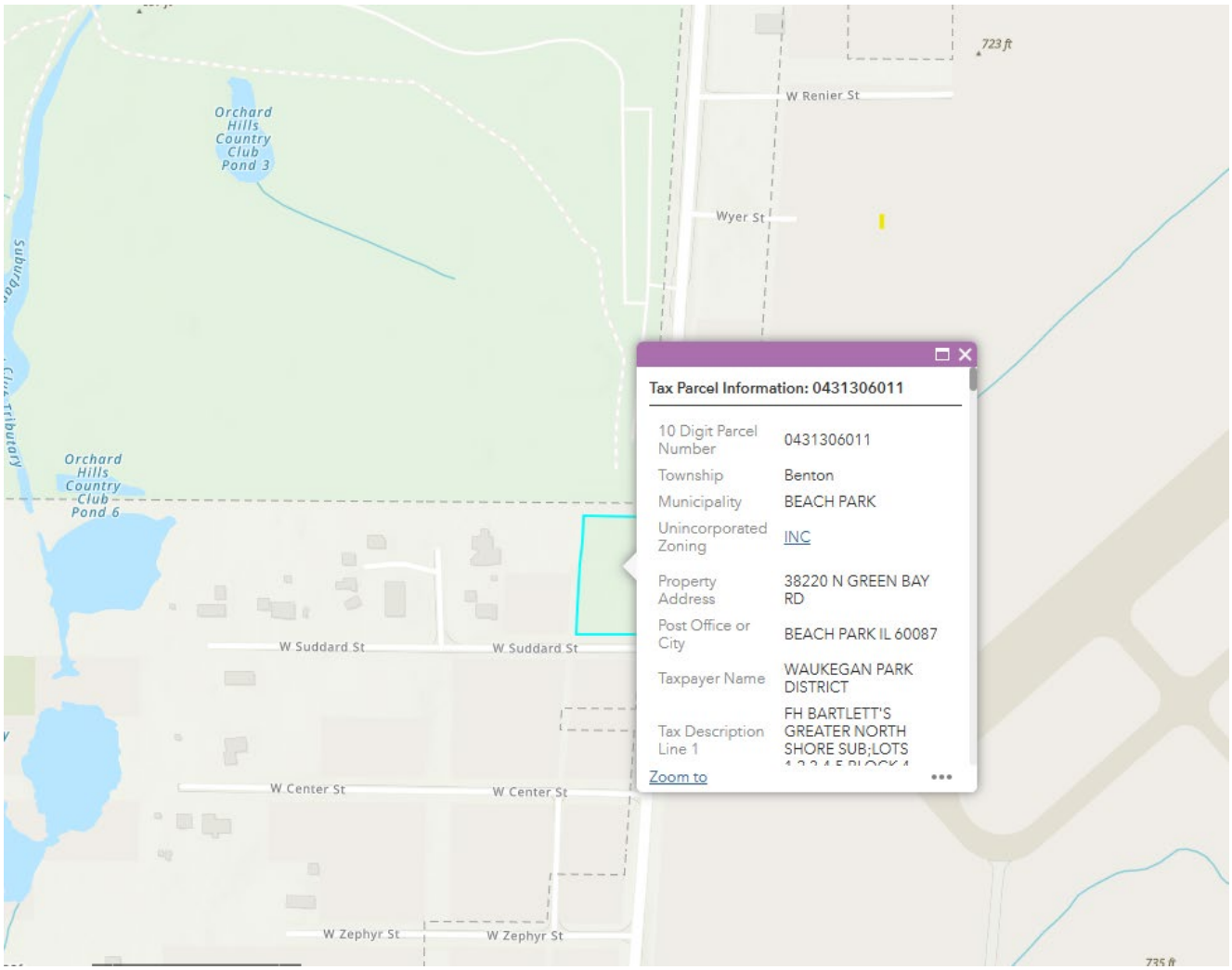
Source: [2400670700] Aerial: NearMap dated 10/2024

WAUKEGAN NATIONAL AIRPORT

Sponsor's Proposed Action-Runway 5 End

Date: 8/2025

Exhibit 2


723 ft
W Renier St
Orchard Hills Country Club Pond 3
Wyer St
Orchard Hills Country Club Pond 6
W Suddard St
W Suddard St
W Center St
W Center St
W Zephyr St
W Zephyr St
735 ft
Tax Parcel Information: 0431306011
10 Digit Parcel Number 0431306011
Township Benton
Municipality BEACH PARK
Unincorporated Zoning INC
Property Address 38220 N GREEN BAY RD
Post Office or City BEACH PARK IL 60087
Taxpayer Name WAUKEGAN PARK DISTRICT
Tax Description Line 1 FH BARTLETT'S GREATER NORTH SHORE SUB;LOTS
Zoom to

Lake County
Forest Preserves

General Offices
1899 West Winchester Road
Libertyville, Illinois 60048
847-367-6640 • Fax: 847-367-6649
www.LCFPD.org

DATE: June 1, 2026

Agenda Item # 11.1

MEMO TO: Paul Frank, Chair
Planning Committee

FROM: Alex Ty Kovach
Executive Director

RECOMMENDATION: Recommend approval of a Resolution finding that use of property at Waukegan Savanna Forest Preserve for airport runway purposes will have de minimis impact on Waukegan Savanna.

STRATEGIC DIRECTIONS SUPPORTED: Leadership, Public Access and Connections

FINANCIAL DATA: There is no financial impact at this time.

BACKGROUND: The Waukegan Port District ("WPD") has been working for nearly two decades on the proposed replacement of its Runway 5/23 with a new runway. According to WPD, the existing runway no longer complies with Federal Aviation Administration ("FAA") design guidelines and must be replaced. WPD proposes to construct the new runway parallel to and northwest of the existing runway. WPD has stated that, by relocating the runway, current airport operations can continue, while replacement of the runway in its current location would require the airport to close for approximately three years. The existing runway will be converted into a taxiway for the new runway.

Construction of the new runway in this new location would require WPD to first acquire from the District, within Waukegan Savanna Forest Preserve ("Waukegan Savanna"), a fee simple interest in 0.25 acres (the "Fee Simple Property") and an avigation easement (the "Avigation Easement") across 18.3 acres (the "Avigation Easement Property"; the Fee Simple Property and the Avigation Easement Property are, collectively, the "Conveyance Parcels"). A map depicting a portion of Waukegan Savanna, a portion of the current runway, a portion of the proposed new runway, and the Conveyance Parcels is included in Exhibit A to the attached resolution.

WPD previously planned a new, longer runway (7,000 feet rather than the currently proposed 6,000 feet). However, WPD has told the District that the FAA determined the 6,000-foot length is sufficient. Also, the Avigation Easement would replace an existing avigation easement on District property that was granted in 1962 and already encumbers 76.6 acres of District property (the "1962 Avigation Easement").

Federal regulations limit the ability to use certain public land for airport uses, specifically "publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance" ("Section 4(f) Property"). The FAA will not approve the use of Section 4(f) Property, unless it determines that either (i) "there is no feasible and prudent avoidance alternative" and the proposed use includes "all possible planning" to minimize harm to the Section 4(f) Property or (ii) the use of the Section 4(f) Property will have a de minimis impact. A "de minimis" impact is one that will not adversely affect the features, attributes, or activities that qualify the Section 4(f) Property for protection.

WPD has sent President Vealitzek a letter (i) stating that, in WPD's view, its acquisition and use of the Conveyance Parcels for the new runway will have a de minimis impact, and (ii) asking the District to concur in this determination. A copy of the letter from the WPD to President Vealitzek is attached to this memorandum. WPD has stated to District staff that the FAA will not make its determination on whether an impact on Section 4(f) Property is de minimis unless the officials with jurisdiction over the Section 4(f) Property concur in writing that the proposed use will have de minimis impact.

On May 20, 2026, the WPD Board held a meeting at the Waukegan National Airport Administration Office in Waukegan, which included an informational presentation by an airport consultant from Crawford, Murphy & Tilly, followed by public comment. (See May 21, 2026, Lake County News-Sun article attached to this memorandum.)

After a thorough review of the Conveyance Parcels, including the Avigation Easement's specific limitations on tree heights in the Avigation Easement Property, and in consultation with the District's Corporate Counsel, staff recommends finding that the WPD's acquisition and use of the Conveyance Parcels for the new runway will not adversely affect the features, attributes, or activities on Waukegan Savanna that make it a public property of local significance. The Fee Simple Property is approximately 0.25 acres in size, which is a very small component of the total acreage of Waukegan Savanna (774 acres). The Avigation Easement would affect only 18.3 acres of Waukegan Savanna's total 774 acres, and the scope of the Avigation Easement is narrow. The WPD's use and control of the Avigation Easement Property would primarily be limited to regulating the heights of structures and trees, as described in the WPD's letter to President Vealitzek. In staff's view, WPD's proposed use of the Conveyance Parcels will not materially change the character, ecological function, or recreational value of the larger preserve for the following reasons:

- Of the 18.3 acres in the Avigation Easement Property, 12.9 acres are already subject to height limitations imposed by the 1962 Avigation Easement covering 76.6 acres. The portions of the Avigation Easement Property not subject to height restrictions by the 1962 easement are primarily former road rights-of-way.

- The District has no past, current, or future plans for any active recreational improvements within the Conveyance Parcels.

- The WPD has consistently assured District officials and staff that it will comply with the tree preservation and replacement requirements of the District's License and Easement Ordinance, with respect to any trees removed within the Avigation Easement, including as recently as May 27, 2026 (see attached letter from WPD Chairman Jack Dye to President Vealitzek).

- The District's approval of the attached resolution does not approve the transfer of the Conveyance Parcels to the WPD. It merely supports a de minimis impact finding as contemplated under Federal regulations. The District will be authorized to convey the Conveyance Parcels to the WPD only if the Board approves such conveyance in a separate resolution, approved by a two-thirds vote of the Board of Commissioners.

REVIEW BY OTHERS: Executive Director, Chief Operations Officer, Director of Finance, Manager of Board Operations and Corporate Counsel.

WAUKEGAN
PORT DISTRICT
AIRPORT . MARINA . PORT

December 10, 2025

Ms. Jessica Vealitzek, President
Lake County Forest Preserve District Board of Commissioners
1899 West Winchester Road
Libertyville, IL 60048-5367
Re: Waukegan National Airport (UGN)

Replacement Runway 5/23 Program
Section 4(f) Official with Jurisdiction (OWJ) Concurrence

Dear Ms. Vealitzek:

The Waukegan National Airport (UGN or Airport) is located in Waukegan, Lake County, Illinois. Property owned by the Lake County Forest Preserve District (LCFPD) is located adjacent to UGN beyond the southwest end of the Airport's existing Runway 5/23. As Federal Aviation Administration (FAA) safety and design standards changes have evolved over time, UGN's existing Runway 5/23 is no longer fully compliant with FAA design guidelines. In order to provide a runway that is fully compliant with FAA criteria, the Waukegan Port District (WPD), which owns UGN, proposes a new runway that enhances safety, brings the airport into compliance, and protects both airport users and the surrounding community.

Replacement Runway 5/23 is proposed parallel to and northwest of existing Runway 5/23. The proposed replacement runway will extend further southwest toward LCFPD lands than existing Runway 5/23, as shown on the attached Sponsor's Proposed Action figure. To comply with FAA requirements, WPD will need to acquire additional lands from LCFPD to establish the Runway Object Free Area and avigation easement for Replacement Runway 5/23.

Due to the use of federal funds, the proposed transportation project is subject to the requirements of 49 U.S.C., Section 303c, formerly Section 4(f) of the Department of Transportation (DOT) Act of 1966 (Section 4(f)), which affords protection to publicly-owned parks, recreation areas, and wildlife and waterfowl refuges. The purpose of this correspondence is to document that the LCFPD Official with Jurisdiction concurs with the listed measures to minimize harm and the assessment of impacts related to WPD's acquisition of additional lands from LCFPD.

As you know, in 2023 the President of the LCFPD Board of Commissioners signed a Memorandum of Agreement (MOA) among FAA, WPD, and LCFPD pertaining to the proposed

(847) 244-3133 • Fax (847) 244-1348
55 S Harbor Place
Waukegan, IL 60085
waukeganport.com

changes to the airport. The MOA addressed the impacts of the changes under Section 4(f). The MOA was based on 7,000 feet of proposed runway length.

WPD and UGN have always followed the required FAA procedure for determining runway length. Where previously this procedure resulted in 7,000 feet of proposed runway length, FAA's procedure has continued to evolve over time. The new FAA runway length determination procedure, revised in 2024, now yields a 6,000-foot-long proposed runway, resulting in reduced impacts to LCFPD lands compared to what was proposed at the time of the 2023 MOA. WPD now proposes acquiring 18.3 acres of avigation easements and 0.25 acre in fee simple acquisition from LCFPD lands, as shown on the attached LCFPD Acquisition Detail figure.

The land to be acquired from LCFPD is part of the Waukegan Savanna Forest Preserve. The portion of the Preserve to be acquired in fee simple is forested. The portions on which avigation easements are to be established include forested, wetland, and agricultural land uses. A stream also flows through this portion of the Preserve. No portion of the property that would be acquired currently includes any existing or planned recreational improvements such as hiking trails, the Waukegan Savanna Dog Sled Area, or the Waukegan Savanna Dog Park.

After purchase, the land acquired in fee simple would be cleared and graded, and obstructions and hazards to air navigation, as defined by FAA, would be removed. This land will be brought inside the fenced area of the Airport.

The land covered by avigation easements will be evaluated and only trees that are determined to be obstructions to navigation would be removed. The avigation easement area would be subject to use limitations prohibiting construction of structures, permitting of public assembly or gathering spaces, and planting of new trees, as well as prohibiting certain additional items that could interfere with the safe passage of aircraft over the easement area.

The following measures to minimize harm will be incorporated into the plans as plan notes and as environmental commitments in the environmental document:

- Within the avigation easement, only trees identified as obstructions to navigation will be removed. Identification of such trees will be accomplished by a method to be agreed upon between UGN, LCFPD, and FAA.

- The conveyance amount will be determined by the procedures documented in the 2023 MOA:

WPD would pay to LCFPD for the Conveyance an amount equal to the fair market value of the Subject Property. The fair market value would be based upon one or more MAI appraisals of the highest and best use of the Subject Property. LCFPD and WPD may agree that, in lieu of WPD paying some or all of the fair market value of the Subject Property, the LCFPD would accept other property in lieu of compensation, such as fee simple ownership in other real property that is (i) suitable for LCFPD purposes and (ii) of comparable value, as determined by the LCFPD in its sole discretion. With respect to elements of the Conveyance, other than consideration, the Conveyance would be made in accordance with Federal Public Law 91- 646, the Uniform

Relocation Assistance and Real Property Acquisition Policies Act of 1970, (Uniform Act), and FAA Order 5100.38D Airport Improvement Handbook (Federal Conveyance Requirements).

LCFPD represented to WPD that, when LCFPD acquires real property, it values the real property at its highest and best use, without regard to its future status as restricted open space, restricted conservation land, or other similar use. The parties acknowledge that an MAI Appraisal prepared in accordance with the Federal Conveyance Requirements may consider the highest and best use of the Subject Property to be restricted open space, restricted conservation land, or other similar use and, as a result, the fair market value of the Subject Property, as stated in the MAI Appraisal, may be less than the fair market value of the Subject Property, as viewed by LCFPD (such difference referred to herein as the "FMV Gap").

WPD would cause the MAI Appraisal, in compliance with the Uniform Act, to be completed and would deliver the completed MAI Appraisal to LCFPD. LCFPD would have its own appraisal prepared by an appraiser, selected at the LCFPD's sole discretion, to determine the fair market value for the Subject Property. WPD and LCFPD would then negotiate in good faith for:

a. a sales price for the Subject Property that is consistent with Federal Conveyance Requirements as prescribed by the Uniform Act, and

b. if there is a FMV Gap (resulting from the negotiated sales price being less than the fair market value determined in the LCFPD's appraisal), additional consideration may be paid or provided by WPD to compensate LCFPD for the FMV Gap.

If WPD does not commence construction of the Project within 5 years after the effective date of the MOA, or the Subject Property acquired by WPD ever ceases to be used as part of the Airport, then, at the LCFPD's election and subject to FAA approval, any fee simple property rights conveyed to WPD by LCFPD would revert back to LCFPD, so long as no Federal funds or WPD funds deemed to be airport revenue, per FAA's Airport Revenue Policy and Grant Assurance #25, have been expended for acquisition of the Subject Property. In the event of such a termination, LCFPD would not be required to refund or return any consideration to WPD so long as no Federal funds or WPD funds deemed to be airport revenue, per FAA's Airport Revenue Policy and Grant Assurance #25, have been expended for the acquisition of the LCFPD property.

In accordance with 23 CFR 774, the proposed project will have a de minimis impact upon the Lake County Forest Preserves, based upon the following assessment:

- All possible planning to minimize harm has been incorporated into project development

- The nature and magnitude of changes will not adversely affect the recreational activities, features, or attributes that qualified the property for Section 4(f) protection

- Proposed measures to minimize harm and resulting mitigation, in regard to protecting the Section 4(f) property and maintaining access and safety, are considered to be reasonable and acceptable

Based on the scope of the proposed project and type of work, there will be no adverse effects to the protected recreational activities, features, or attributes associated with LCFPD.

If you concur with the measures to minimize harm and the assessment of impacts in regard to the proposed project, please indicate as such by responding to this letter with your concurrence no later than January 9, 2026. Thank you for your time and cooperation on this matter. If you have questions and/or concerns, please feel free to contact me at jdye@waukeganport.com or via phone: cell number 312-285-8125

Sincerely,

Jack Dye
Chairman of the Board
Waukegan Port District

LAKE COUNTY
NEWS-SUN
FRIDAY, MAY 22, 2026 | CHICAGOTRIBUNE.COM/SUBURBS | $2.00

Searches continue for the nation's MIAs



Charles Selle

On Memorial Day, we honor those who have made the ultimate sacrifice for the nation. Those include warfighters who are still declared missing in action.

Many of us will pass May 25 along Lake Michigan beaches or on the waters of the Chain O'Lakes, giving little thought to those who died in wars defending democracy from enemies who would do our nation harm. Others will visit area cemeteries, planting mini-American flags on veterans' gravesites as a mark of respect, attend parades or community observances.

Grieving families of missing U.S. soldiers, sailors and Marines who died in battle or as prisoners of war wonder what became of their loved ones who never came home from conflict. So do veterans organizations and the Defense POW/MIA Accounting Agency, tasked since 2015 with searching for the missing. They continue the military's promise that those left behind will not be forgotten.

Glenview lawyer William Coulson is also curious about those who were lost during World War II in actions on Pacific islands. Coulson's father, Robert Coulson, was Waukegan mayor from 1949 to 1957.

The elder Coulson was a state representative and senator until 1973. He served in the Office of Strategic Services, forerunner to the CIA, during World War II.

Over the Memorial Day weekend, William Coulson, who is also a member of the Regional Transportation Authority board of directors, will be on a ship sailing the central Pacific. He is visiting WWII sites in Tuvalu, Tarawa and Makin islands, the Gilbert Islands,

See MEMORIAL on Page A2



American and POW/MIA flags are displayed in a file photo. AMY LAVALLEY/POST-TRIBUNE



The Waukegan Port Authority hopes to build a new runway at Waukegan National Airport. WAUKEGAN PORT AUTHORITY

Revised Waukegan runway proposal gets mixed reviews

By Steve Sadin
FOR LAKE COUNTY NEWS-SUN

An initial public presentation on a proposed 6,000-foot runway at Waukegan National Airport was met with more than an hour of both praise and criticism from area residents.

Scaled back from a controversial proposal three years ago to build a 7,000-foot runway requiring the acquisition of 52 acres of Lake County Forest Preserves District land, the current plan will need just a quarter-acre of forest preserve land.

Susan Zingle, an opponent of the project, said the environmental impact of the construction of the new runway goes beyond the size of forest preserve land being sold, which is part of the Waukegan Savanna.

"The impacts affect the entire savanna, not just those narrow pieces," Zingle said. "This is an issue of maintaining the integrity of the Waukegan Savanna for all who enjoy it — people, birds, critters — and maintaining trust with the citizens."

Brian Palka, one of the people speaking in favor of the project, said the airport is an important part of the community and the new runway will help the economic growth of not only Waukegan, but Lake County overall.

"It's an economic engine," Palka said. "It will bring jobs to the area, good jobs."

Zingle and Palka were among 21 members of the public who gave their views of the new runway during a presentation detailing the project on Wednesday at a meeting of the Waukegan Port District at the Waukegan National Airport, giving the public its first close look at the proposal.

Craig Louden, the project engineer with engineering firm CMT, said the current runway no longer meets Federal Aviation Administration (FAA) guidelines and has outlived its useful life. Replacing it would take three construction seasons, requiring a three-year closure.

Building a new runway roughly parallel to the current one allows the airport to remain open, he said. Louden said that because of its new location, a tunnel under it will be built on Green Bay Road to avoid the creation of potential traffic congestion.

With a preliminary draft environmental assessment prepared, Louden said the Port District seeks a de minimis request from the FAA since it wants only a quar-

See AIRPORT on Page A3

Lawmakers consider board for drug prices

Prescriptions could be capped statewide

By Jeremy Gorner
CHICAGO TRIBUNE

SPRINGFIELD — With 11 days remaining in their spring legislative session, Illinois lawmakers are considering legislation that would create a state panel empowered to review the costs of prescription drug prices and whether medicine is inaccessible to those who need it the most.

The bill to establish a Prescription Drug Affordability Board is part of a broader push by Democrats to address an affordability crisis that has rocked Illinois and the rest of the country. But opponents argue the panel would do little to actually lower prices while creating new layers of bureaucracy in state government. The bill passed 8-4 along party lines Wednesday in the House Executive Committee and now awaits a vote by the full House.

Supporters see the board as a vehicle to rein in runaway drug costs, a politically charged issue that the federal government has also begun to address through Biden-era provisions taking effect this year.

Democratic state Rep. Nabeela Syed of Palatine, a main sponsor of the bill, called it "a heavily, heavily negotiated bill" during a committee hearing Wednesday. The bill was filed last week after an earlier version didn't move forward on the House floor last month.

If created, the five-member board — appointed by the governor — would have authority to evaluate the cost of most prescription drugs, determine whether prices are unreasonably high and set upper payment limits, essentially capping what consumers pay. Pharmaceutical companies would

See PRICES on Page A3

State voids plan to close North Chicago charter schools



Parents and children arrive at an open house at LEARN 6 Charger School in North Chicago. Currently, there are questions about the school's future. CHRIS SWEDA/CHICAGO TRIBUNE

'Now we have some certainty on what we need to do'

By Steve Sadin
FOR LAKE COUNTY NEWS-SUN

A months-long impasse between North Chicago School District 187 and the LEARN Charter School Network of Chicago, which operates two schools in North Chicago, may be nearing an end as long as LEARN meets conditions imposed by the Illinois State Board of Education (ISBE).

After voting to renew LEARN's charter for both schools for five years, in March of 2025, the District 187 Independent Authority, which operates as a board of education, reversed its position and informed LEARN it must close the two schools by June 30, 2027. LEARN appealed to the ISBE.

The ISBE voted to set aside District 187's decision not to renew the charters on May 13 in Springfield, establishing a path for the two schools — LEARN 6 and LEARN 10 — to come under state authorization by meeting specific conditions.

Greg White, LEARN's president and CEO, said last week he was pleased with the vote approving the recommendations of the ISBE hearing officer, and he is starting to work toward satisfying those requirements.

"Now we have some certainty on what we need to do," White said. "We can now focus on helping the academic achievement of our students and giving them the social and emotional support they need."

District 187 Superintendent John Price, who is leaving his post June 30 to become the superintendent of Indian Prairie School District 204 in Aurora, said in September he was willing to negotiate a renewal with LEARN and remains ready to talk. He said the ISBE decision worries him.

"I am concerned about the precedent this sets for the state," Price said. "If charter schools are able to walk away from local authority, this tips the scales too far in favor of the charter schools."

Both LEARN 6, which opened in 2012, and LEARN 10, which started four years later, educate kindergartners through eighth graders. LEARN 6 is located in a leased

See SCHOOLS on Page A2

©2026. All rights reserved.
Vol. 135 No. 95

BEARS STADIUM

Pritzker told NFL Chicago was no-go

By Olivia Olander and Dan Petrella
CHICAGO TRIBUNE



Fans wait in line to enter the Chicago Bears Draft Party at Soldier Field on April 23 in Chicago. JOHN J. KIM/CHICAGO TRIBUNE

With days left until a deadline to pass legislation this spring, Gov. JB Pritzker acknowledged he had recently spoken with NFL Commissioner Roger Goodell and maintained that the Bears and NFL are only considering a new stadium in Arlington Heights or Indiana — not Chicago.

"It was good. It was short. I wanted to let him know and keep him up to date on what was happening," Pritzker said of his conversation with the commissioner. "I will say that it's clear from the statements by the Bears and statements by the NFL that there really are only two places that the Bears are considering having their stadium going forward, and that's either in the state of Indiana or in Arlington Heights."

The comments came amid a public back-and-forth between Pritzker and Chicago Mayor Brandon Johnson as the first-term mayor has made a last-minute effort to keep the team in the city.

Johnson on Tuesday attributed the "disconnect" with the governor on the stadium issue to the two coming from "different upbringings," pointing to the governor's billionaire status.

"I'm not a billionaire. I'm not the heir of billions of dollars. I'm a working-class brother that was teaching middle school a handful of years ago," Johnson said Tuesday on The Matt McGill Show on WVON-AM 1690. "My motivation to make sure that a corporation keeps jobs in Chicago is so that families don't have to struggle like my family did. And so, yes, that's going to come across as a little more provocative, because what's at stake for him is — it's not the same as what's at stake for me."

Pritzker shot back Wednesday that the disagreement was "about our values" and that he had "focused on the working class, the middle class and people most vulnerable throughout my career."

"To we want to spend $2.5 billion of taxpayer dollars on the Chicago Bears, or do we want to spend a lot less than that in order to keep the Chicago Bears in Illinois?" Pritzker asked, comparing a plan Johnson backed in 2024 to build a domed stadium next to Soldier Field that went nowhere and the team's plans to build on the former Arlington Park racetrack site in Arlington Heights.

Illinois lawmakers face a May 31 deadline to advance a stadium tax proposal during the current spring session — one of many pieces of unfinished business they'll address in the coming days, including the state budget for the upcoming year.

Pritzker's conversation with Goodell wasn't his first, records obtained by the Tribune show. The governor's January calendar showed two scheduled conversations with the commissioner, a day before and two days after the Bears' Jan. 10 playoff game against the Green Bay Packers.

On Feb. 20, a day after Pritzker said he was "surprised, dismayed, very disappointed" by the Bears putting out a statement praising Indiana's proposal to lure the team across state lines, the governor responded to a text message from Goodell with a proposed statement on the stadium drama, according to text messages obtained through an open records request.

"The simplest statement would be: 'We continue to work with Illinois leadership and appreciate the progress that is being made,'" Pritzker wrote, wording that Bears President and CEO Kevin Warren matched in a statement of his own nearly word for word.

"Hope fully you have seen the statement that Kevin made. Word for word. Hope this helps," the commissioner wrote.

Pritzker replied: "Helps a lot. We are pencils up and working (with) Bears. Have not yet spoken with legislative leaders but sent them the article. But we are glad to see the statement."

Earlier this week, Pritzker expressed optimism that both chambers would pass a so-called megaprojects bill before the legislative session closes, while also knocking Johnson for having "no plan" to keep the team in Chicago. The Johnson administration has disputed that characterization.

The governor on Wednesday said he hadn't spoken with Johnson since the mayor made those remarks, but maintained the two remain friends.

The Bears have for years focused on the former Arlington International Racecourse site in Arlington Heights, which the team purchased in early 2023. More recently, the team has said it is also considering a site in Hammond, Indiana, after Hoosier lawmakers and the governor of Indiana passed legislation earlier this year to build a stadium across the border, though more work remains to be done before that site could become a reality.

Two years ago, the Bears and Johnson laid out elaborate plans for a new publicly owned domed stadium near Soldier Field, where the team currently plays. Those plans fell flat in Springfield, and the prospect of the Bears staying in Chicago quickly dimmed as no new widely supported proposals have emerged publicly since.

In the ongoing Illinois legislative efforts, the Bears are seeking some $855 million in infrastructure funding, as well as certainty over how much the team would have to pay in property taxes for the next 40 years for building on the Arlington Heights site. Lawmakers are trying to balance those concerns as the public has pushed back about giving away benefits to a multibillion-dollar sports franchise.

Pritzker at an earlier event on Tuesday said "much of the infrastructure that's being talked about, that people are calling infrastructure for the Bears, is actually infrastructure for the region around Arlington Heights."

"I know people are trying to say, oh, it's some giveaway to the Bears. Certainly, some of this is an incentive for the Bears, and is relevant only to a stadium, but also much of it is relevant to just having good traffic flow like we need everywhere, building bridges, making sure we have roads that make sense for people, so they can get to the grocery store, get to the doctor's office, get home, at night safely," he said.

The state House passed a so-called megaprojects bill last month that would allow the Bears to make special payments to local governments in lieu of higher property taxes, an effort to keep the team in Illinois rather than losing it to Indiana. But the legislation has sat in the Senate for several weeks amid concerns over whether its property tax relief provisions would be workable.

Lawmakers are expected to continue working on the megaprojects legislation in the coming days.

"I'm hopeful that the people who want to tank the bill are not successful," Pritzker said Wednesday.

Tribune reporter Jeremy Gorner contributed.

PRICES

from Page A1

have the opportunity to justify their prices before a cap is set. The board would also be charged with improving access to medication, particularly in rural and low-income communities.

A central focus of the legislation is tying Illinois drug prices to Medicare's new negotiating power under the 2022 Inflation Reduction Act. Beginning this year, Medicare — which covers people 65 and older and those with disabilities — negotiated lower prices for 10 high-cost drugs. The results for Januvia, a diabetes medication, meant a drop from $527 to $113 for a 30-day supply, while Enbrel, used to treat rheumatoid arthritis, fell from $7,106 to $2,355, according to the Centers for Medicare & Medicaid Services.

Under Syed's bill, those Medicare-negotiated rates would automatically become the upper payment limits for Illinois consumers across all healthcare plans.

Medicaid and certain state employee health insurance programs would, for technical reasons, need to opt in separately.

The board would not be permitted to further cut prices on drugs already negotiated through Medicare but could work to ensure those drugs reach patients who need them.

Anusha Thotakura, executive director of Citizen Action/Illinois, a progressive policy group championing Syed's legislation, cited an April study from her organization showing the difference in costs between the 10 drugs affected by the negotiated Medicare rate and said that the state of Illinois overpays for those drugs by more than $190 million. Opponents have disputed that figure, but Thotakura said it still illustrates a significant problem.

"We're in a very tight budget year here. People are talking about all kinds of cuts to important services," she said after Wednesday's hearing. "We're looking for revenue, but look at where we're overpaying in this regard."

Under the legislation, the board members must show an expertise in the healthcare, pharmacy and clinical medicine spaces, but they can't be "an employee of, a Board member of, or a consultant to a manufacturer or trade association for manufacturers."

The members would serve five-year terms, except that the initial members' terms would be staggered. They would be assisted by a 15-member council, of which five members would be appointed by the governor, six by the House speaker and Senate president, and four by the minority leaders in each chamber.

Board decisions could be appealed and even subject to judicial review. The bill also says the Illinois attorney general's office "may" enforce the measure governing the board, but Syed said any shortcomings in the law can be addressed by the Illinois General Assembly, including the Legislative Audit Commission.

About a dozen states have active PDABs, though some states have more comprehensive boards than others. States like Colorado, Minnesota and Maryland, which in 2019 became the first state to enact legislation establishing a PDAB, authorized their boards to set so-called upper payment limits for a drug.

The Pharmaceutical Research and Manufacturers of America, which opposes the Illinois bill, has argued that none of the roughly dozen active prescription drug affordability boards operating in other states have produced measurable savings for patients.

Peter Fotos, PhRMA's deputy vice president for state advocacy, told the Illinois House committee Wednesday that the Medicare drug pricing framework "was never intended to be applied at the state level and its structure does not align with how state Medicaid programs, commercial markets or pharmacy networks operate."

Deputy Republican leader Ryan Spain of Peoria, who also opposes the bill, raised bureaucratic and operational concerns, including the lack of a state agency to oversee the board.

"If this bill passes ... we're going to inherit this mess that you've created with this legislation and have to deal with it because ... if you want to characterize this board as sort of a minor operating body then it needs to be aligned with a parent organization in state government that can help it," Spain said in committee.

Syed testified that she didn't see the need for the board to fall under a specific state agency.

She also said the board would only need $750,000 in operational expenses.

"This board does operate independently. It's free of conflict of interest," she said. "Truthfully, I just don't see the need for it to be housed in a department."

A spokesperson for Democratic Gov. JB Pritzker would not say whether the governor supports creating a prescription drug board, other than to say his office is reviewing the proposal.

Meanwhile, the legislature passed another affordability-themed bill on Wednesday. By Jeremy Gorner CHICAGO TRIBUNE

Chicagoans vote to name bald eagles

By Christiana Freitag
CHICAGO TRIBUNE



Two eaglets are seen in their nest, right, in Chicago's South Deering neighborhood while an eagle stands watch on May 7. CHRIS SWEDA/CHICAGO TRIBUNE

Perched high in the trees above South Deering, two bald eaglets spotted last month represent a major ecological milestone: the first bald eagles born in Chicago in more than 100 years.

Now, it's time to name them.

To celebrate the historic births, the Chicago Park District has launched a "Name the Eaglets" competition, inviting Chicagoans and beyond to vote for their favorite names for the two hatchlings.

After receiving more than 3,000 submissions, a Park District committee narrowed the choices to three finalists: Migizi, Marian and Clawmet.

Migizi means "bald eagle" in Ojibwe (Anishinaabe), one of the Indigenous languages historically spoken in the Chicago region. Marian honors the South Side's Marian R. Byrnes Natural Area and its namesake, a lifelong Chicago environmentalist and civil rights activist. Clawmet is a play on "Calumet," the Southeast Side region where the eaglets' nest is located.

Other runners-up were Billy Soaragin, Phoenix and Hope.

Hyde Park birders Pat and Steve Pearson were the first to photograph the nest on April 28 at Park No. 597 and have already cast their votes in the naming contest.

When they first spotted the nest, the couple could only see one eaglet peeking above the branches and were later thrilled to learn there were actually two chicks.

The Pearsons had monitored the area for more than a year, watching adult eagles carry large sticks into the treetops. Pat Pearson said finally seeing an eaglet in April was an emotional moment.

"I got choked up and tears were running down my face," Pearson recalled. "It was almost a feeling of relief, because we were so anxious (to see if a baby would be born). We didn't really know what to expect."

Pat Pearson said she voted for Marian because the couple frequently birdwatches at the South Side natural area, while Steve voted for Migizi — the name he originally hoped to submit himself.

The birth of Chicago's first bald eagles in a century has drawn excitement across Cook County and the world. The Park District said submissions came from a wide range of participants, from students in local Chicago classrooms to international participants from Argentina, France and Australia.

The Park District said the successful nesting is a promising sign that habitat restoration and conservation efforts are improving conditions for wildlife in the city. The Park District has temporarily closed the woodland path near the nesting site at Park No. 597.

AIRPORT

from Page A1

ter-acre of forest preserve land, The Forest Preserves District must agree to the request.

"It allows a condensed environmental assessment," Louden said. "The local FAA wants Lake County Forest Preserves District concurrence. It's important because it's public land."

Along with the quarter-acre, Louden said the Port District is asking the Forest Preserves District for an 18.3-acre navigation easement, of which 15.5 acres are wooded, and 7.2 acres contain trees. It will require the removal of trees, which will be replaced according to Forest Preserves requirements.

Louden said the easement provides the necessary safe area for planes to land and take off with clear vision.

Doug Ower, the chair of the Sierra Club's local chapter, took issue with the de minimis designation. He said at the meeting that the Forest Preserves District should not concur. Though the sale is only about a quarter-acre, the 18.3-acre easement makes it more serious.

"It is the Forest Preserves' formal statement that the runway project 'will not adversely affect' the preserves' protected features and activities," Ower said. "Yet here we are talking about roughly 18 acres that could involve the removal or topping of 800 trees."

Before the FAA makes a final decision, there will be a public hearing where anyone is able to look at the plans and make comments. Louden said that will likely take place in November. People can also submit written comments to the FAA.

Of the 21 people who spoke at the meeting, 10 voiced support, seven spoke against it and the others were neutral on the issue.

Marcus Jordan said the growth coming with the new runway will help the local economy both now and in the future. It will also create jobs.

"These jobs are opportunities for the next generation," Jordan said. "These are not just jobs, but a pipeline for the growth of the airport and Waukegan."

"This is good for the entire economy of Lake County," added Tim Marabella.

Former Waukegan mayor and state Sen. Bill Morris said the project violates a "decades-old promise of never extending the runway across Green Bay Road." He suggests not going west of Green Bay Road to avoid removing the trees.

"Saving 550 or more mature carbon-dioxide-absorbing trees, grandfathers as the native people called them, improves air quality," Morris said. "Those trees capture 12 to 20 tons or more of carbon dioxide annually."

A joint meeting of the Lake County Forest Preserves District's finance, operations and planning committees will discuss the runway issue at 8:30 a.m. June 1, with the full Board of Commissioners scheduled to vote at 9 a.m. on June 10.



More than 120 people packed into a room on Wednesday at the Waukegan National Airport to give their opinions both for and against a new runway. STEVE SADIN/FOR THE

WAUKEGAN NATIONAL AIRPORT

May 27, 2026

Dear Mr. Ty Kovach, Executive Director, Lake County Forest Preserve District

On behalf of the Waukegan Port District and Waukegan National Airport, I would like to reaffirm the Port District's commitment to fully comply with the applicable tree preservation and replacement requirements of the Lake County Forest Preserve District and all related permitting obligations associated with work occurring on or adjacent to Forest Preserve property.

The Waukegan Port District recognizes the ecological, aesthetic, and community value of the Forest Preserve lands and understands the importance of responsible stewardship of natural resources. We appreciate the cooperative working relationship that has developed between our organizations as we continue discussions regarding airport safety and infrastructure initiatives.

To that end, the Port District is committed to coordinating closely with Forest Preserve staff regarding any tree removal activities that may be necessary and to ensuring such activities are conducted in accordance with applicable ordinances, policies, and best management practices. The District also desires to work collaboratively with the Forest Preserve to identify appropriate opportunities for restoration, mitigation, and replanting efforts in areas affected by tree removal activities.

Our intent is not only to satisfy regulatory requirements, but also to contribute positively to the long-term environmental health and sustainability of the surrounding area. We welcome continued dialogue with your staff to develop mutually agreeable restoration approaches that balance environmental stewardship with the Airport's FAA-mandated safety obligations and operational requirements.

We appreciate the continued cooperation and professionalism of the Forest Preserve District and look forward to working together in a constructive and collaborative manner.

Please do not hesitate to contact me if you have any questions or wish to discuss this matter further.

Please call me of you have any quesitons.

Jack Dye

Chairman, Waukegan Port District

STATE OF ILLINOIS)
) SS
COUNTY OF LAKE)

BOARD OF COMMISSIONERS
LAKE COUNTY FOREST PRESERVE DISTRICT
REGULAR JUNE MEETING
JUNE 10, 2026

MADAM PRESIDENT AND MEMBERS OF THE BOARD OF COMMISSIONERS:

Your **PLANNING COMMITTEE** presents herewith "A Resolution Finding that Use of Property at Waukegan Savanna Forest Preserve for Airport Runway Purposes will have De Minimis Impact," and requests its approval.

PLANNING COMMITTEE:

Date: 6-1-2026 ☒ Roll Call Vote: Ayes: 6 Nays: 1 (WASIK)
☐ Voice Vote Majority Ayes; Nays:____

LAKE COUNTY FOREST PRESERVE DISTRICT
LAKE COUNTY, ILLINOIS

A RESOLUTION FINDING THAT USE OF PROPERTY AT WAUKEGAN SAVANNA FOREST PRESERVE FOR AIRPORT RUNWAY PURPOSES WILL HAVE DE MINIMIS IMPACT

WHEREAS, the Lake County Forest Preserve District (the "District") owns a certain parcel of land known as Waukegan Savanna Forest Preserve ("Waukegan Savanna"); and

WHEREAS, the Waukegan Port District ("WPD") desires to replace its Runway 5/23 with a new 6,000-foot runway (the "Proposed New Runway"); and

WHEREAS, for the Proposed New Runway, WPD has requested that the District convey to WPD (i) a fee simple interest in 0.25 acres of land within Waukegan Savanna (the "Fee Simple Property") and (ii) a permanent avigation easement over 18.3 acres of land within Waukegan Savanna (the "Avigation Easement Property"; the Fee Simple Property and the Avigation Easement Property are, collectively, the "Conveyance Parcels"; a portion of Waukegan Savanna, a portion of the Current Runway, a portion of the Proposed New Runway, the Fee Simple Property, and the Avigation Easement Property are generally depicted on the map attached hereto in Exhibit A); and

WHEREAS, federal regulations limit the ability to use certain public land for airport uses, specifically "publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance" ("Section 4(f) Property") (23 CFR §§774.3 and 774.17); and

WHEREAS, the Federal Aviation Administration ("FAA") will not approve the use of Section 4(f) Property, unless it determines that either (i) "there is no feasible and prudent avoidance alternative" and the proposed use includes "all possible planning" to minimize harm to the Section 4(f) Property, or (ii) the use of the Section 4(f) Property will have a de minimis impact (23 CFR §774.3); and

WHEREAS, a de minimis impact is one that will not adversely affect the features, attributes, or activities that qualify the Section 4(f) Property for protection (23 CFR §774.17); and

WHEREAS, in furtherance of obtaining FAA approval for the Proposed New Runway, the WPD has requested that the District's Board of Commissioners concur in writing that the WPD's proposed use of the Conveyance Parcels will have de minimis impact on Waukegan Savanna; and

WHEREAS, the District has no past, current, or future plans for any active recreational improvements within the Conveyance Parcels;

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the Lake County Forest Preserve District, Lake County, Illinois **THAT**:

Section 1: Recitals. The recitals set forth above are incorporated as a part of this Resolution by this reference.

Section 2: Finding of De Minimis Impact. The Board of Commissioners of the District hereby finds that the WPD's proposed use of the Conveyance Parcels in connection with the Proposed New Runway would not adversely affect the features, attributes, or activities that make Waukegan Savanna publicly owned land of local significance and, as such, qualify Waukegan Savanna for protection as Section 4(f) Property. The President, Board Secretary and Executive Director of the District (and the Executive Director's designees) are hereby authorized to provide, execute, and attest to, on behalf of the District, all documents necessary to evidence such finding, provided that any documents have first been approved by the District's Corporate Counsel. This resolution does not approve the conveyance of the Conveyance Parcels to the WPD.

Section 3: Effective Date. This Resolution shall be in full force and effect from and after its passage and approval in the manner provided by law.

PASSED this 10th day of JUNE, 2026

AYES: 14

NAYS: 3

APPROVED this 10th day of JUNE, 2026

Jessica Vealitzek, President
Lake County Forest Preserve District

ATTEST:

Julie Gragnani, Secretary
Lake County Forest Preserve District

Exhibit No. 6287

Exhibit A

Feet
0 150 300 600

Legend

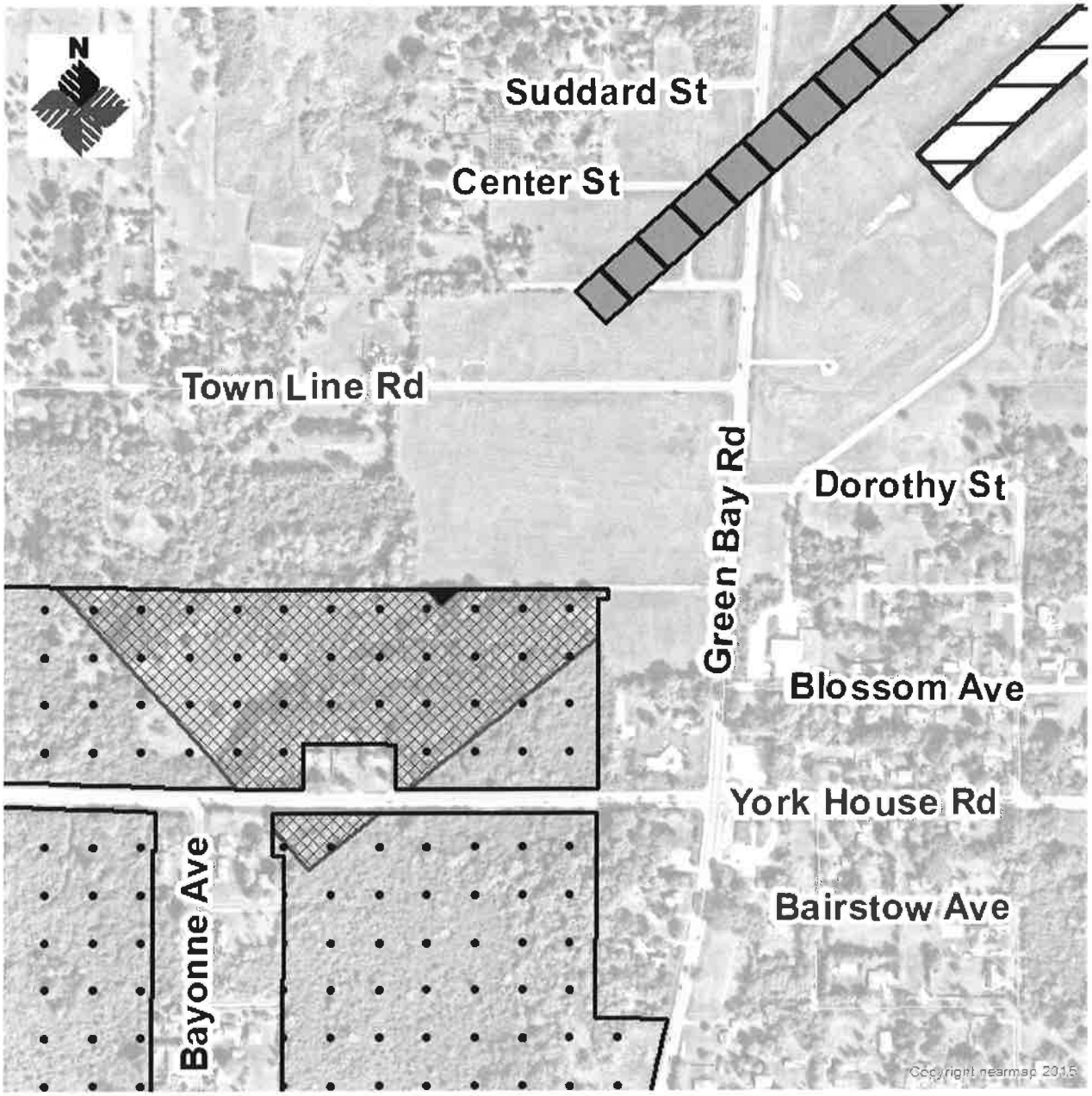
- Waukegan Savanna Forest Preserve
- Fee Simple Property
- Avigation Easement Property
- Current Runway
- Proposed New Runway

Prepared using information from:
Lake County Department of Information & Technology: GIS/Mapping Division
18 North County Street
Waukegan, Illinois 60085-4357
847-377-2273

Lake County Forest Preserve District
Land Preservation and GIS Dept.
1899 W. Winchester Rd
Libertyville, Illinois 60048

2025 Aerial Map Prepared 27 May 2026

Courtesy Copy Only.
Property boundaries indicated are provided for general location purposes. Wetland and flood limits shown are approximate and should not be used to determine setbacks for structure or as a basis for purchasing property.



Conceptual Master Plan

Wadsworth Road
Kilbourne Road
Delany Road
Village of Wadsworth - Wadsworth Park
Elm Lane
N. Green Bay Road
Waukegan Park District - Community Sports Complex (under construction)
Waukegan Regional Airport
Potential Neighborhood Trail Connection
Yorkhouse Road
Townline Road
Oak Creek
Delany Road
Northwestern Avenue
Blanchard Road
N. Green Bay Road
Potential Neighborhood Trail Connection

Conceptual Master Plan

The Conceptual Master Plan includes the following recreation improvements and habitat restoration activities for Waukegan Savanna Forest Preserve:

- A 3-mile long 12'-wide crushed stone **Regional Trail Connection** through Waukegan Savanna Forest Preserve that would link neighborhoods to the preserve, the Des Plaines River Trail, the Robert McClory Bicycle Path and Lyons Woods Forest Preserve. The Regional Trail Connection would be open to bicycling, hiking, cross country skiing and horseback riding.
- Approximately 3.6 miles of 10'-wide **Crushed Stone Trails** for hiking, bicycling and cross-country skiing. (Approximately 1 mile will be in the Dog Exercise Area for dog walking.)
- Approximately 1.2 miles of **Mowed Grass Trails** for hiking and cross country skiing. (Approximately 0.3 miles will be in the Dog Exercise Area for dog walking.)
- A winter-only **Snowmobile Trail Route** that would connect the preserve to the local snowmobile trail route that is supported and managed by the local snowmobile club.
- A 17-acre **Nature Exploration Area** that would provide opportunities that invite visitors, especially children, to explore nature so they can experience a sense of wonder, adventure and curiosity – thereby fostering a long-lasting personal connection with the natural world. Visitors would be able to follow a 0.5-mile natural earth-surface trail or safely wander off-trail in order to explore the oak woods and meadows. The Children's Outdoor Bill of Rights – a component of the Leave No Child Inside initiative developed by Chicago Wilderness – would be used to guide the design components of the Nature Exploration Area.
- A 41-acre off-leash **Dog Exercise Area** to serve the northeast area of Lake County. The Dog Exercise Area would include a crushed-stone trail loop, mowed-grass trails, a small-dog pen, an 80-car parking lot, toilets, and a person-canine drinking fountain.
- Habitat Restoration would focus on preserving and enhancing approximately 501 acres of **Grassland and Oak Savanna Habitat** and 217 areas of **Wetland Habitat**. Oak Creek, which is channelized and eroding, would be restored by re-meandering the stream channel, restoring natural grade of the banks, creating riffles, and planting native vegetation in order to create habitat and prevent erosion.
- An approximately 27-acre area could potentially be reserved for small-scale **Organic Farming**. If implemented, the District would develop a relationship with a non-profit organization to manage a licensing program for commercial organic farming.
- A small shaded **Picnic Area** that would contain picnic tables. The picnic area might include small family-sized non-reserved shelters.
- Designated **Wildlife Observation Areas** from which to observe and learn about wildlife.

Waukegan Savanna Forest Preserve

- Hiking
- Bicycling
- Horseback Riding
- Cross Country Skiing
- Snowmobiling
- Wildlife Observation Area
- Nature Exploration Area
- Picnic Area
- Dog Exercise Area
- Potential Organic Farming
- Restroom
- Parking Lot - Dog Exercise Area
- Parking Lot
- Regional Trail - 12' Wide Crushed Stone
- Regional Trail - Partnership Implementation
- Existing Snowmobile Route
- 10' Wide Crushed Stone Trail
- 6' Wide Mowed Grass Trail
- 3' Wide Natural Earth-Surface Trail
- Boardwalk
- Stream Corridor Restoration
- Grassland and Savanna Restoration Area
- Wetland Restoration Area
- Dog Exercise Area
- Nature Exploration Area
- Potential Organic Farming
- Forest Preserve Boundary
- Forest Preserve
- Railroad
- ComEd

N W E S

Lake County Forest Preserves
www.LCFPD.org
Planning, Conservation & Development Department
32492 North Almond Road
Grayslake, IL 60030
(847) 968-6301

0 225 450 900 1,350 Feet

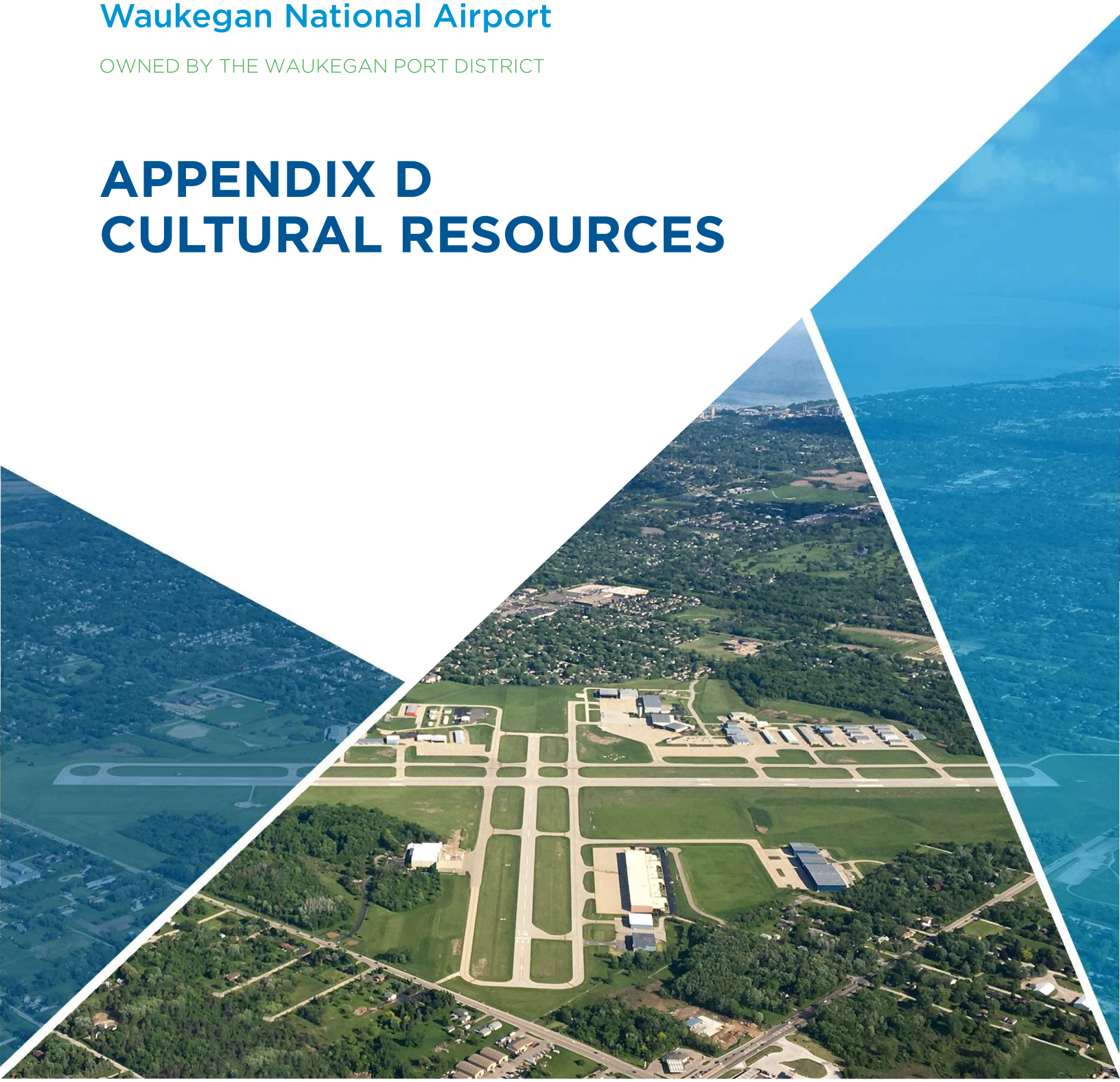
2007 Aerial Photograph

Forest Preserve Board Approved - September 14, 2010

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

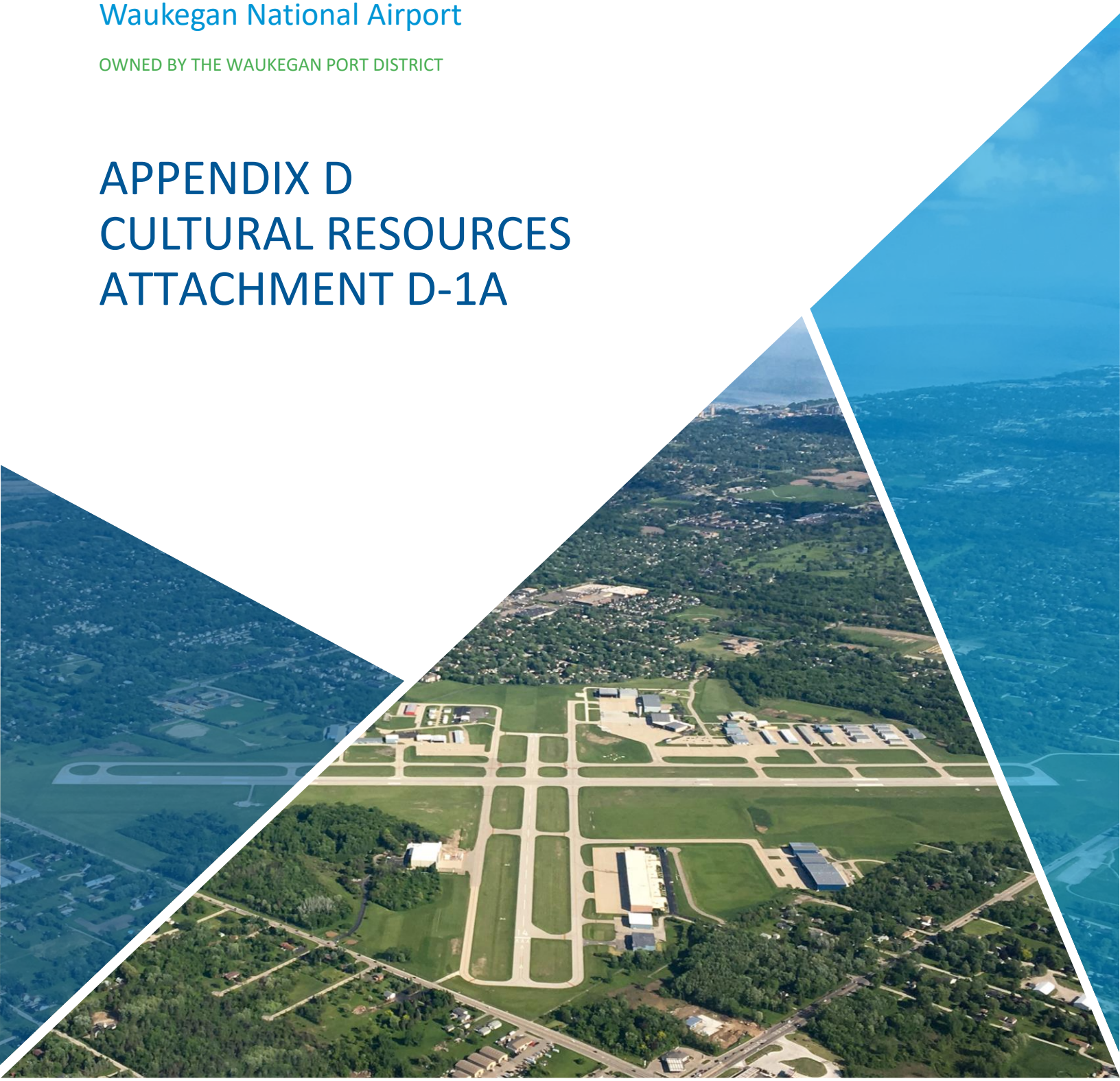
Appendices

Attachment D-1 - UGN Replacement Runway ESR Request to BDE Packet
Attachment D-2 - Initial Section 106 Approval
Attachment D-3 - Historic Structures Review - North End
Attachment D-4 - Historic Structures Review - South End
Attachment D-5A - APE Off-Airport Parcel Book 1
Attachment D-5B - APE Off-Airport Parcel Book 2
Attachment D-5C - APE Off-Airport Parcel Book 3
Attachment D-6 - APE On-Airport Parcel Book
Attachment D-7 - Archaeological Parcels that Will Require Survey
Attachment D-8 - SHPO Archaeological Memo
Attachment D-9 - FAA Consultation Letter with SHPO
Attachment D-10 - SHPO's No Objection Letter
Attachment D-11 - Miami Tribe Project No Objection Letter
Attachment D-12 - FAA Refreshed Consultation with SHPO and SHPO Response

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-1A



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

Illinois Department of Transportation

To:	John Baranzelli, Chief, Design & Environment; Attn: Scott Stitt, Section Chief
From:	Terrence Schaddel, Airport Planning Engineer & Environmental Officer
Subject:	Waukegan National Airport (UGN) - Environmental Survey Request (ESR) Replacement Runway 05-23 and Ancillary Development
Date:	August 6, 2015

The Waukegan Port District, owner and operator of the Waukegan National Airport (UGN) and the Illinois Department of Transportation - Division of Aeronautics are in the process of preparing environmental documentation for the Federal Aviation Administration (FAA) for the following Sponsor's Proposed Action:

Acquire Land – This project includes the acquisition of land in fee simple, avigation easement, and in land use easement (Forest Preserve District of Lake County). The land purchases will allow for a replacement Runway 05-23 and fully protect the runway FAR Part 77 primary, approach and transitional surfaces for a precision Runway 23 approach and a non-precision greater than ¾ mile visibility Runway 05 approach.

Construct Runway Grade Separation – This project involves the construction of a roadway underpass separating the runway from Green Bay Road/Illinois Route 131. The grade separation is intended to be furnished in coordination with the planned Green Bay Road/Illinois Route 131 improvements now under study by IDOT-Highways. The grade separation includes the construction of a pump station (with primary and stand-by power), a fire protection standpipe system and traffic management lighting (per NFPA 502), and lighting.

Relocate Green Bay Road/Illinois Route 131 – This project includes the relocation of Green Bay Road/Illinois Route 131. The roadway plans were developed in consultation with the IDOT-Highways planning consultant.

Construct Replacement Runway 05-23 – This project includes the construction of a new Runway 5-23 offset 400 feet from the existing runway. The plan is based upon a 7,000 foot long, 150 foot wide pavement dimension, with design strength for a Boeing Business Jet at 90% useful load (design critical aircraft).

Convert Existing Runway to Taxiway – This project provides for the conversion of the existing runway to use as a taxiway. An asphalt overlay is applied to meet the design pavement strength, MITL lights are installed, and markings are applied.

Install NAVAIDS on Replacement Runway 05-23 – This project includes the installation of the precision approach equipment on Runway 23; the installation of PAPI on Runway 05-23; and REIL on Runway 05.

Construct Taxiway Bridge – This project includes a taxiway bridge to allow for the construction of a full-length parallel taxiway for the replacement Runway 5-23.

Construct Extended Parallel Taxiway – This project completes the parallel taxiway system for new Runway 05-23, and eliminates back-taxi on the active runway. The taxiway is 50 feet wide (plus tapers) and of a strength to support the design critical aircraft.

Completion of Perimeter Fence – Multi-stage process to enclose the airside operations at the Airport.

Selective Tree Removal for Site Clearing and Obstruction Removal – Obstructions are to be removed within the Runway Protection Zones and Airport FAR Part 77 Imaginary Surfaces.

Wetland and Floodplain Mitigation – Mitigation offsite of approximately sixteen acres of wetlands in accordance with Advisory Circular (AC) 150/5200-33B Hazardous Wildlife

Attractants on or Near Airports. Construction of floodplain compensation onsite through the regrading of airport lands outside of the Runway Safety Area.

Suburban Country Club Tributary Impact – Modify approximately 2,900 feet of Suburban Country Club Tributary creek from the replacement Runway 05-23 runway safety area through a combination of relocation/or channelization of the creek bed and/or placement in a culvert in accordance with Advisory Circular (AC) 150/5300-13 Airport Design, and Advisory Circular (AC) 150/5200-33B Hazardous Wildlife Attractants on or Near Airports.

The subject FAA environmental study includes the need to document the project's impacts, if any, on the following three resource areas: Cultural Resources; Threatened and/or Endangered Species; and Wetlands. By this memo, we are requesting your assistance in reviewing all three environmental resources in the project survey area. Attached herein please find the following support documentation: Environmental Survey Request (ESR); Sponsor's Proposed Action Exhibit and a large scale Google Earth photo.

Section 106 Cultural Resources. The proposed projects will cause ground disturbances, resulting from construction and the mobilization of equipment on property that is owned or planned to be acquired by the Airport. We are requesting that your office initiate an appropriate review to determine if any cultural, archeological, architectural or historic resources/properties may be within the project limits. Please note that during the initial agency coordination process, the Illinois Historic Preservation Agency was contacted. IHPA subsequently returned that attached correspondence regarding their approval of the project. We would request your review and concurrence in that action.

Biotic-Threatened and/or Endangered Species. The proposed projects will cause ground disturbances, resulting from construction and the mobilization of equipment on property that is owned or planned to be acquired by the Airport. We are requesting that your office initiate an appropriate review to determine if any threatened and endangered species and/or habitat may be within the proposed project limits.

Wetlands and Waters of the United States. The proposed projects will cause ground disturbances, resulting from construction and the mobilization of equipment on property that is owned or planned to be acquired by the Airport. We are requesting that your office initiate an appropriate review to determine if any wetlands and/or Waters of the United States may be within the proposed project limits.

If you have any questions, please feel free to contact me at (217) 785-5177 (voice), (217) 785-4533 (facsimile) or via e-mail at **Terrence.Schaddel@illinois.gov**.

Cc: Randy Rogers, Executive Director; Waukegan Port District (electronic copy)
Jim Stanczak; Waukegan National Airport; (electronic copy)
Stephen McLaughlin; Hanson Professional Services, Inc. (Oak Brook) (electronic copy)
Shawn Gibbs; Hanson Professional Services, Inc. (Springfield) (electronic copy)

TLS
Enclosure

ENVIRONMENTAL SURVEY REQUEST

A. PROJECT INFORMATION: ☑ Bio ☑ Cultural ☐ Special Waste

Submittal Date: 08/06/2015 *(mm/dd/yyyy)* **Requesting Agency:** Other Aeronautics

Contract #: **Job No.:** - - **PPS Project No.:**

District: 0 **Counties:** Lake

Route: N/A **Marked:** N/A

Street: N/A **Section:** N/A

Municipality(ies): Waukegan and Beach Park **Project Length:** **Miles**

From To (At): Waukegan National Airport

Quadrangle: Zion & Wadsworth **Township-Range-Section:** T45/46N-R11/12E-Sec1,6,31,36

Survey Target Date: 02/06/2016 *(mm/dd/yyyy)* **Anticipated Design Approval:** 02/06/2016 *(mm/dd/yyyy)*

(Six Months Minimum Required)

B. REASON FOR SUBMITTAL: (Check all that apply)

☑ **Acquisition of additional ROW or easement** 100 **acres**

☑ **In-Stream Work** **Stream Name:** Suburban Country Club Tributary

☐ **Other:**

DETAIL the above in the Additional Information field.

The Additional Information field on this form should be used to expand on the Project Description.

C. PROJECT DESCRIPTION:

Construction Replacement Runway 05-23

Proposed Work: ☐ Highway ☐ Bridge ☐ Bike Trail ☑ Other Airport

---

D. TREE REMOVAL?: Yes **Number?:** or 44 **Acres**

Existing Bridge(s) Structure Number: - , - , -

Historic District Involved? No **Historic Buildings Involved?** No

Section 4(f) Lands Involved? Yes **Section 6(f) Lands Involved?** Don't Know

---

E. FUNDING: ☑ Federal ☑ State ☐ TBP ☐ MFT ☑ Local Non-MFT

☐ **404 Permit Required** **Anticipated Processing:**

F. LOCAL CONTACT PERSON: Terrence Schaddel **Telephone #:** (217) 785 - 5177 **ext.**

Title: Airport Planning Engineer **E-Mail:** Terrence.Schaddel@illinois.gov

---

G. ADDITIONAL INFORMATION: **Memo By:** Terrence Schaddel

Memo, ESR and Maps uploaded to SharePoint. Acreages are approximate.

Page 2 - SPECIAL WASTE SCREEN

(Note: This screening is required only for ESRs requesting Special Waste survey. For all other survey types, proceed to end to submit form.

For questions about this form, please contact the District Special Waste Coordinator.)

Special Waste Submittal Date: *mm/dd/yyyy*

Step 1: Level 1 Screening Criteria

1. Acquisition of additional right-of-way or easements (temporary or permanent)

2. Railroad ROW (other than single rail rural ROW with no maintenance facilities)

3. Excavation or subsurface utility relocation

If all responses are "No", sign below and place in the appropriate report. The District Special Waste Coordinator may sign-off the project. The Level 1

District Sign-off is valid for a maximum of six months. However, any projects answering "Yes" or "Don't Know" to #2 above are not eligible for District

sign-off and must go through the PESA process. If any response is "Yes" or "Don't Know", continue to Step 2: Level 2 Screening Criteria.

Step 2: Level 2 Screening Criteria

☐ **If for any reason, the presence of any environmental condition cannot be determined from the site reconnaissance or from database searches,**
please check this box, add an explanation below, and submit for PESA.

1. Does the project involve any of the following environmental conditions within the corresponding minimum search distance?

Environmental Condition	Minimum Search Distance	Database Search	Site Reconnaissance
Industrial and/or commercial property	0.25 miles		
Other Environmental Conditions* (Please detail below.) *	Property & adjoining property		
State UST	Property & adjoining property		
State LUST	0.5 miles		
State Voluntary Cleanup, Brownfield, or landfills	0.5 miles		
Federal NPL; NPL delisted, CERCLIS; CERCLIS NFRAP	1.0 miles; 0.5 miles; 0.5 miles; 0.5 miles, respectively		
Federal RCRA CORRACTS facilities; RCRA non-CORRACTS TSD facilities	1.0 miles; 0.5 miles, respectively		
Federal RCRA generators list	Property & adjoining property		
Federal RCRA Brownfield sites	0.5 miles		
Federal ERNS System	Property		

** Other Environmental Conditions are identified through site reconnaissance and include situations that may negatively affect the property including the presence of, for example, illegal dumping, unknown containers, waste associated with "crack" or methamphetamine houses (i.e., discarded hazardous material on the outside of a property), battery piles, paint spills, abandoned transformers, surface staining, vegetative damage, etc.*

*** Describe Findings/Other Environmental Conditions:**

2. Were photographs taken of the site and/or surrounding area?

In an effort to identify any property or condition that may negatively affect the project site or potential historical, industrial and/or commercial use, the following sources of information can be helpful while screening the project.

3. Place a check next to each reference that is reviewed. (*Optional*)

☐ **Google - type aerial maps** ☐ **Extranet data** ☐ **Historic Aerial Photos** ☐ **Survey Books** ☐ **Other Files & Photos**

☐ **City Directories** ☐ **County Assessor** ☐ **Sanborn Fire Insurance Maps** ☐ **Plat Books**

☐ **Other source (describe):**

If any historical reference indicates the possible presence of a property or condition that may negatively affect the project site, then a PESA is required.

If all responses for database search and site reconnaissance are "No", then the District Special Waste Coordinator may sign-off the project.

The Level 2 District Sign-off is valid for a maximum six months. If any response for database search and site reconnaissance is "Yes", or if a database search or site reconnaissance is not performed or is inconclusive, then a PESA is required.

Conducted By:

Position:

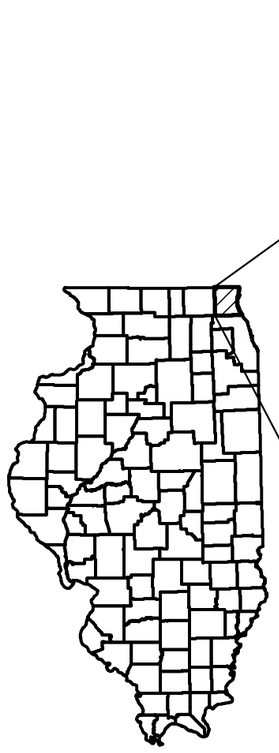
Telephone #: ( ) - **Ext.**

After this Level 2 District Sign-Off has been completed, please email a screen shot of the form to the Central Office, BDE, Environment Section,
Geologic & Waste Assessment Unit for processing.

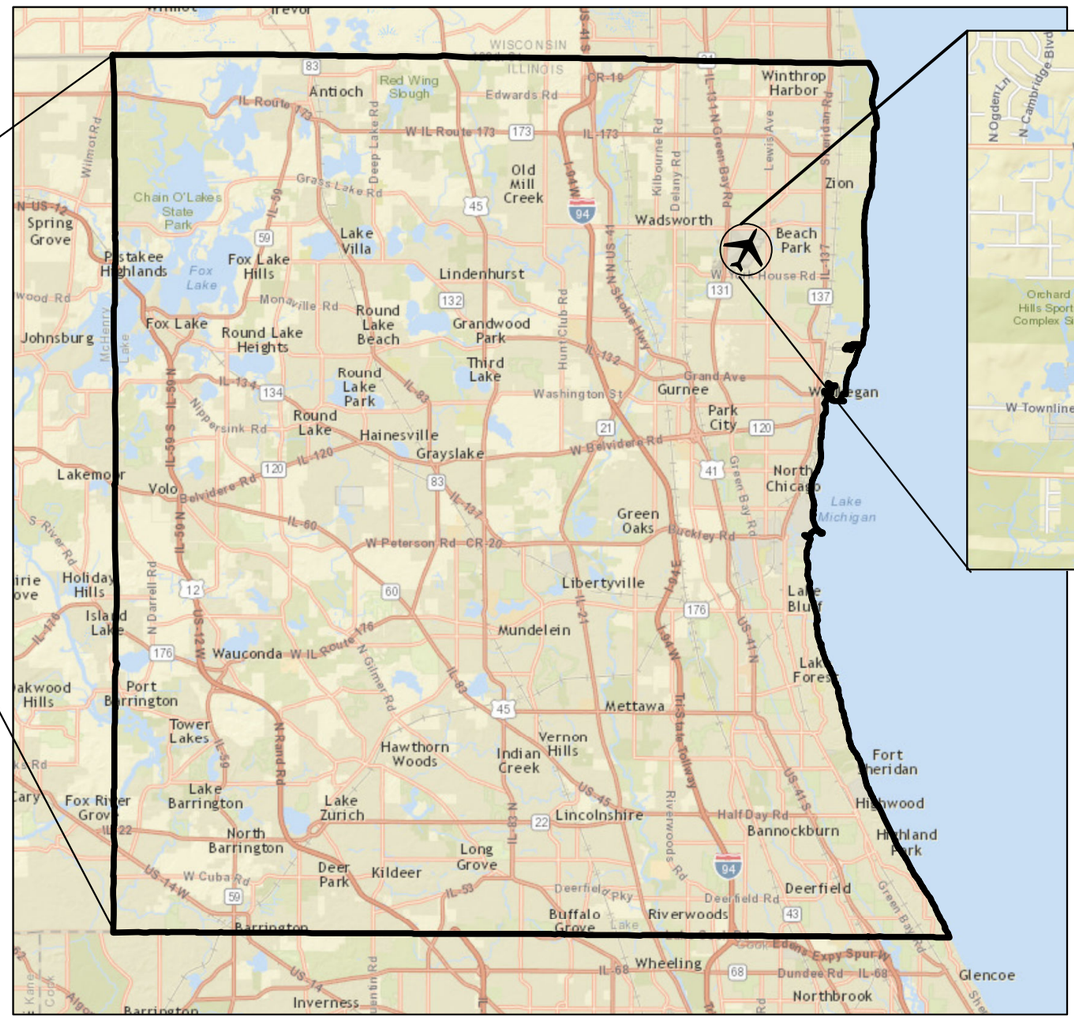
ESR Home Page Clear Form Submit Form

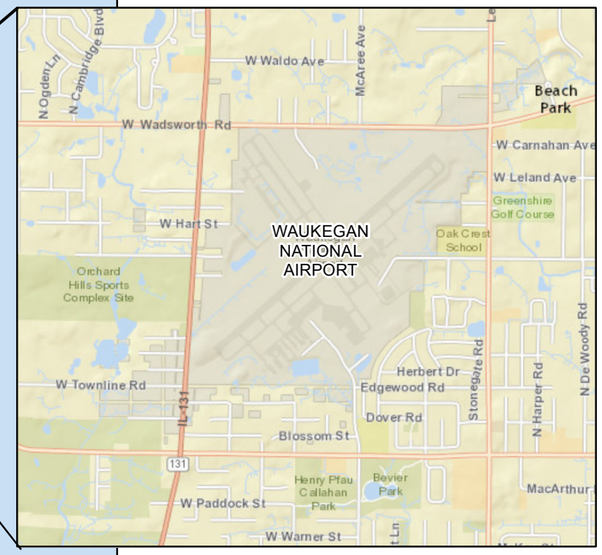
© 2015 Illinois Department of Transportation

LAKE COUNTY, ILLINOIS



STATE OF ILLINOIS





HANSON

Hanson Professional Services Inc.

Offices Nationwide
www.hanson-inc.com

Hanson Professional Services Inc.
Commerce Drive, Suite 200
Oak Brook, IL 60523
phone: 630.990.3800
fax: 630.990.3801

Illinois Licensed
Professional Service Corporation
#184-001084

WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

MASTER PLAN - ENVIRONMENTAL ASSESSMENT

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: 6/9/2015
PROJECT NO: 09A0091
CAD FILE: AIRPORTSITEVICITYMAP.MXD
DESIGN BY: SKG 6/9/15
DRAWN BY: SKG 6/9/15
REVIEWED BY:

© Copyright Hanson Professional Services Inc. 2015

SHEET TITLE

PROJECT AND VICINITY MAP

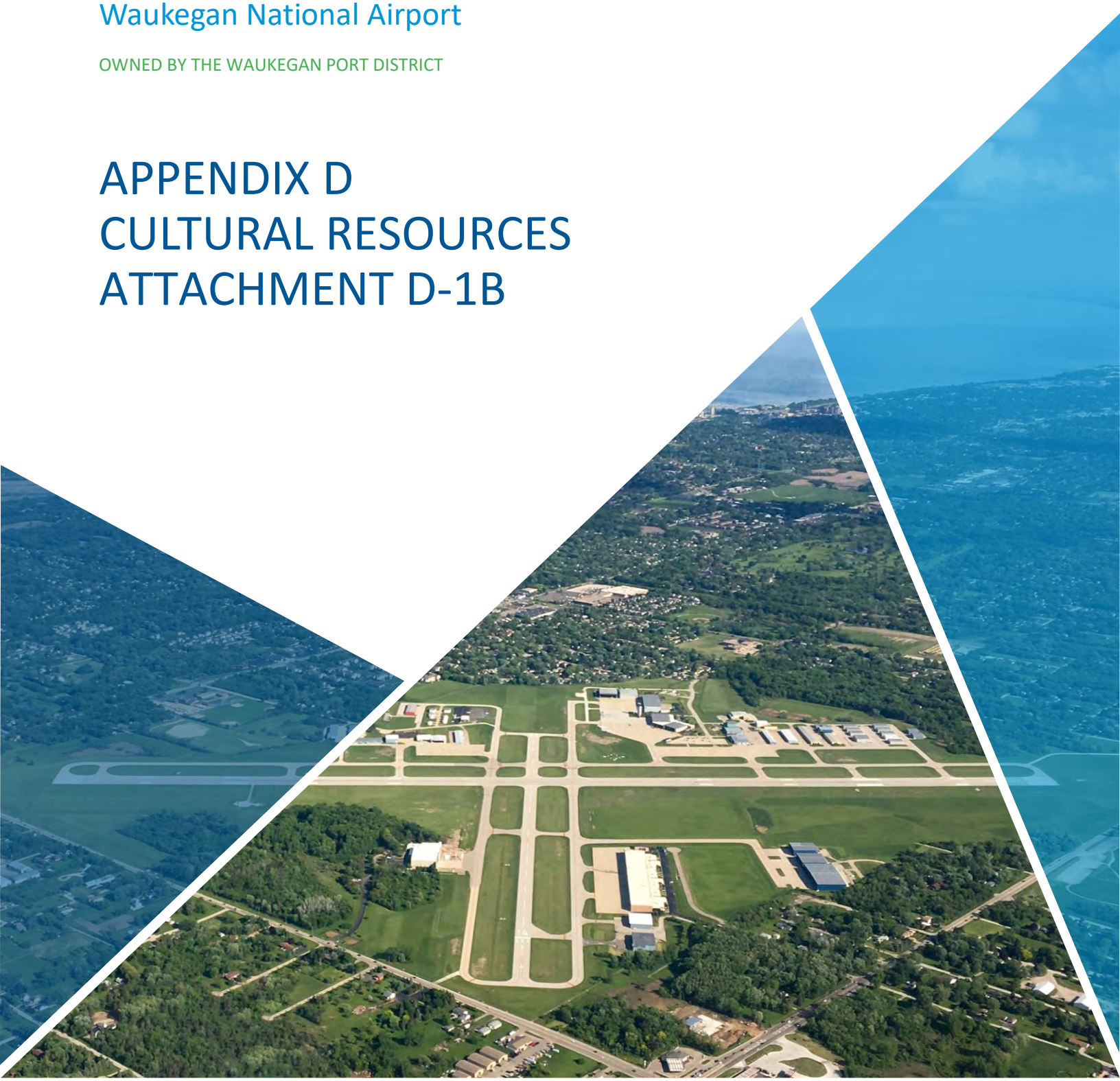
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

TUESDAY, JUNE 09, 2015 3:15:04 PM GIBBS01521
\\HANSON.DOM\DFS\DRIVE\09JOBS\00831\09A0091\DRAWINGS\ENVIRONMENTAL ASSESSMENT\RESOURCE REVIEW EXHIBITS\COUNTYLOCATION.MXD

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-1B



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT



HANSON
Hanson Professional Services Inc.

Offices Nationwide
www.hanson-inc.com

Hanson Professional Services Inc.
Commerce Drive, Suite 200
Oak Brook, IL 60523
phone: 630.990.3800
fax: 630.990.3801

Illinois Licensed
Professional Service Corporation
#184-001084

WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

MASTER PLAN - ENVIRONMENTAL ASSESSMENT

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

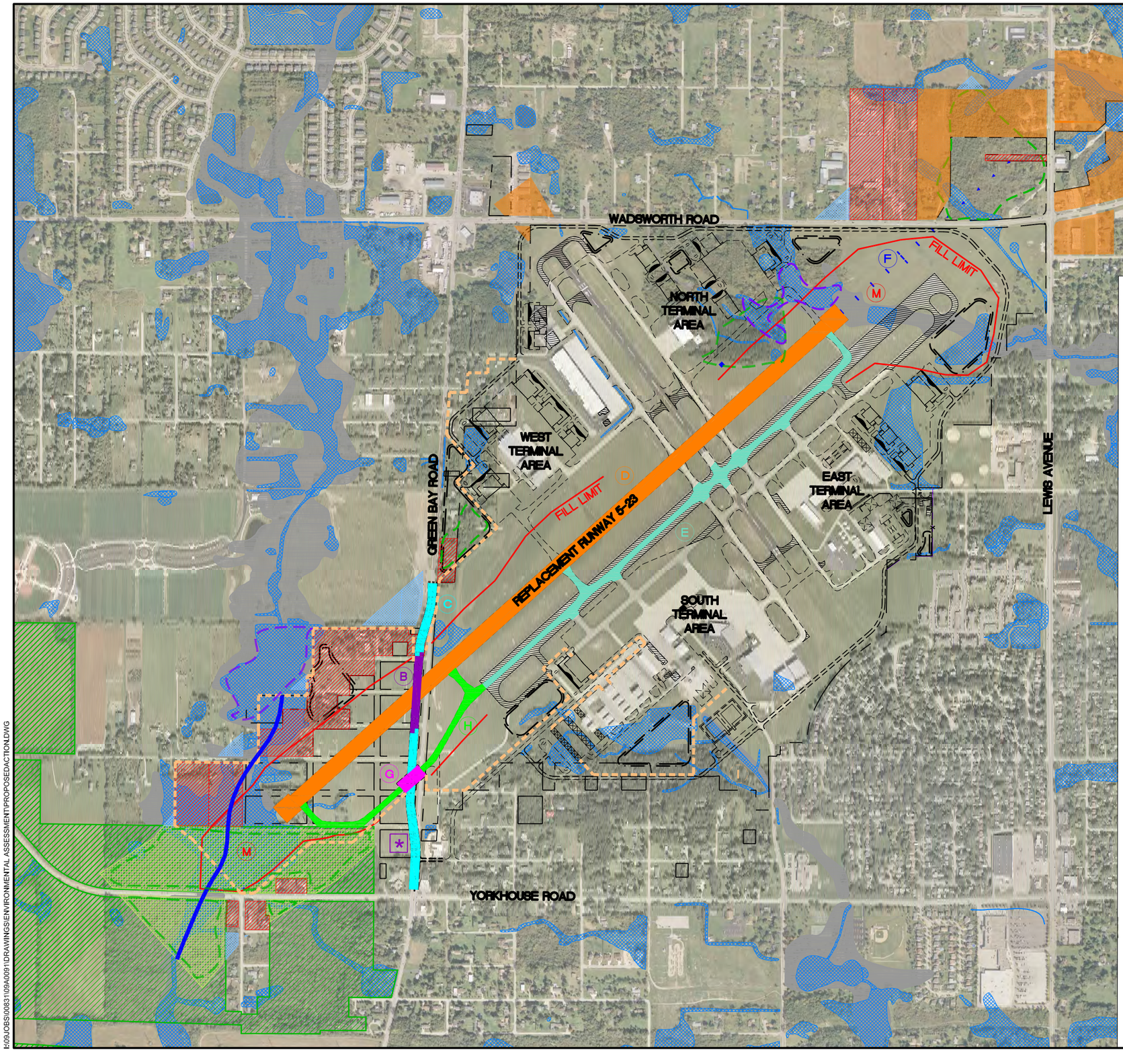
ISSUE: 6/9/2015
PROJECT NO: 09A0091
CAD FILE: AIRPORTSITEVICITYMAP.MXD
DESIGN BY: SKG 6/9/15
DRAWN BY: SKG 6/9/15
REVIEWED BY:

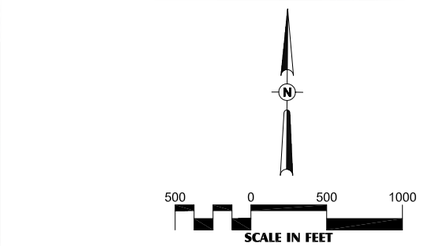
© Copyright Hanson Professional Services Inc. 2015

SHEET TITLE

AIRPORT AERIAL

TUESDAY, JUNE 09, 2015 2:44:40 PM GIBBS01521
I:\09JOBS\00831\09A0091\DRAWINGS\ENVIRONMENTAL ASSESSMENT\RESOURCE REVIEW EXHIBITS\AIRPORTSITEVICINITY.MXD





- A — Land Acquisition - Fee Simple
- A — Land Use Easement - Forest Preserve
- A — Avigation Easement
- A — Existing Easement
- B — Runway 5-23 Tunnel
- C — Green Bay Road Relocation
- D — New 5-23 Runway, 400' Offset
- E — Converted Runway to Taxiway
- F — Relocate Runway 5-23 Navaids
- G — Taxiway Bridge
- H — New Taxiway
- I — Perimeter Fence - Multi-Stage
- J — Selective Tree Removal for Site Clearing and Obstruction Removal
- K — Wetland Mitigation
- L — Stream Relocation/Mitigation
- M — Flood Plain Mitigation
- * — Pump Station (Part of Tunnel and Bridge Projects
- Pavement Removal
- Forest Preserve Land
- Wetlands (WOUS)
- Flood Plain (100 Year)
- Airport Property Line

HANSON
Engineering | Planning | Allied Services

Offices Nationwide
www.hanson-inc.com

Hanson Professional Services Inc.
815 Commerce Drive, Suite 200
Oak Brook, IL 60523
phone: 630.990.3800
fax: 630.990.3801

Illinois Licensed
Professional Service Corporation
#184-001084

WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

MASTER PLAN - ENVIRONMENTAL ASSESSMENT

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/5/15
PROJECT NO: 09A0091
CAD FILE: PROPOSEDACTION.DWG
DESIGN BY: LDH 6/3/15
DRAWN BY: LDH 6/3/15
REVIEWED BY: RMH 6/5/15

© Copyright Hanson Professional Services Inc. 2013

SHEET TITLE

SPONSOR'S PROPOSED ACTION

JUN 11, 2015 3:18 PM HAUSM00682
I:\09JOBS\00831\09A0091\DRAWINGS\ENVIRONMENTAL ASSESSMENT\PROPOSEDACTION.DWG

Illinois Historic
Preservation Agency

1 Old State Capitol Plaza, Springfield, IL 62701-1512

FAX (217) 524-7525
www.illinoishistory.gov

RECEIVED
JUL 06 2015
HANSON PROFESSIONAL SVS INC
OAK BROOK, IL

Lake County
Waukegan
Land Acquisition, Runway Lengthening & Relocation, Taxiway Bridge and Roadway Tunnel Construction, Connector Taxiways and Relocation/Installation of Navigation Aids
3550 N. McAree Rd.
IHPA Log #001061615

July 1, 2015

Stephen McLaughlin
Hanson Professional Services Inc.
815 Commerce Dr., Suite 200
Oak Brook, IL 60523-8750

Dear Mr. McLaughlin:

We have reviewed the documentation submitted for the referenced project in accordance with 36 CFR Part 800.4. Based upon the information provided, no historic properties are affected. We, therefore, have no objection to the undertaking proceeding as planned.

Please retain this letter in your files as evidence of compliance with section 106 of the National Historic Preservation Act of 1966, as amended. This clearance remains in effect for two years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Skeletal Remains Protection Act (20 ILCS 3440).

If you have any further questions, please contact me at 217/785-5031.

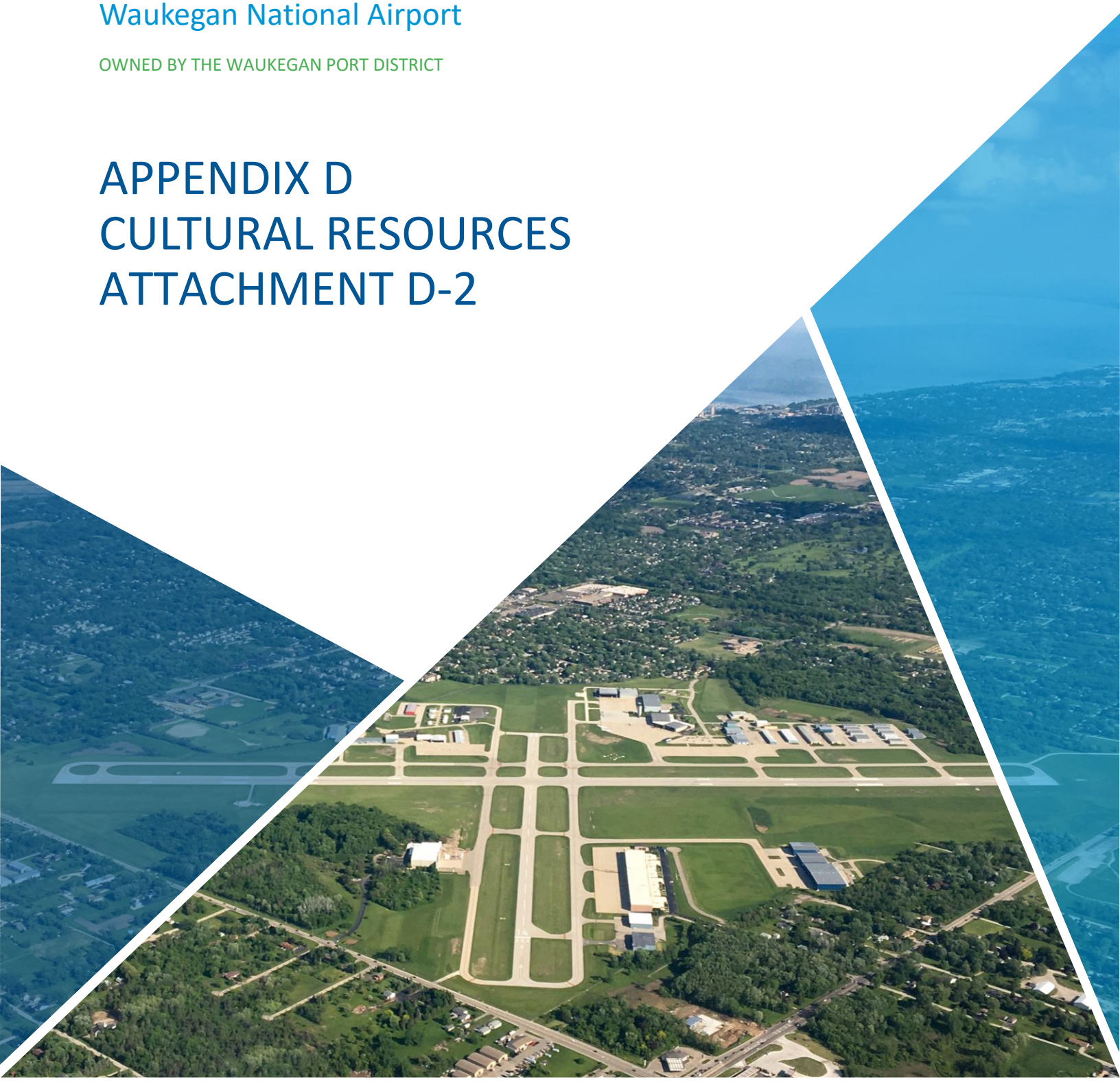
Sincerely,

Rachel Leibowitz, Ph.D.
Deputy State Historic
Preservation Officer

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-2



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

Illinois Department of Transportation

Memorandum

To:	Steven Young	Attn: Terry Schaddel
From:	Maureen Addis	By: Brad Koldehoff
Subject:	Cultural Resource Clearance	
Date:	February 2, 2016	

Lake County
Waukegan National Airport
Seq. 19504

For the above referenced project, IDOT's qualified professional Cultural Resources staff hereby make a **"No Historic Properties Affected"** finding pursuant to Section 106 of the National Historic Preservation Act.

This determination follows the stipulations of the Section 106 Programmatic Agreement for the Delegation of Authority for Minor Projects of the Federal Aid Highway Program in the State of Illinois, executed by FHWA, Illinois SHPO, IDOT and the Advisory Council on Historic Preservation. This project is consistent with the minor project types listed in Appendix B of the agreement.

The attached stamped IDOT Environmental Survey Request form documents that no further coordination for this project is required for cultural resources.

Brad Koldehoff

Attachment

BK:km

Attention: Central Office BD&E
Environment Section
Room 330

Environmental Survey Request

A. Project Information ☑ Bio ☑ Cultural ☐ Wetlands ☐ Special Waste

Submittal Date: 08/06/2015 **Sequence No:** 19504
District: 1 **Requesting Agency:** Other Aeronautics **Project No:**
Contract #: **Job No.:**
Counties: Lake
Route: **Marked:**
Street: **Section:**
Municipality(ies) Waukegan and Beach Park **Project Length:** km miles
FromTo (At): Waukegan National Airport
Quadrangle: Zion & Wadsworth **Township-Range-Section:** T45/46N-R11/R12E-Sec 1,6,31,36
Survey Target Date: 02/06/2016 **Anticipated Design Approval:** 02/06/2016

B. Reason for Submittal: (Check all that apply)

☑ Acquisition of additional ROW or easement 40.4685 ha/ 100 acres
☑ In-Stream Work **Stream Name:** Suburban Country Club Tributary
☐ Other:

C. Project Description: Construction Replacement Runway 05-23

Proposed Work: ☐ Highway ☐ Bridge ☐ Bike Trail ☑ Other Airport

D. **Tree Removal?:** Yes **Number?:** 0 17.806 ha/ 44 acres
Historic District Involved? No **Historic Buildings Involved?**
Section 4(f) Lands Involved? **Section 6(f) Lands Involved?**
Wetland delineation performed by: **End. Species Consultation performed by:**

E. Funding: ☑ Federal ☑ State ☐ TBP ☐ MFT ☑ Local Non-MFT
☐ 404 Permit Required **Anticipated Processing:**

F.

Contact Person:		**Local Contact Person:**	Terrence Schaddel
Telephone #:		**Telephone #:**	(217) 785-5177 ext.
Env.Contact:		**E-Mail:**	Terrence.Schaddel@illinois.gov
Telephone #:		**Title/Company:**	

☐ Field Sign Off (Bio & Cultural Only) ☑ Received in CO 08/07/2015 ☐ SW Received

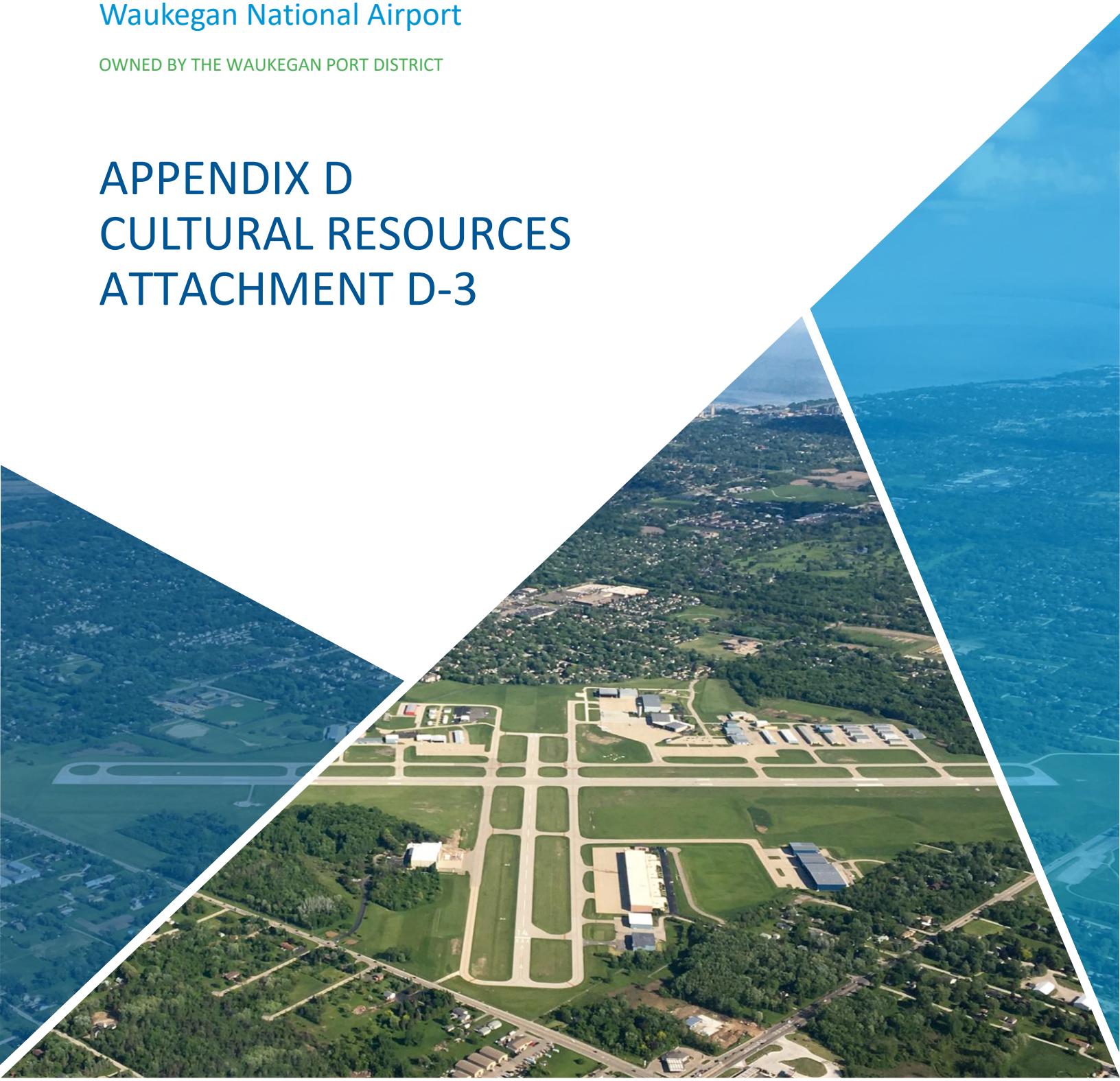
CULTURAL RESOURCES:
NO SURVEY OR FURTHER COORDINATION REQUIRED

Brad Koldehoff 2/2/16
SIGNED DATE

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

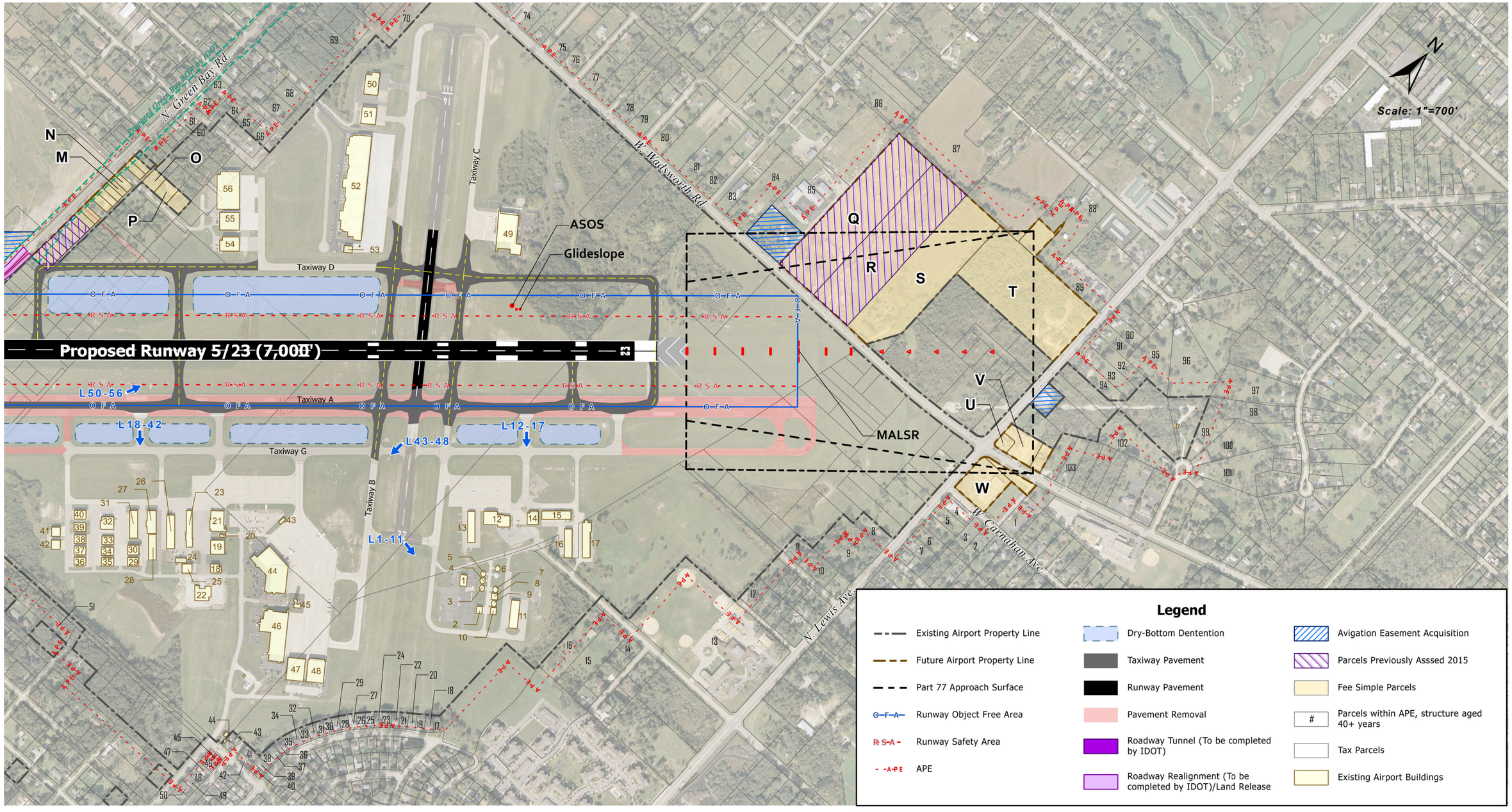
APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-3



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT



Source: [182260200] Aerial: GRW 2011-Hanson Alp

WAUKEGAN NATIONAL AIRPORT

Historic Structures Review- North End

Path: K:\WaukeganAP\18226-02-00_CompleteEA-ALP\GIS\Maps\EA-Exhibits_Pro\EA-Exhibits_Pro.aprx

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

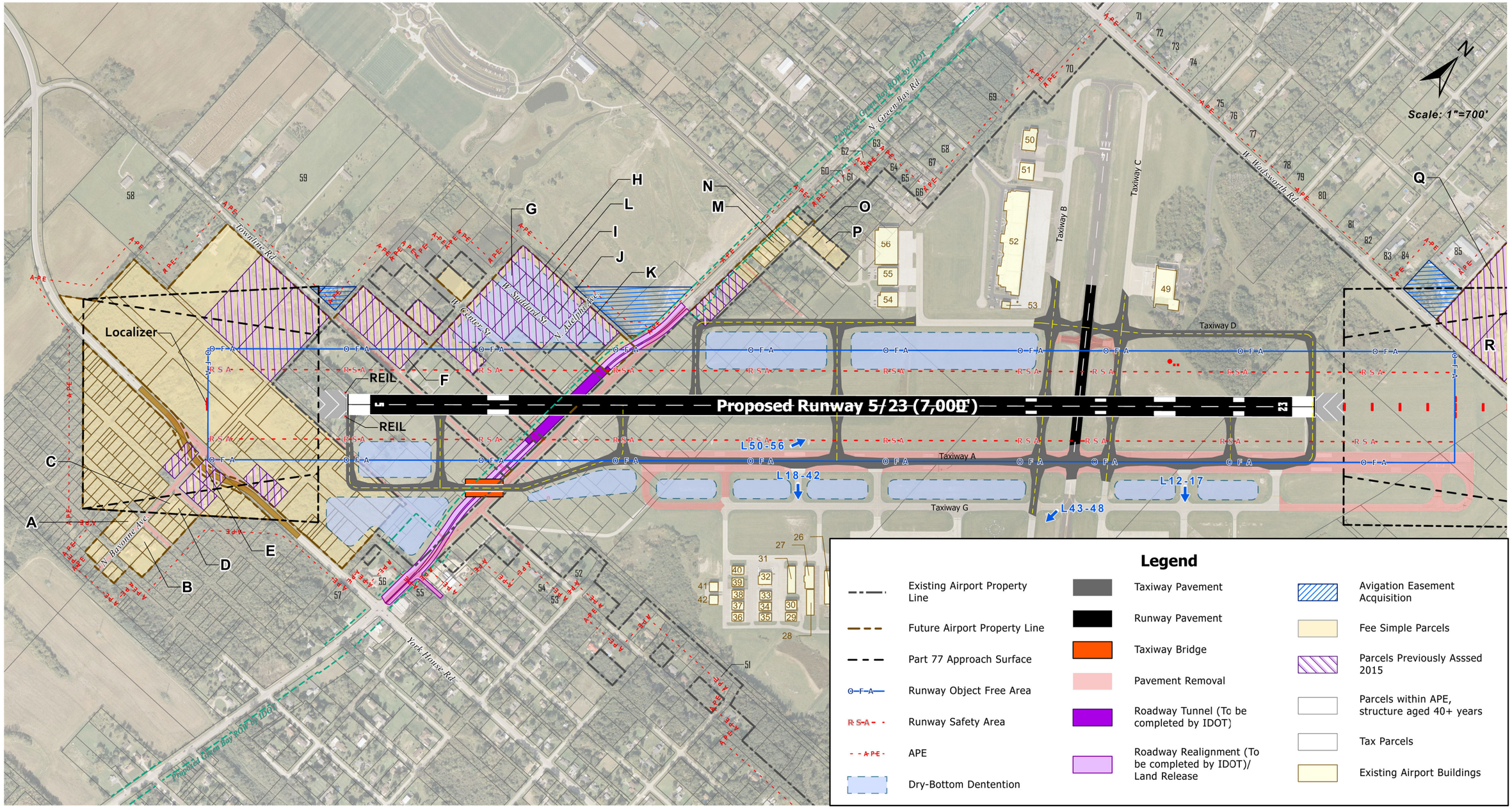
APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-4



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT



Source: [182260200] Aerial: GRW 2011-Hanson Alp

WAUKEGAN NATIONAL AIRPORT

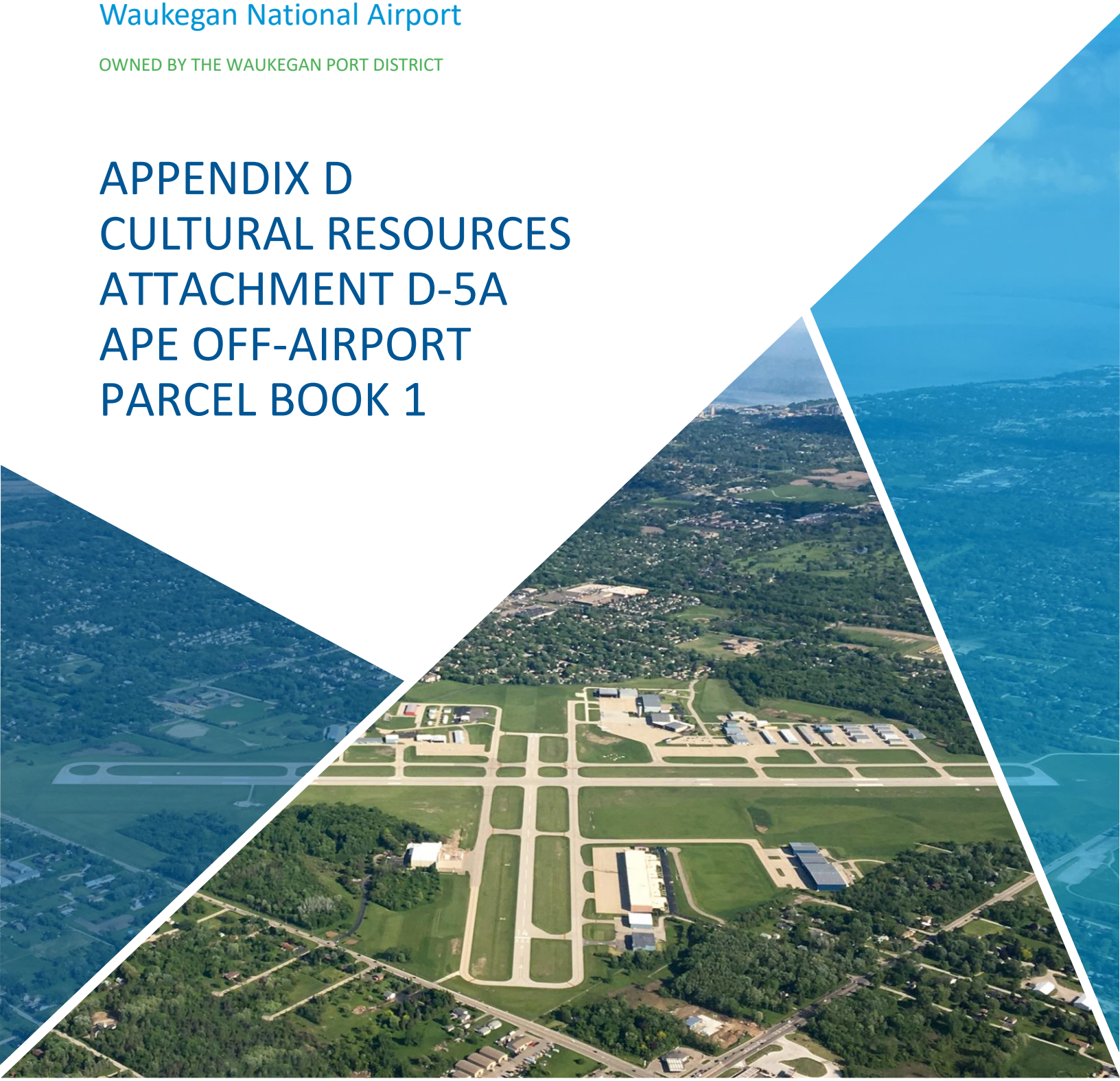
Historic Structures Review- South End

Path: K:\WaukeganAP\18226-02-00_CompleteEA-ALP\GIS\Maps\EA-Exhibits_Pro\EA-Exhibits_Pro.aprx

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-5A
APE OFF-AIRPORT
PARCEL BOOK 1



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

HISTORIC STRUCTURES REVIEW

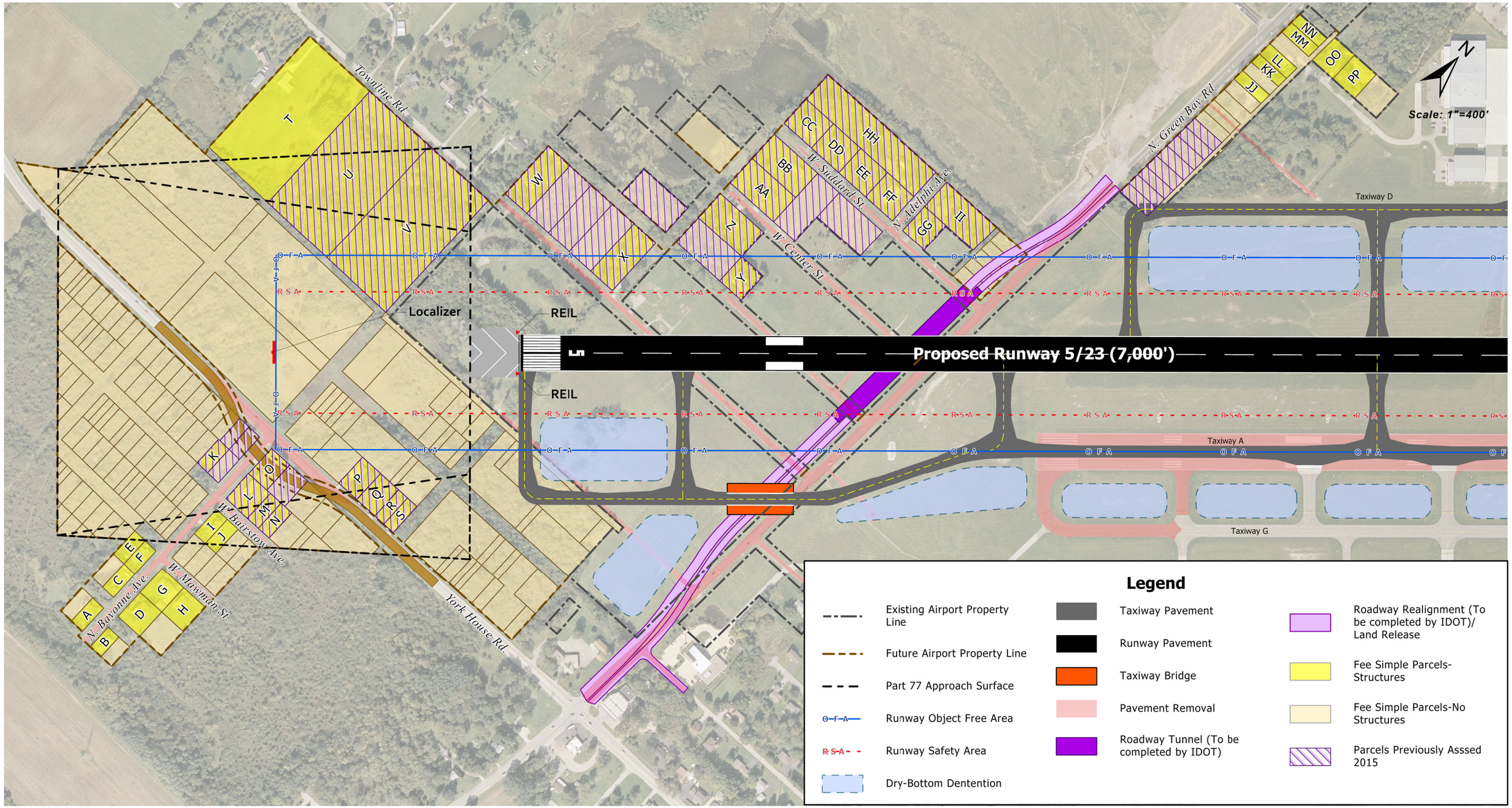
Waukegan National Airport

October 3, 2019

Crawford, Murphy & Tilly

INDEX

Parcel ID	Page Number
0701212010 (A)	1
0806128001 (B)	3
0701210021 (C)	5
0806125025 (D)	7
0701210010 (E)	10
0701210011 (F)	11
0806125021 (G)	14
0806125028 (H)	17
0806121001 (I)	19
0806121002 (J)	21
0701206020 (K)	23
0806116031 (L)	25
0806116015 (M)	27
0806116016 (N)	29
0806116032 (O)	31
0806112032 (P)	33
0806112028 (Q)	35
0806112025 (R)	37
0806112026 (S)	39
0701200011 (T)	41
0701200012 (U)	43
0701200013 (V)	45
0336400013 (W)	47
0431314001 (X)	49
0431314005 (Y)	51
0431312005 (Z)	53
0431312001 (AA)	55
0431309004 (BB)	57
0431309001 (CC)	60
0431305004 (DD)	63
0431305005 (EE)	67
0431305006 (FF)	70
0431305007 (GG)	74
0431306003 (HH)	77
0431305008 (II)	80
0431306010 (JJ)	82
0431301004 (KK-LL)	83
0431301001 (MM-NN)	86
0431132004 (OO)	87
0431132008 (PP)	90
0431132009 (QQ)	93
0429302024 (RR)	100
0429302007 (SS)	106
0429302008 (TT)	109
0429302030 (UU)	112
0429302010 (VV)	115
0429401110 (WW)	119

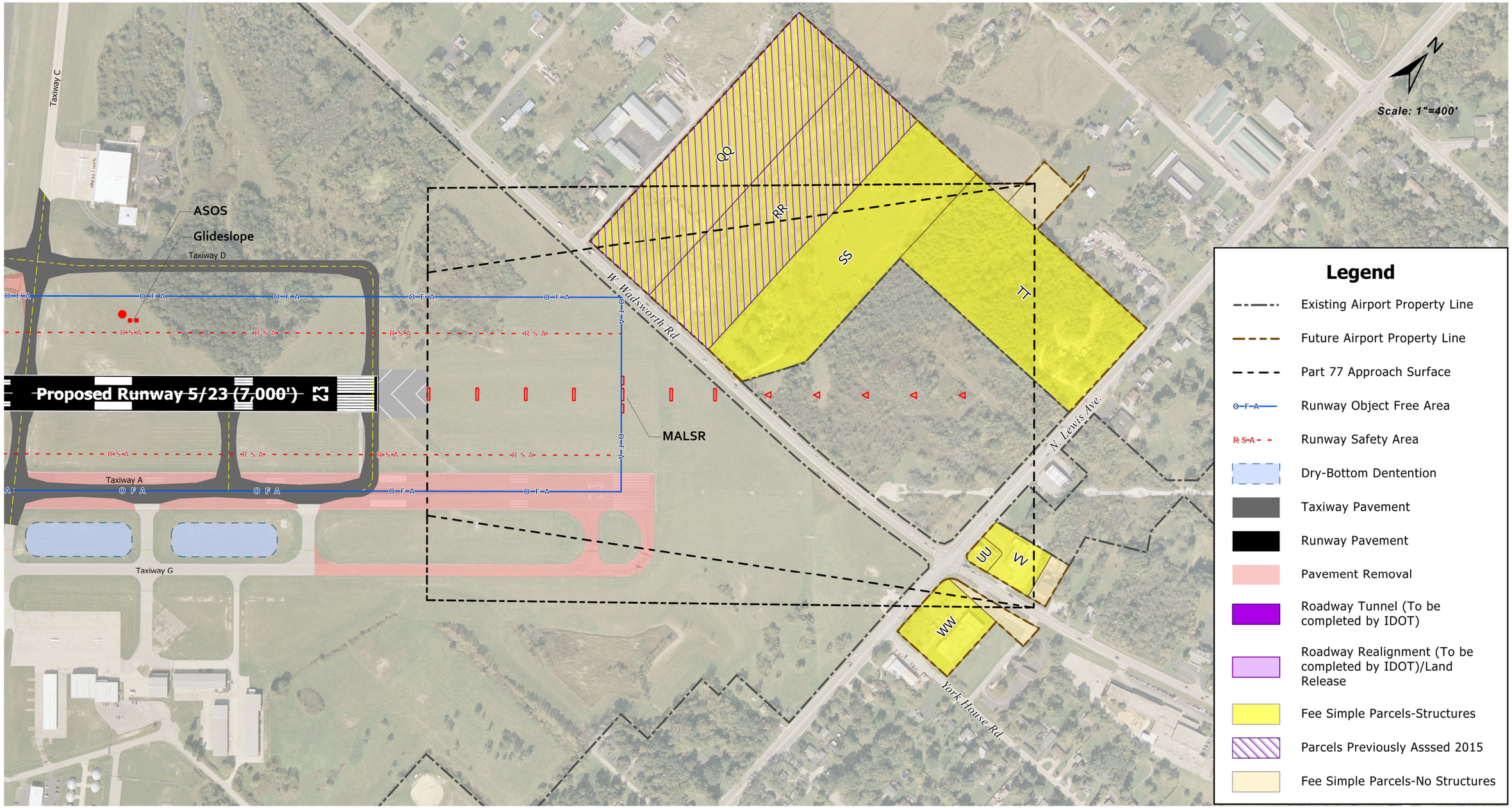


Source: [182260200] Aerial: GRW 2011-Hanson Alp

WAUKEGAN NATIONAL AIRPORT

Historic Structures Review-South End

Path: K:\WaukeganAP\18226-02-00_CompleteEA-ALP\GIS\Maps\EA-Exhibits_Pro\EA-Exhibits_Pro.aprx



Source: [182260200] Aerial: GRW 2011-Hanson Alp

WAUKEGAN NATIONAL AIRPORT

Historic Structures Review-North End

Path: K:\WaukeganAP\18226-02-00_CompleteEA-ALP\GIS\Maps\EA-Exhibits_Pro\EA-Exhibits_Pro.aprx

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 37542 N Bayonne Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0701212010	Taxpayer: Kevin T & Jill I Lenihan
Acquisition: Fee Simple	Improvements: Residential
Age of Structure:32 years	



Structure Number: Parcel 0701212010; Address: 37542 N Bayonne Ave; Camera Facing: West; Date: July 2012



Structure Number: Parcel 0701212010; Address: 37542 N Bayonne Ave; Camera Facing: Overhead; Date: 2019



Structure Number: Parcel 0701212010; Address: 37542 N Bayonne Ave; Camera Facing: Northeast; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 37547 N Bayonne Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806128001	Taxpayer: Celia Santana & Hector Bahena
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 33 years	



Structure Number: Parcel 0806128001; Address: 37547 N Bayonne Ave; Camera Facing: East; Date: July 2012

B



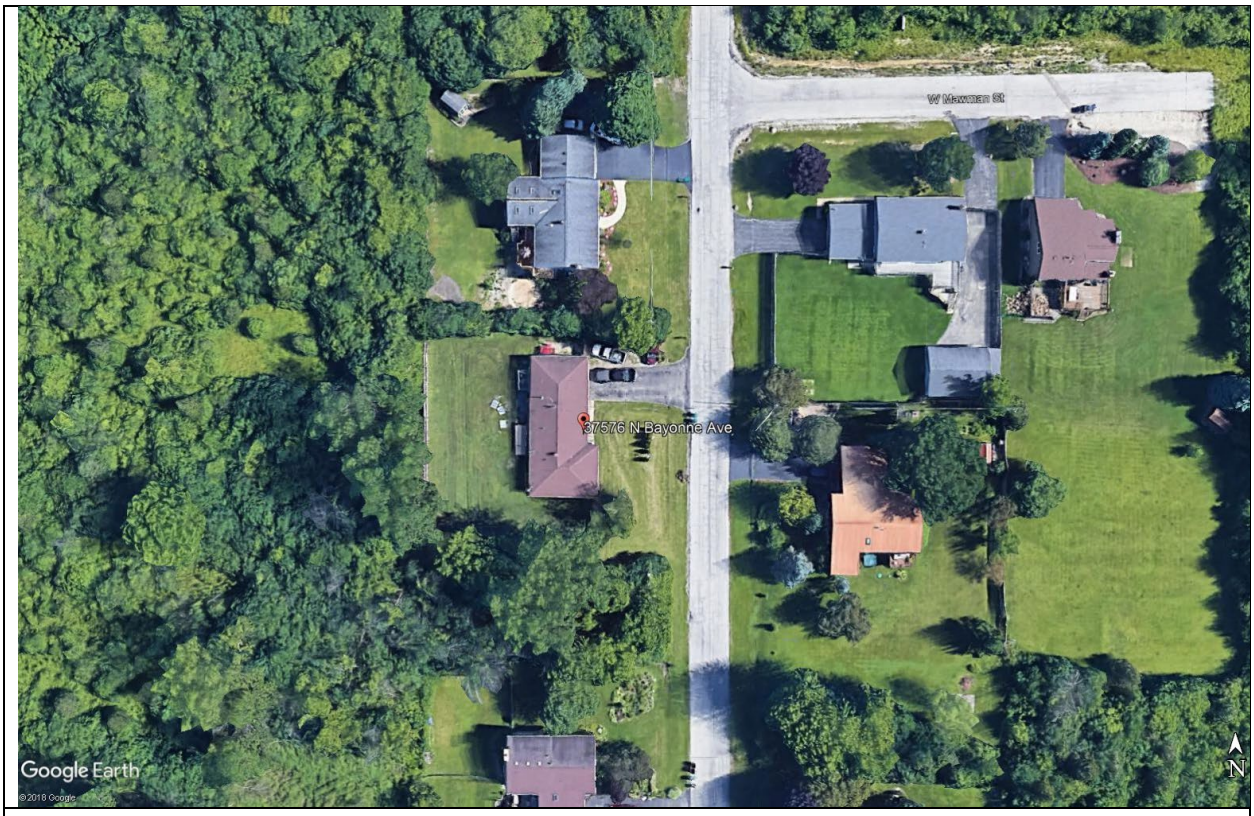
Structure Number: Parcel 0806128001; Address: 37547 N Bayonne Ave; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 37576 N Bayonne Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0701210021	Taxpayer: Kenneth & Becky Leipart
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 38 years	



Structure Number: Parcel 0701210021; Address: 37576 N Bayonne Ave; Camera Facing: West; Date: July 2012

C



Structure Number: Parcel 0701210021; Address: 37576 N Bayonne Ave; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 37581 N Bayonne Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806125025	Taxpayer: Stephen & Loretta D McCarley
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 32 years	



Structure Number: Parcel 0806125025; Address: 37581 N Bayonne Ave; Camera Facing: East; Date: July 2012



Structure Number: Parcel 0806125025; Address: 37581 N Bayonne Ave; Camera Facing: East; Date: July 2012



Structure Number: Parcel 0806125025; Address: 37581 N Bayonne Ave; Camera Facing: Southeast; Date: July 2012

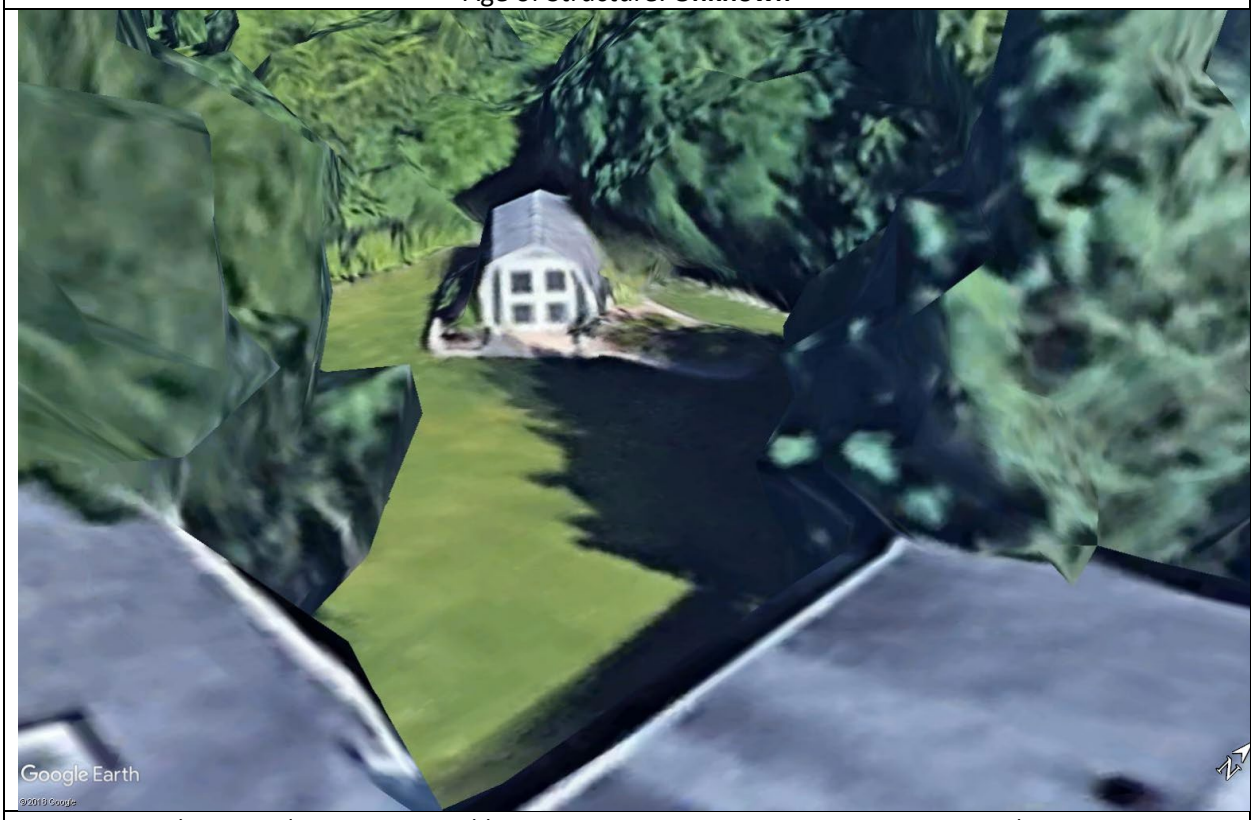


Structure Number: Parcel 0806125025; Address: 37581 N Bayonne Ave; Camera Facing: Northeast; Date: 2019



Structure Number: Parcel 0806125025; Address: 37581 N Bayonne Ave; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 13025 W Mawman St	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0701210010	Taxpayer: Thomas L Merlock
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **Unknown**	



Structure Number: Parcel 0701210010; Address: 13025 W Mawman St; Camera Facing: Northwest; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 37600 N Bayonne Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0701210011	Taxpayer: Thomas L Merlock
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 40 years	



Structure Number: Parcel 0701210011; Address: 37600 N Bayonne Ave; Camera Facing: West; Date: July 2012



Structure Number: Parcel 0701210011; Address: 37600 N Bayonne Ave; Camera Facing: West; Date: July 2012



Structure Number: Parcel 0701210011; Address: 37600 N Bayonne Ave; Camera Facing: Overhead; Date: 2019

F



Structure Number: Parcel 0701210011; Address: 37600 N Bayonne Ave; Camera Facing: Northeast; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12987 Mawman Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806125021	Taxpayer: Axel & Cheryl L Knauz
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 40 years	



Structure Number: Parcel 0806125021; Address: 12987 Mawman Ave; Camera Facing: South; Date: July 2012

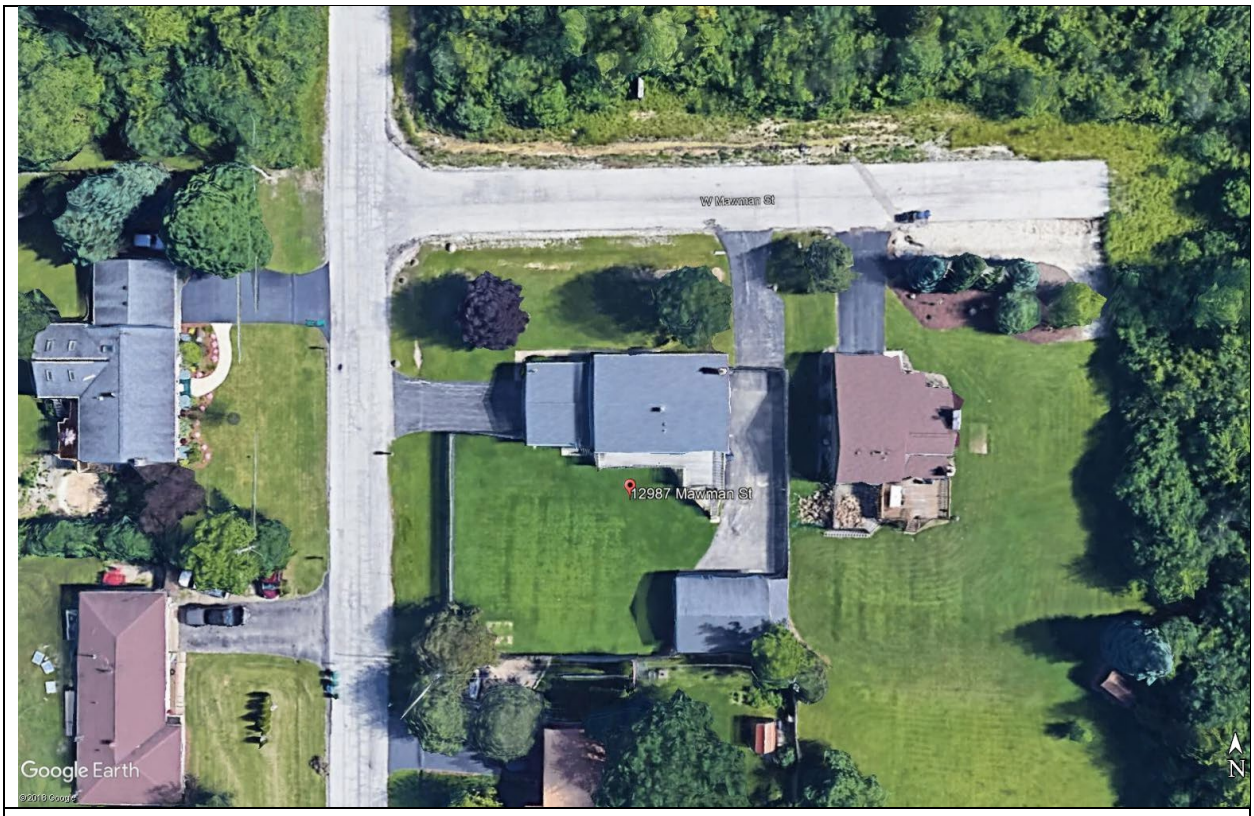


Structure Number: Parcel 0806125021; Address: 12987 Mawman Ave; Camera Facing: South; Date: July 2012



Structure Number: Parcel 0806125021; Address: 12987 Mawman Ave; Camera Facing: East; Date: July 2012

G



Structure Number: Parcel 0806125021; Address: 12987 Mawman Ave; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12955 W Mawman Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806125028	Taxpayer: Todd D Lantz
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 32 years	



Structure Number: Parcel 0806125028; Address: 12955 W Mawman Ave; Camera Facing: Southeast; Date: July 2012



Structure Number: Parcel 0806125028; Address: 12955 W Mawman Ave; Camera Facing: Southeast; Date: July 2012



Structure Number: Parcel 0806125028; Address: 12955 W Mawman Ave; Camera Facing: Overhead; Date: 2019

I

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 37665 N Bayonne Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806121001	Taxpayer: Robert J Haberski
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 40 years	

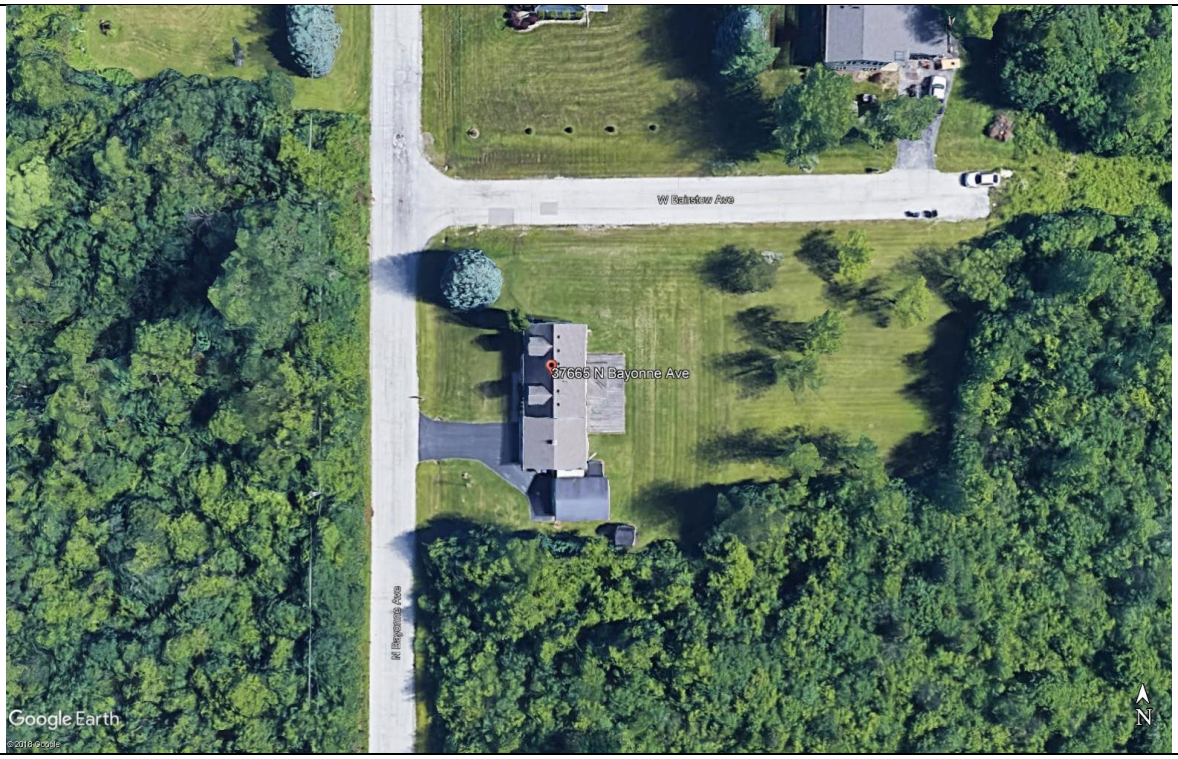


Structure Number: Parcel 0806121001; Address: 37665 N Bayonne Ave; Camera Facing: Southwest; Date: July 2012

I



Structure Number: Parcel 0806121001; Address: 37665 N Bayonne Ave; Camera Facing: East; Date: July 2012



Structure Number: Parcel 0806121001; Address: 37665 N Bayonne Ave; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12977 W Bairstow St	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806121002	Taxpayer: Robert J Haberski
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **Unknown**	



Structure Number: Parcel 0806121002; Address: 37665 N Bayonne Ave; Camera Facing: South; Date: July 2012

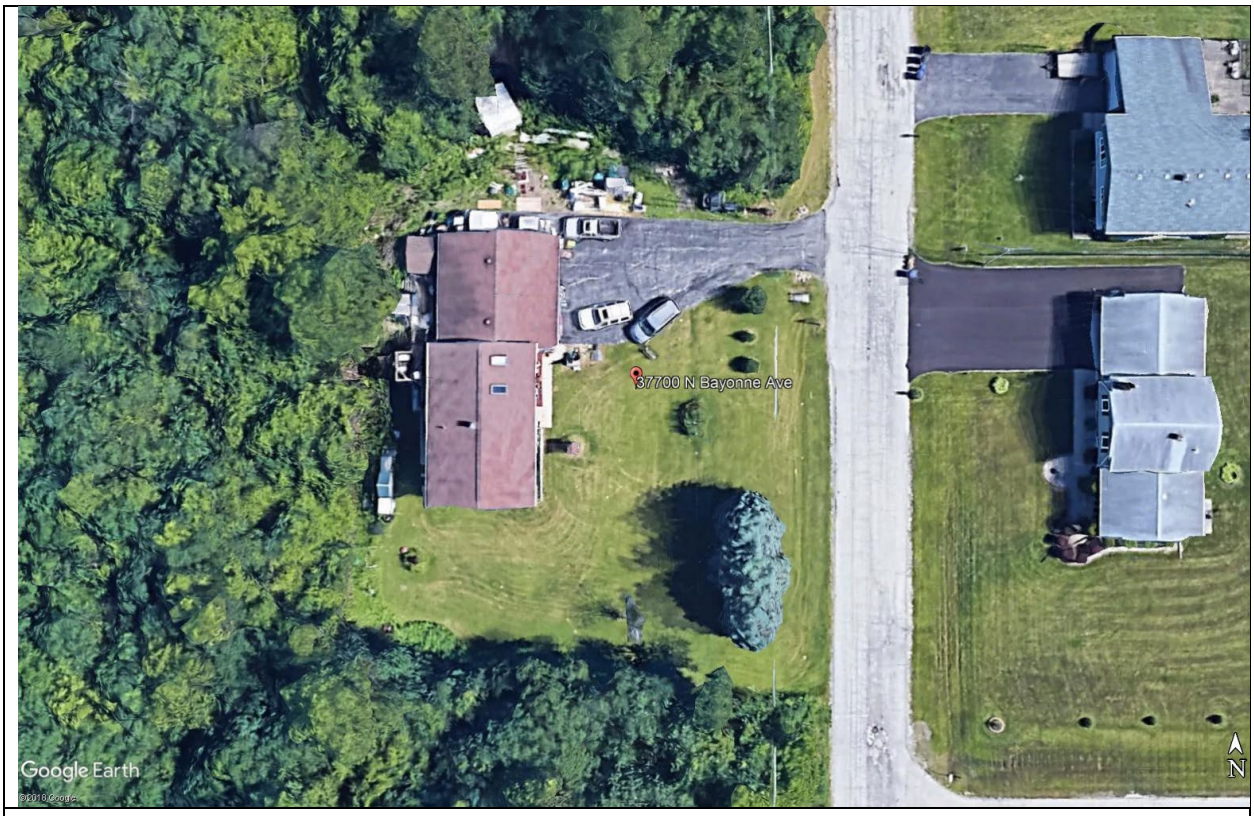


Structure Number: Parcel 0806121002; Address: 37665 N BAYONNE AVE; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 37700 N Bayonne Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0701206020	Taxpayer: Ernestine A Brashear
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 35 years	



Structure Number: Parcel 0701206020; Address: 37700 N Bayonne Ave; Camera Facing: West; Date: July 2012



Structure Number: Parcel 0701206020; Address: 37700 N Bayonne Ave; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 37707 N Bayonne Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806116031	Taxpayer: John C & Ruth A Jenkins
Acquisition: Fee Simple	Improvements: Fee Simple
Age of Structure: 39 years	



Structure Number: Parcel 0806116031; Address: 37707 N Bayonne Ave; Camera Facing: East; Date: July 2012

L



Structure Number: Parcel 0806116031; Address: 37707 N Bayonne Ave; Camera Facing: North; Date: July 2012



Structure Number: Parcel 0806116031; Address: 37707 N Bayonne Ave; Camera Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12968 W Bairstow St	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806116015	Taxpayer: DAVID E & RENEE C KAUCNIK
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 32 years	



Structure Number: Parcel 0806116015; Address: 12968 W Bairstow St; Camera Facing:Northeast; Date: July 2012



Structure Number: Parcel 0806116015; Address: 12968 W Bairstow St; Camera Facing: Northeast; Date: July 2012

N

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12958 W Bairstow St	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806116016	Taxpayer: David E & Renee C Kaucnik
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 32 years	



Structure Number: Parcel 0806116016; Address: 12958 W Bairstow St; Camera Facing: Northwest; Date: July 2012

N



Structure Number: Parcel 0806116016; Address: 12958 W Bairstow St; Camera Facing: Overhead; Date: July 2012

O

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 37733 N Bayonne Ave	City: Beach Park, Il
County: Lake	Photographer: Google
Parcel Number: 0806116032	Taxpayer: Armando Alvarez Jr
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 40 years	

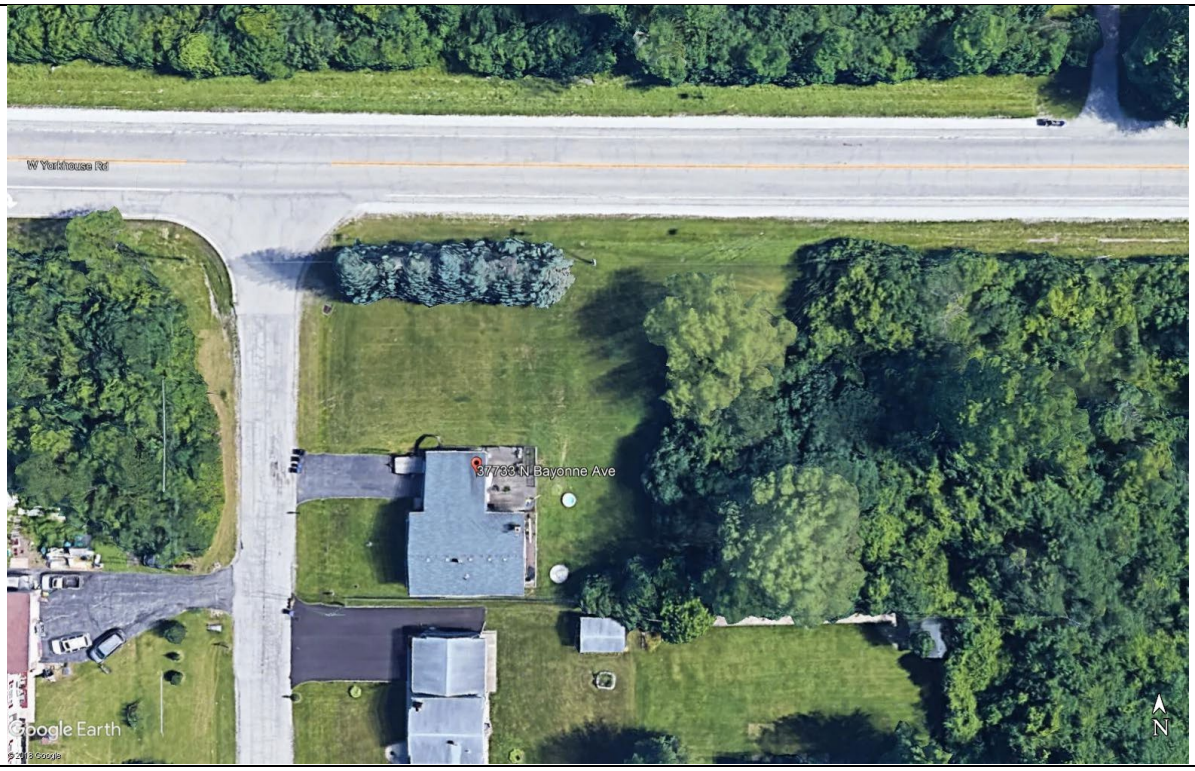


Structure Number: Parcel 0806116032; Address: 37733 N Bayonne Ave; Camera Facing: East; Date: July 2012

O



Structure Number: Parcel 0806116032; Address: 37733 N Bayonne Ave; Camera Facing: Southeast; Date: August 2012



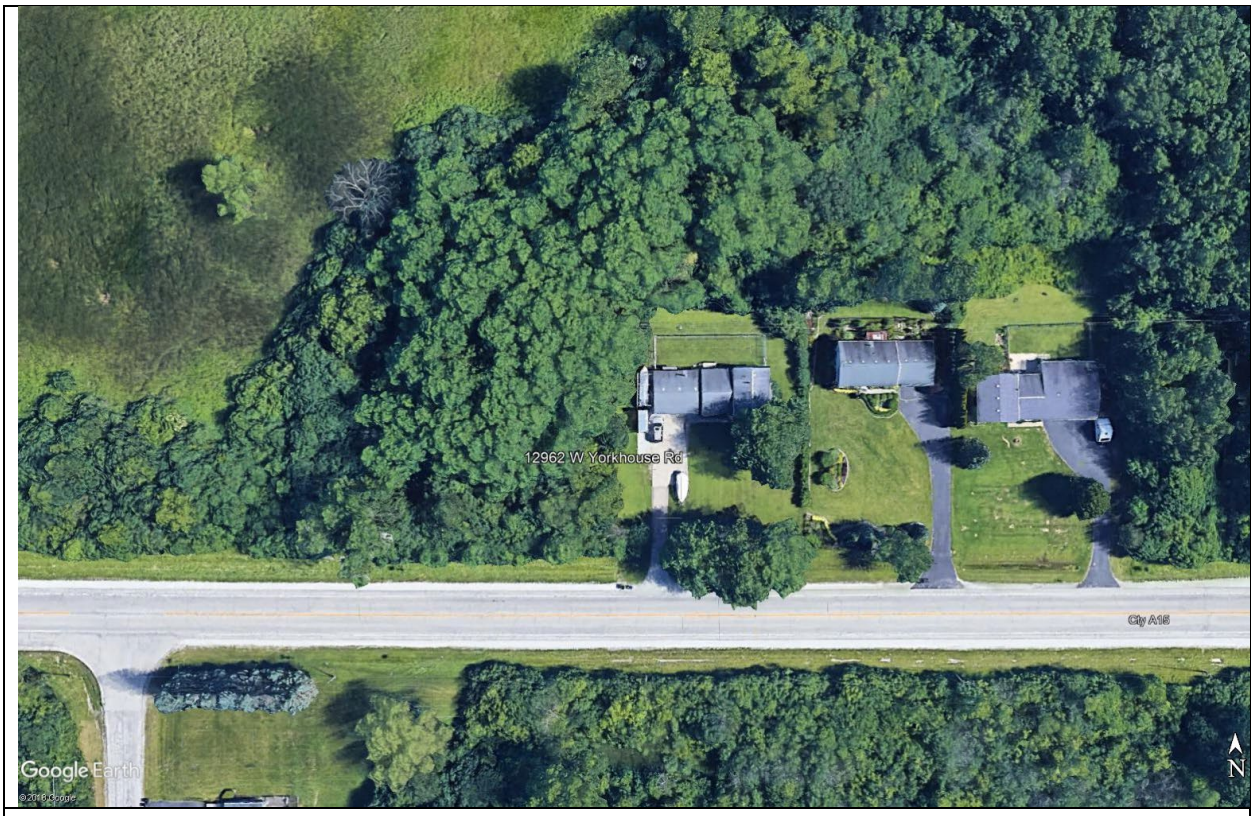
Structure Number: Parcel 0806116032; Address: 37733 N Bayonne Ave; Camera Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12922 W York House Rd	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806112032	Taxpayer: Robert D & Cynthia R Skvarce
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 32 years	



Structure Number: Parcel 0806112032; Address: 12922 W York House Rd; Camera Facing: North; Date: August 2012

P

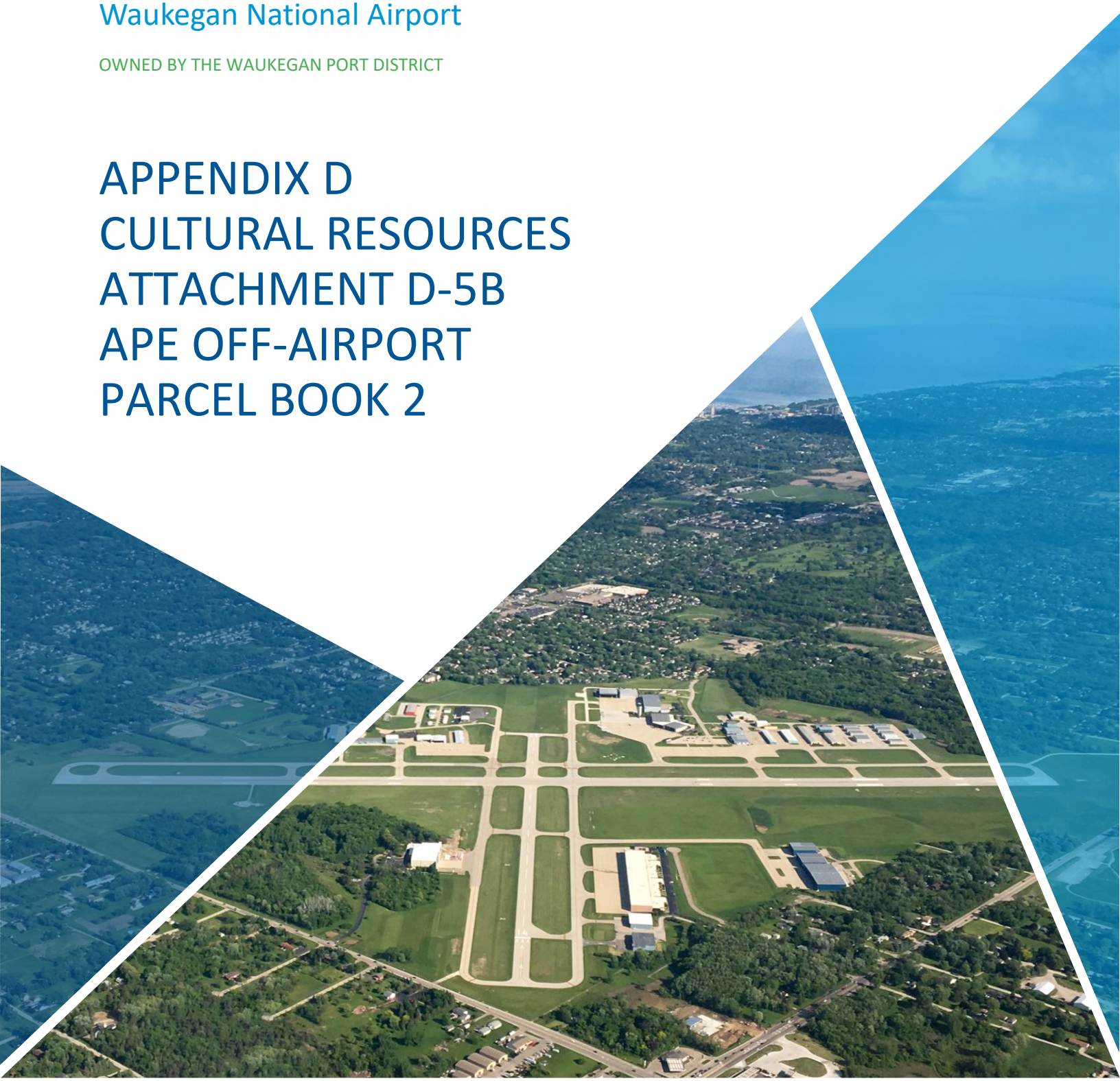


Structure Number: Parcel 0806112032; Address: 12922 W York House Rd; Camera Facing: Overhead; Date: 2019

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-5B
APE OFF-AIRPORT
PARCEL BOOK 2



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

HISTORIC STRUCTURES REVIEW

Waukegan National Airport

October 3, 2019

Crawford, Murphy & Tilly

INDEX

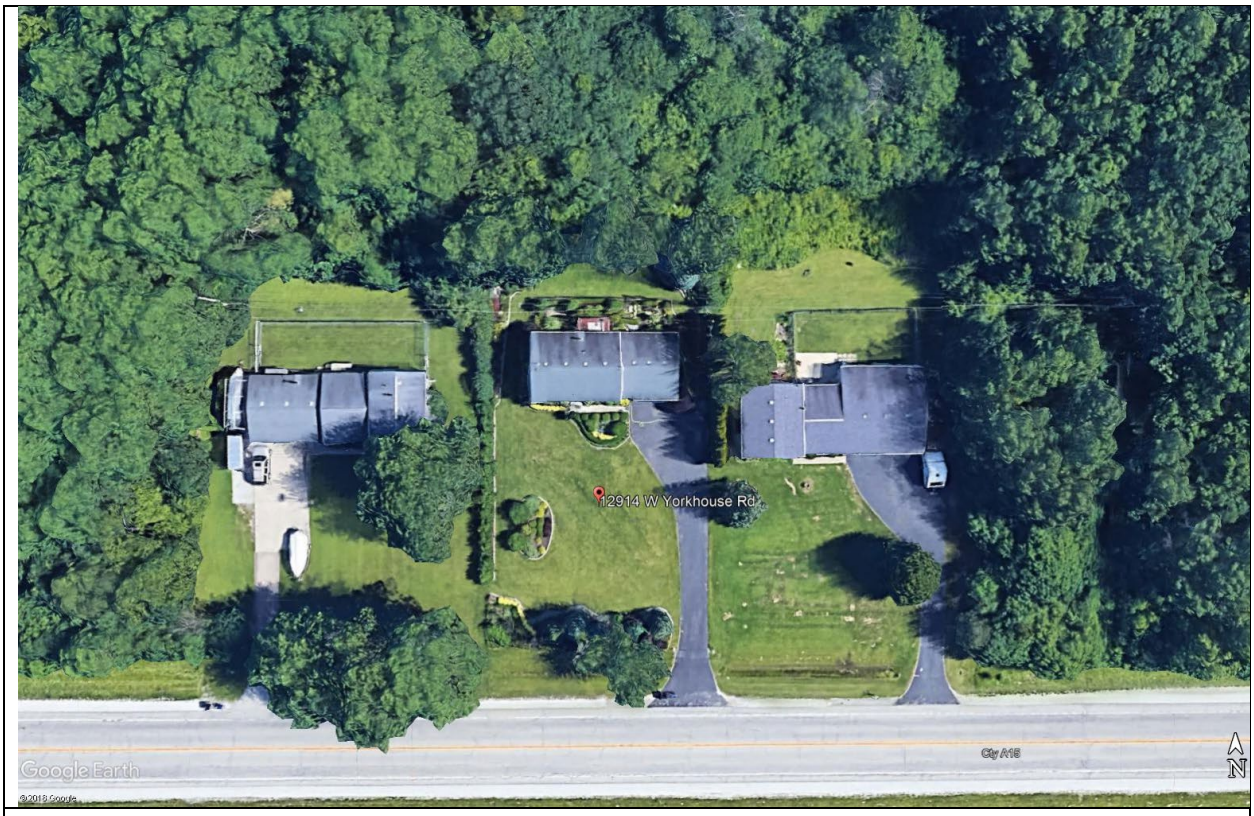
Parcel ID	Page Number
0701212010 (A)	1
0806128001 (B)	3
0701210021 (C)	5
0806125025 (D)	7
0701210010 (E)	10
0701210011 (F)	11
0806125021 (G)	14
0806125028 (H)	17
0806121001 (I)	19
0806121002 (J)	21
0701206020 (K)	23
0806116031 (L)	25
0806116015 (M)	27
0806116016 (N)	29
0806116032 (O)	31
0806112032 (P)	33
0806112028 (Q)	35
0806112025 (R)	37
0806112026 (S)	39
0701200011 (T)	41
0701200012 (U)	43
0701200013 (V)	45
0336400013 (W)	47
0431314001 (X)	49
0431314005 (Y)	51
0431312005 (Z)	53
0431312001 (AA)	55
0431309004 (BB)	57
0431309001 (CC)	60
0431305004 (DD)	63
0431305005 (EE)	67
0431305006 (FF)	70
0431305007 (GG)	74
0431306003 (HH)	77
0431305008 (II)	80
0431306010 (JJ)	82
0431301004 (KK-LL)	83
0431301001 (MM-NN)	86
0431132004 (OO)	87
0431132008 (PP)	90
0431132009 (QQ)	93
0429302024 (RR)	100
0429302007 (SS)	106
0429302008 (TT)	109
0429302030 (UU)	112
0429302010 (VV)	115
0429401110 (WW)	119

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12914 W York House Rd	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806112028	Taxpayer: Tanya M Dornik
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 25 years	



Structure Number: Parcel 0806112028; Address: 12914 W York House Rd; Camera Facing: Northwest; Date: August 2012

Q

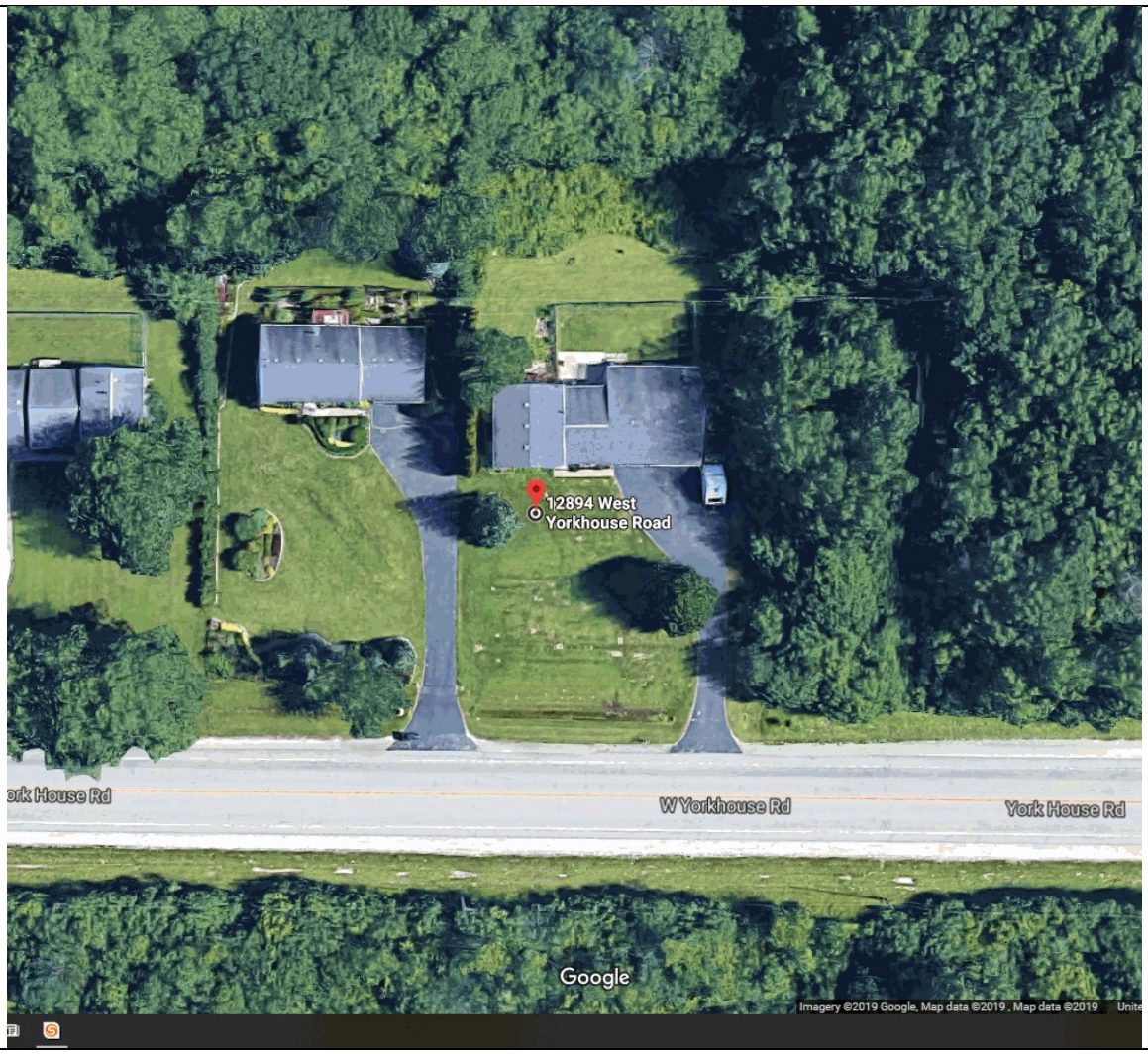


Structure Number: Parcel 0806112028; Address: 12914 W York House Rd; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12894 W York House Rd	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806112025	Taxpayer: Donald F & Roberta D Smith
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 34 years	



Structure Number: Parcel 0806112025; Address: 12894 W York House Rd; Camera Facing: Northwest; Date: August 2012



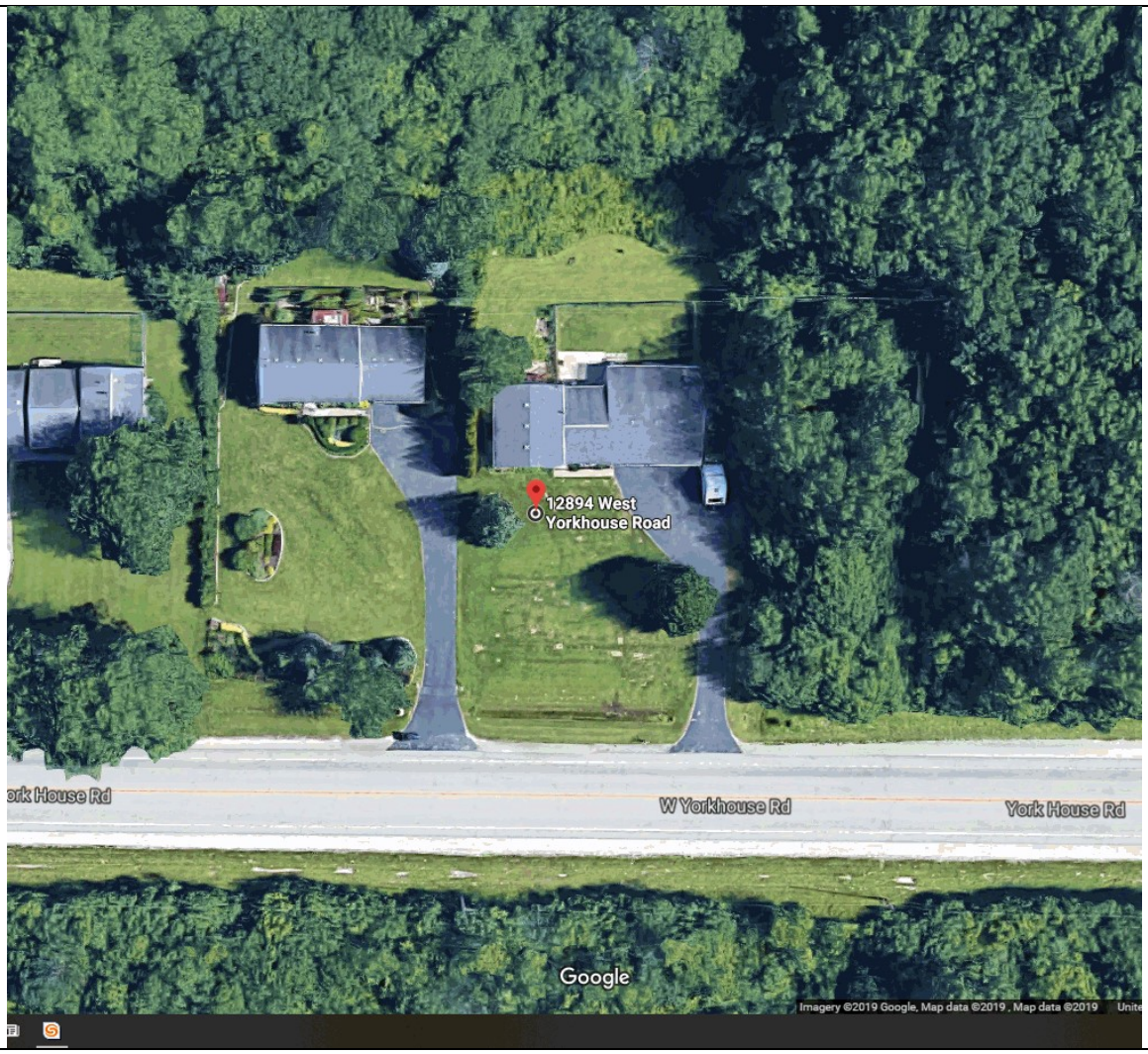
Structure Number: Parcel 0806112025; Address: 12894 W York House Rd; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12882 W York House Rd	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0806112026	Taxpayer: Donald F & Roberta D Smith
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 34 years	



Structure Number: Parcel 0806112026; Address: 12882 W York House Rd; Camera Facing: Northwest; Date: August 2012

S



Structure Number: Parcel 0806112026; Address: 12882 W York House Rd; Camera Facing: Overhead; Date: 2019

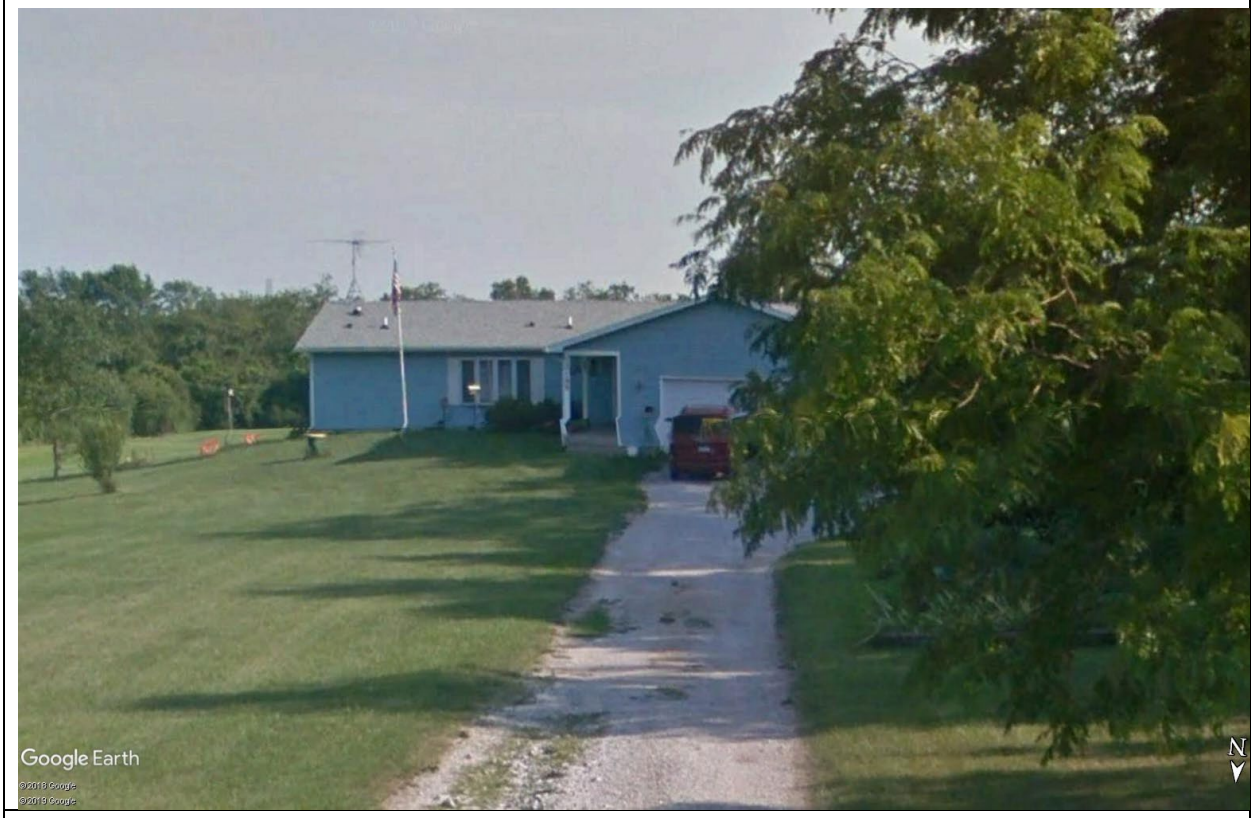
T

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 13185 W Town Line Rd	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0701200011	Taxpayer: Kenneth L & Christine D Smith
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 37 years	



Structure Number: Parcel 0701200011; Address: 13185 W Town Line Rd; Camera Facing: South; Date: 2019

T



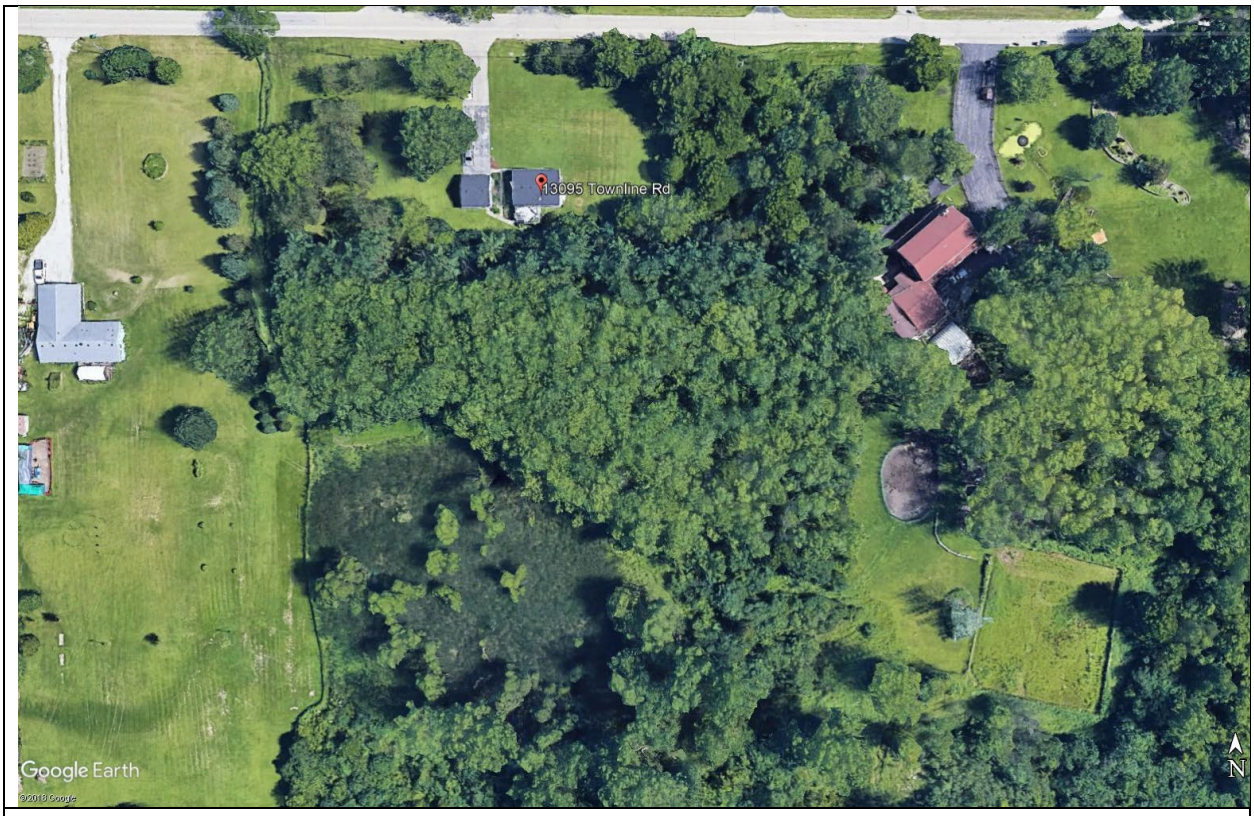
Structure Number: Parcel 0701200011; Address: 13185 W Town Line Rd; Camera Facing: South; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 13095 W Town Line Rd	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0701200012	Taxpayer: James Benton
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 34 years	



Structure Number: Parcel 0701200012; Address: 13095 W Town Line Rd; Camera Facing: South; Date: August 2012

U



Structure Number: Parcel 0701200012; Address: 13095 W Town Line Rd; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 13029 W Town Line Rd	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0701200013	Taxpayer: John Stark
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 30 years	



Structure Number: Parcel 0701200013; Address: 13029 W Town Line Rd; Camera Facing: South; Date: August 2012

V



Structure Number: Parcel 0701200013; Address: 13029 W Town Line Rd; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12984 W Town Line Rd	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0431314001	Taxpayer: Pastor E Hernandez
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 27 years	



Structure Number: Parcel 0431314001; Address: 12984 W Town Line Rd; Camera Facing: North; Date: August 2012

W



Structure Number: Parcel 0431314001; Address: 12984 W Town Line Rd; Camera Facing: Overhead; Date: 2019

X

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12892 W Town Line Rd	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0431314005	Taxpayer: Theodore C & Linda M Sittig
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **119 years**	



Structure Number: Parcel 0431314005; Address: 12892 W Town Line Rd; Camera Facing: East; Date: April 2019



Structure Number: Parcel 0431314005; Address: 12892 W Town Line Rd; Camera Facing: South; Date: April 2019

X



Structure Number: Parcel 0431312005; Address: 12892 W Town Line Rd; Camera Facing: North; Date: July 2012, Source: Google

Y

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12812 W Zepher St	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0431312005	Taxpayer: Matthew T & Yuliana Yucus
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 35 years	



Structure Number: Parcel 0431312005; Address: 12812 W Zepher St; Camera Facing: North; Date: 2019

Y



Structure Number: Parcel 0431312005; Address: 12812 W Zepher St; Camera Facing: North; Date: July 2012



Structure Number: Parcel 0431312005; Address: 12812 W Zepher St; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12847 W Center St	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0431312001	Taxpayer: Jose D & Celia Quinonez
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 33 years	



Structure Number: Parcel 0431312001; Address: 12847 W Center St; Camera Facing: Southeast; Date: July 2012



Structure Number: Parcel 0431312001; Address: 12847 W Center St; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12854 W Center St	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0431309004	Taxpayer: Douglas J Bergstrom
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 32 years	



Structure Number: Parcel 0431309004; Address: 12854 W Center St; Camera Facing: Northwest; Date: July 2012



Structure Number: Parcel 0431309004; Address: 12854 W Center St; Camera Facing: Northwest; Date: July 2012



Structure Number: Parcel 0431309004; Address: 12854 W Center St; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 38235 N Adelphi Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0431309001	Taxpayer: Daniel & Darlene Castillo
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 18 years	



Structure Number: Parcel 0431309001; Address: 38235 N Adelphi Ave; Camera Facing: Southwest; Date: July 2012



Structure Number: Parcel 0431309001; Address: 38235 N Adelphi Ave; Camera Facing: Southeast; Date: July 2012



Structure Number: Parcel 0431309001; Address: 38235 N Adelphi Ave; Camera Facing: Southwest; Date: July 2012



Structure Number: Parcel 0431309001; Address: 38235 N Adelphi Ave; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12854 W Suddard St	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0431305004	Taxpayer: Rubi Aguilera
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **53 years**	



Structure Number: Parcel 0431305004; Address: 12854 S Suddard St; Camera Facing: North; Date: July 2012, Source: Google



Structure Number: Parcel 0431305004; Address: 12854 S Suddard St; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431305004; Address: 12854 S Suddard St; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431305004; Address: 12854 S Suddard St; Camera Facing: South; Date: April 2019, Source: nearmap

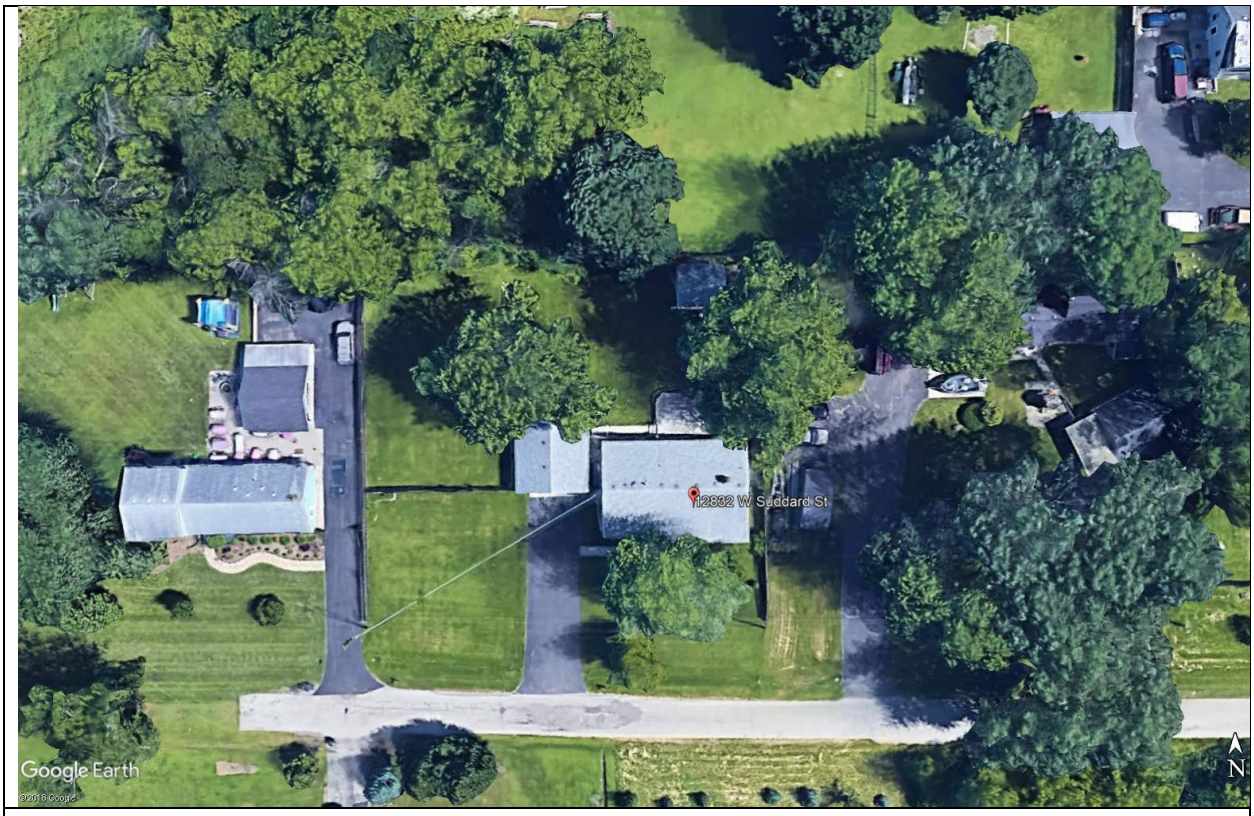


Structure Number: Parcel 0431305004; Address: 12854 S Suddard St; Camera Facing: West; Date: April 2019, Source: nearmap

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12832 W Suddard St	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0431305005	Taxpayer: Jean Debraccio & Janice L Doody
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 47 years	



Structure Number: Parcel 0431305005; Address: 12832 S Suddard St; Camera Facing: Northeast; Date: July 2012, Source: Google



Structure Number: Parcel 0431305005; Address: 12832 S Suddard St; Camera Facing: Overhead; Date: July 2012



Structure Number: Parcel 0431305005; Address: 12832 S Suddard St; Camera Facing: East; Date: April 2019



Structure Number: Parcel 0431305005; Address: 12832 S Suddard St; Camera Facing: North; Date: April 2019



Structure Number: Parcel 0431305005; Address: 12832 S Suddard St; Camera Facing: South; Date: April 2019

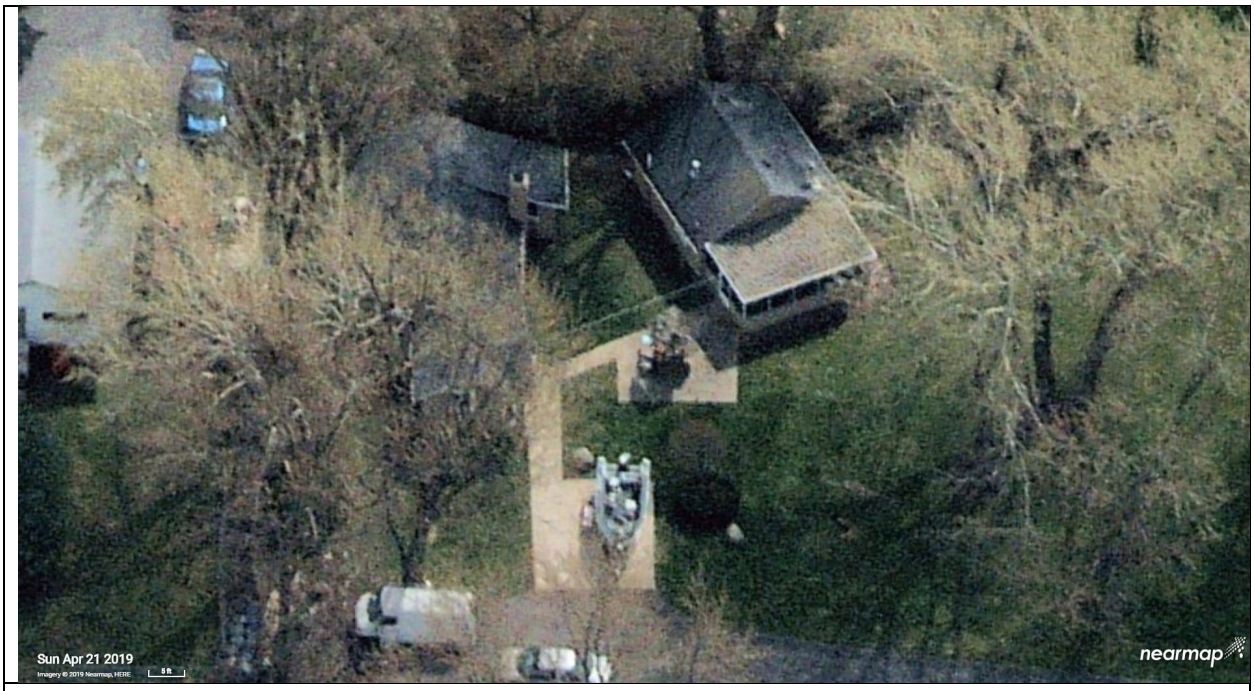


Structure Number: Parcel 0431305005; Address: 12832 S Suddard St; Camera Facing: West; Date: April 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12796 W Suddard St	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0431305006	Taxpayer: Scott R Miscenic
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **83 years**	



Structure Number: Parcel 0431305006; Address: 12796 S Suddard St; Camera Facing: North; Date: July 2012



Structure Number: Parcel 0431305006; Address: 12796 S Suddard St; Camera Facing: East; Date: April 2018



Structure Number: Parcel 0431305006; Address: 12796 S Suddard St; Camera Facing: North; Date: April 2018



Structure Number: Parcel 0431305006; Address: 12796 S Suddard St; Camera Facing: South; Date: April 2018

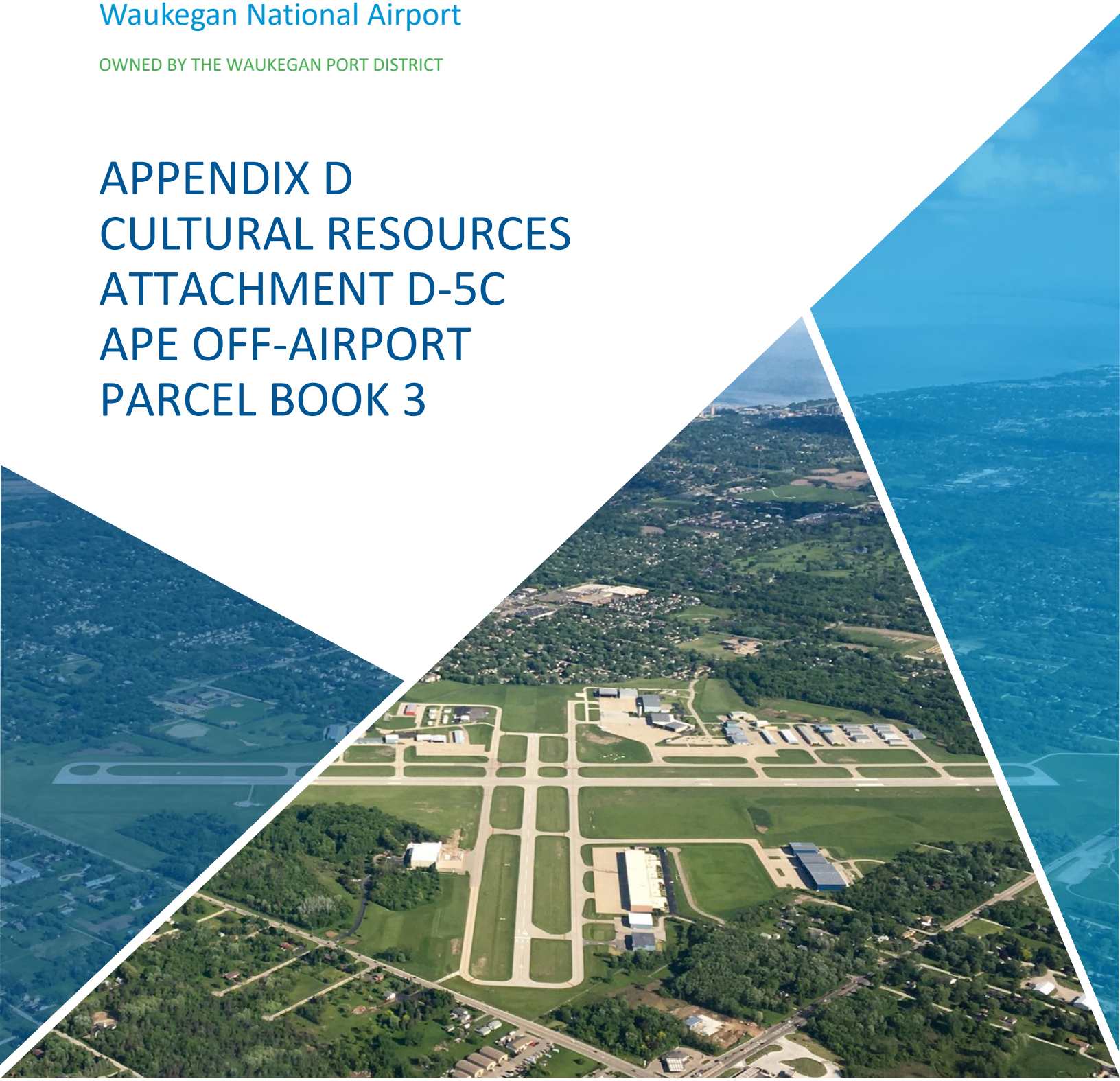


Structure Number: Parcel 0431305006; Address: 12796 S Suddard St; Camera Facing: West; Date: April 2018

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-5C
APE OFF-AIRPORT
PARCEL BOOK 3



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

HISTORIC STRUCTURES REVIEW

Waukegan National Airport

October 3, 2019

Crawford, Murphy & Tilly

INDEX

Parcel ID	Page Number
0701212010 (A)	1
0806128001 (B)	3
0701210021 (C)	5
0806125025 (D)	7
0701210010 (E)	10
0701210011 (F)	11
0806125021 (G)	14
0806125028 (H)	17
0806121001 (I)	19
0806121002 (J)	21
0701206020 (K)	23
0806116031 (L)	25
0806116015 (M)	27
0806116016 (N)	29
0806116032 (O)	31
0806112032 (P)	33
0806112028 (Q)	35
0806112025 (R)	37
0806112026 (S)	39
0701200011 (T)	41
0701200012 (U)	43
0701200013 (V)	45
0336400013 (W)	47
0431314001 (X)	49
0431314005 (Y)	51
0431312005 (Z)	53
0431312001 (AA)	55
0431309004 (BB)	57
0431309001 (CC)	60
0431305004 (DD)	63
0431305005 (EE)	67
0431305006 (FF)	70
0431305007 (GG)	74
0431306003 (HH)	77
0431305008 (II)	80
0431306010 (JJ)	82
0431301004 (KK-LL)	83
0431301001 (MM-NN)	86
0431132004 (OO)	87
0431132008 (PP)	90
0431132009 (QQ)	93
0429302024 (RR)	100
0429302007 (SS)	106
0429302008 (TT)	109
0429302030 (UU)	112
0429302010 (VV)	115
0429401110 (WW)	119

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 38208 N Adelphi Ave	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0431305007	Taxpayer: Berto Armstrong
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **60 years**	



Structure Number: Parcel 0431305007; Address: 38208 N Adelphi Ave; Camera Facing: North; Date: July 2012, Source: Google



Structure Number: Parcel 0431305007; Address: 38208 N Adelphi Ave; Camera Facing: Northwest; Date: July 2012, Source: Google



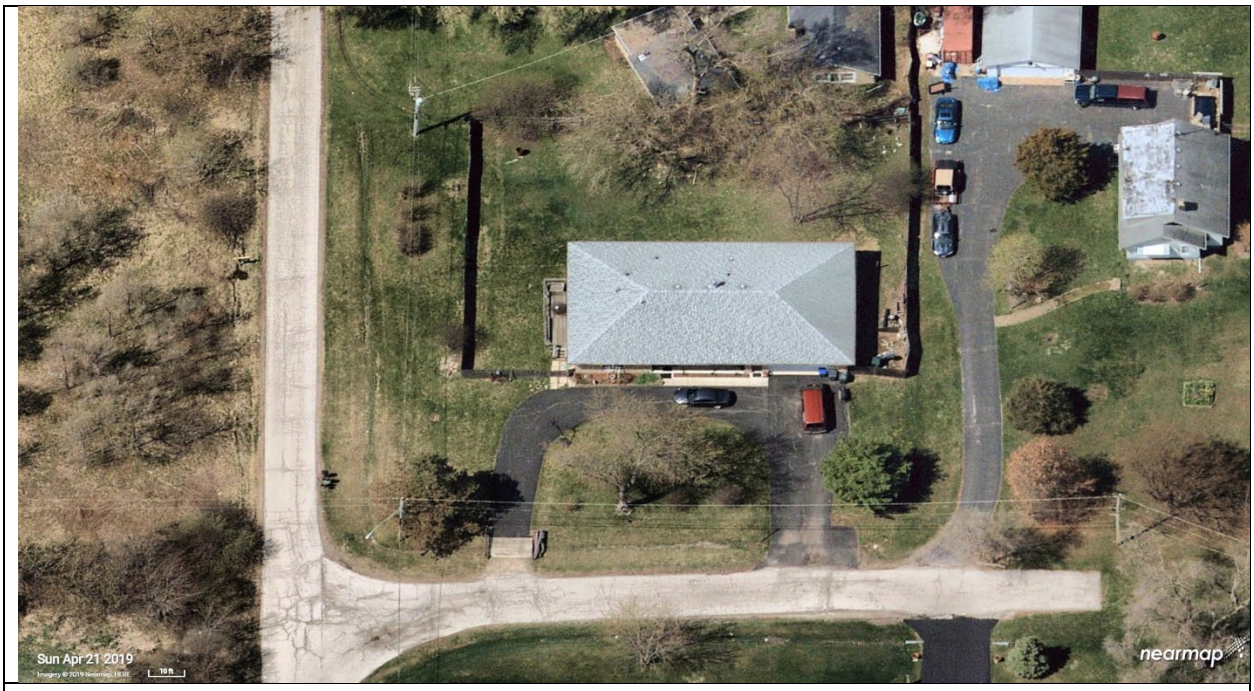
Structure Number: Parcel 0431305007; Address: 38208 N Adelphi Ave; Camera Facing: North; Date: July 2012, Source: Google



Structure Number: Parcel 0431305007; Address: 38208 N Adelphi Ave; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431305007; Address: 38208 N Adelphi Ave; Camera Facing: South; Date: April 2019, Source: nearmap

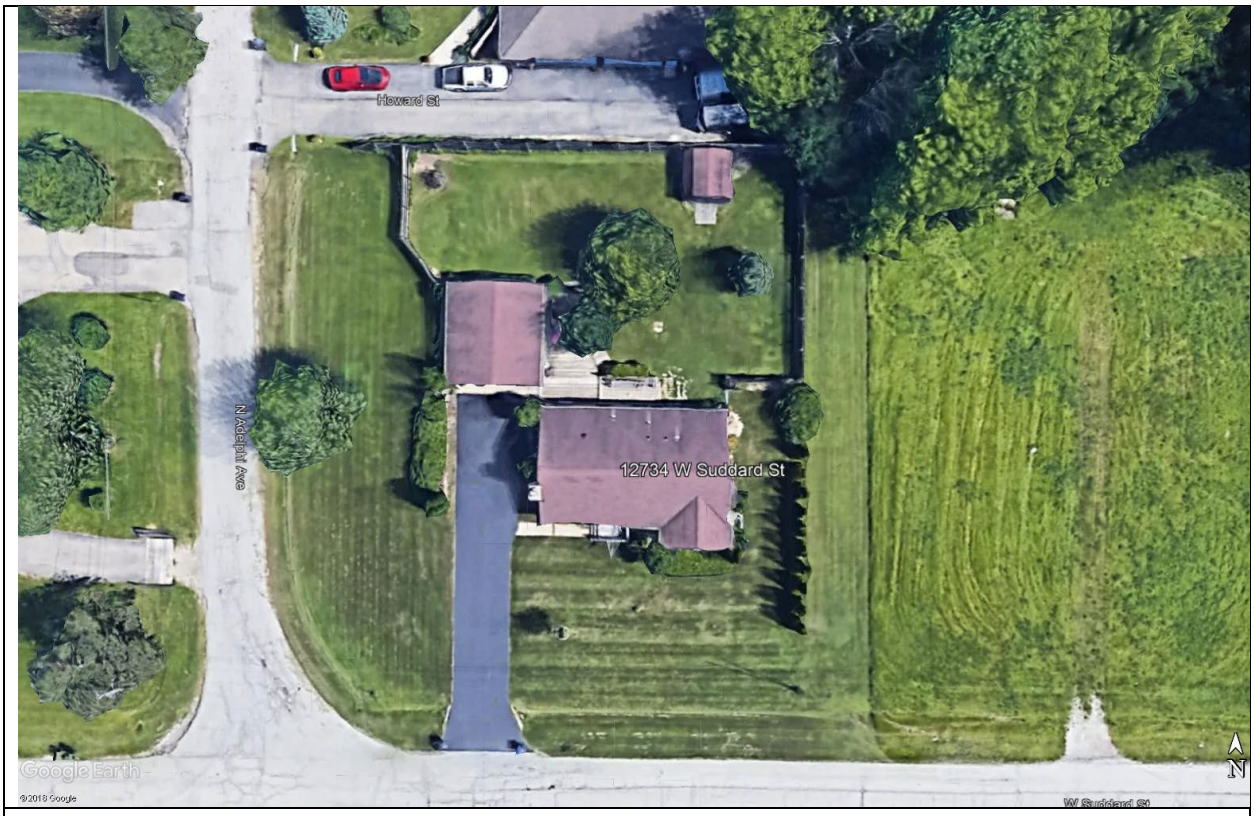


Structure Number: Parcel 0431305007; Address: 38208 N Adelphi Ave; Camera Facing: West; Date: April 2019, Source: nearmap

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12734 W Suddard St	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0431306003	Taxpayer: Allen L & Dorothy M Vogel
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **62 years**	



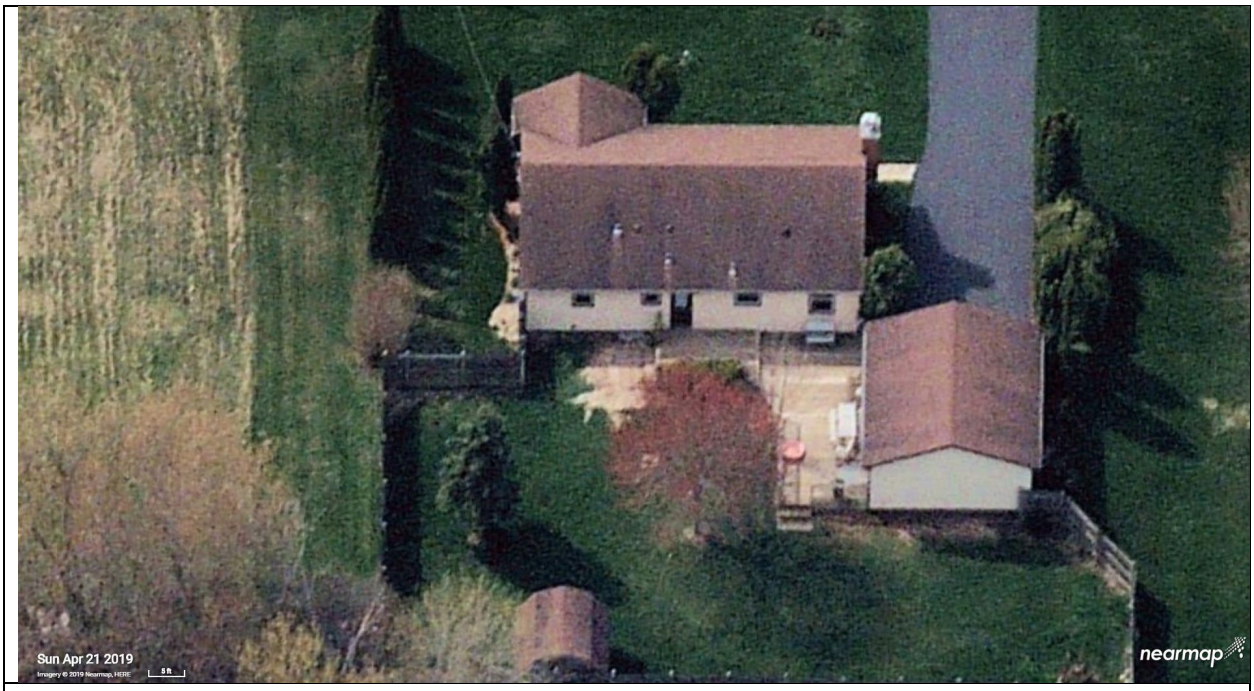
Structure Number: Parcel 0431306003; Address: 12734 W Suddard St; Camera Facing: Northeast; Date: August 2015, Source: Google



Structure Number: Parcel 0431306003; Address: 12734 W Suddard St; Camera Facing: Overhead; Date: August 2015, Source: Google



Structure Number: Parcel 0431306003; Address: 12734 W Suddard St; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431306003; Address: 12734 W Suddard St; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431306003; Address: 12734 W Suddard St; Camera Facing: West; Date: April 2019, Source: nearmap

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 38236 N Adelphi Ave	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0431305008	Taxpayer: Howard D & Barbara M Jansen
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **81 years**	



Structure Number: Parcel 0431305008; Address: 38236 N Adelphi Ave; Camera Facing: North; Date: 2019, Source: Google



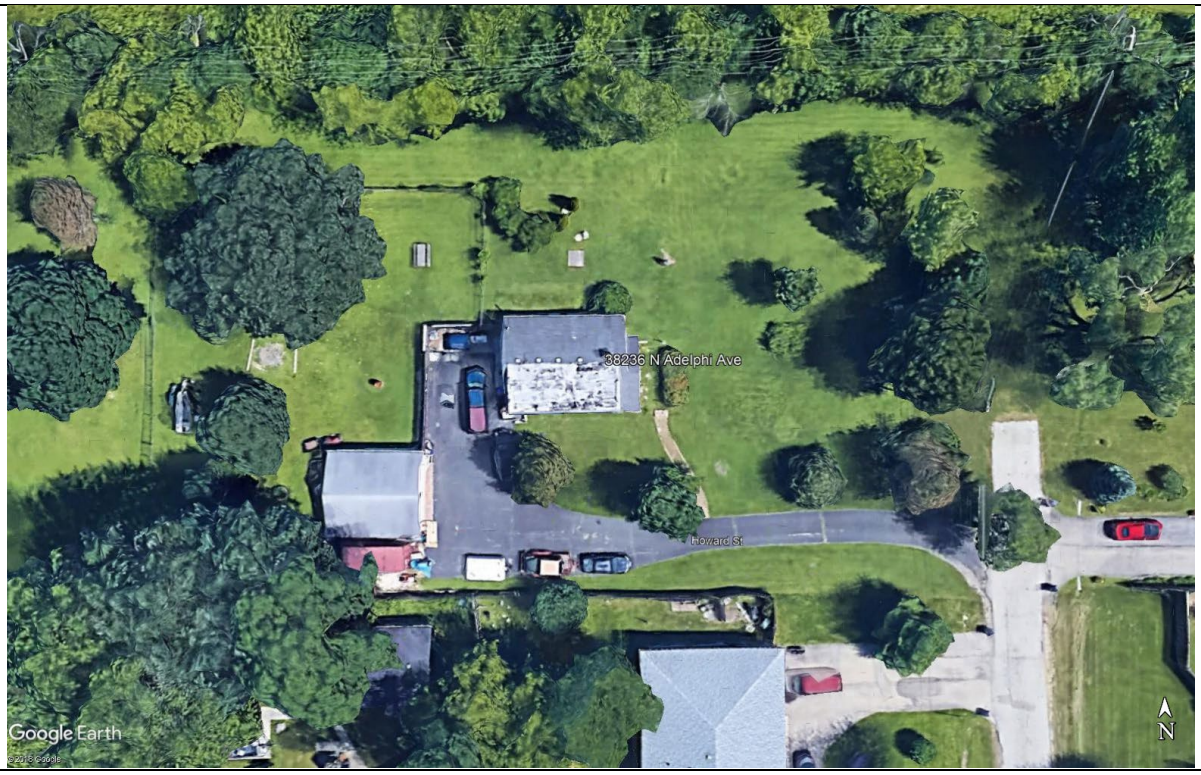
Structure Number: Parcel 0431305008; Address: 38236 N Adelphi Ave; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431305008; Address: 38236 N Adelphi Ave; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431305008; Address: 38236 N Adelphi Ave; Camera Facing: West; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431305008; Address: 38236 N Adelphi Ave; Camera Facing: Overhead; Date: 2019, Source: Google

II

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 38235 N Adelphi Ave	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0431306010	Taxpayer: Esparanza Santos
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 18 years	



Structure Number: Parcel 0431306010; Address: 38235 N Adelphi Ave; Camera Facing: Northeast; Date: July 2012

II



Structure Number: Parcel 0431306010; Address: 38235 N Adelphi Ave; Camera Facing: Overhead; Date: 2019

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 38455 N Green Bay Rd	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0431301004	Taxpayer: Grady E Nesmith
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 33 years	



Structure Number: Parcel 0431301004; Address: 38455 N Green Bay Rd; Camera Facing: East; Date: October 2018

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 38479 & 38481 N Green Bay Rd	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0431301001 & 0431301002	Taxpayer: Grady E Nesmith
Acquisition: Fee Simple	Improvements: Vacant
Age of Structure: **59 years**	



Structure Number: Parcel 0431301001; Address: 38481 N Green Bay Rd; Camera Facing: South; Date: August 2015, Source: Google



Structure Number: Parcel 0431301001; Address: 38481 N Green Bay Rd; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431301001; Address: 38481 N Green Bay Rd; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431301001; Address: 38481 N Green Bay Rd; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431301001; Address: 38481 N Green Bay Rd; Camera Facing: West; Date: April 2019, Source: nearmap

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 38507 & 38517 N Green Bay Rd	City: Beach Park, IL
County: Lake	Photographer: Google
Parcel Number: 0431132005 & 0431132004	Taxpayer: Michael G Malombo Sr
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: 21 years	



Structure Number: Parcel 0431132005; Address: 38507 N Green Bay Rd; Camera Facing: North; Date: August 2015

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12582 W Beach Rd	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0431132008	Taxpayer: Robert L & Ruthann Davis
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **59 years**	



Structure Number: Parcel 0431132008; Address: 12582 W Beach Rd; Camera Facing: North; Date: August 2015, Source: Google

OO



Structure Number: Parcel 0431132008; Address: 12582 W Beach Rd; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431132008; Address: 12582 W Beach Rd; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431132008; Address: 12582 W Beach Rd; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431132008; Address: 12582 W Beach Rd; Camera Facing: West; Date: April 2019, Source: nearmap

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 12562 W Beach Rd	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0431132009	Taxpayer: Robert J Kielp
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **66 years**	



Structure Number: Parcel 0431132009; Address: 12562 W Beach Rd; Camera Facing: North; Date: August 2015, Source: Google



Structure Number: Parcel 0431132009; Address: 12562 W Beach Rd; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431132009; Address: 12562 W Beach Rd; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431132009; Address: 12562 W Beach Rd; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0431132009; Address: 12562 W Beach Rd; Camera Facing: West; Date: April 2019, Source: nearmap

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 2326 W Wadsworth Rd	City: Waukegan, IL
County: Lake	Photographer: Bing , Google and nearmap
Parcel Number: 0429302007	Taxpayer: JLB LLC
Acquisition: Fee Simple	Improvements: Commercial
Age of Structure: **85 years**	



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: North; Date: 2019, Source: Bing



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: West; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: West; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: Northwest; Date: 2019, Source: Google



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: West; Date: 2019, Source: Google



Structure Number: Parcel 0429302007; Address: 2326 W Wadsworth Rd; Camera Facing: Overhead; Date: 2019, Source: Google

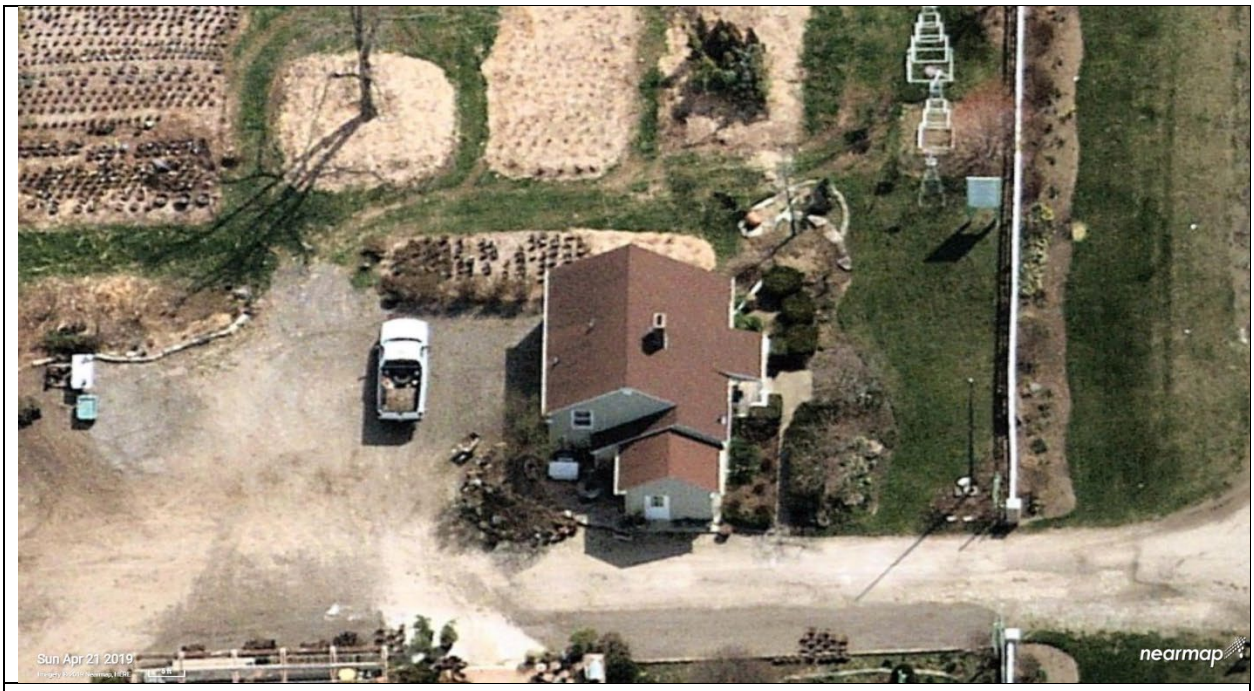
WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 2228 W Wadsworth Rd	City: Waukegan, IL
County: Lake	Photographer: Bing, Google, & nearmap
Parcel Number: 0429302008	Taxpayer: Vito & Viola Manrantonia
Acquisition: Fee Simple	Improvements: Commercial
Age of Structure: **82 years**	



Structure Number: Parcel 0429302007; Address: 2228 W Wadsworth Rd; Camera Facing: North; Date: 2019, Source: Bing



Structure Number: Parcel 0429302008; Address: 2228 W Wadsworth Rd; Camera Facing: Overhead; Date: 2019, Source: Google



Structure Number: Parcel 0429302008; Address: 2228 W Wadsworth Rd; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302008; Address: 2228 W Wadsworth Rd; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302008; Address: 2228 W Wadsworth Rd; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302008; Address: 2228 W Wadsworth Rd; Camera Facing: West; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302008; Address: 2228 W Wadsworth Rd; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302008; Address: 2228 W Wadsworth Rd; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302008; Address: 2228 W Wadsworth Rd; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302008; Address: 2228 W Wadsworth Rd; Camera Facing: West; Date: April 2019, Source: nearmap

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 11700 W Wadsworth Rd	City: Waukegan, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0429302030	Taxpayer: Edward L Swartz
Acquisition: Fee Simple	Improvements: Residential
Age of Structure: **136 years**	



Structure Number: Parcel 0429302030; Address: 11700 W Wadsworth Rd; Camera Facing: Northeast; Date: 2019



Structure Number: Parcel 0429302030; Address: 11700 W Wadsworth Rd; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302030; Address: 11700 W Wadsworth Rd; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429302030; Address: 11700 W Wadsworth Rd; Camera Facing: South; Date: April 2019, Source: nearmap

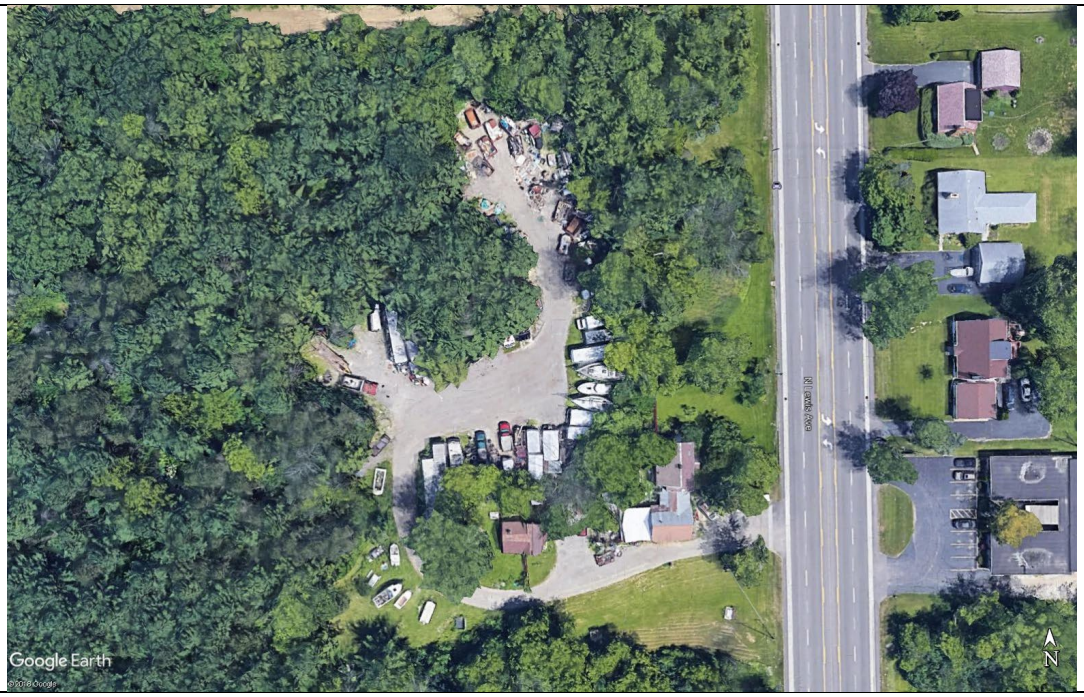


Structure Number: Parcel 0429302030; Address: 11700 W Wadsworth Rd; Camera Facing: West; Date: April 2019, Source: nearmap

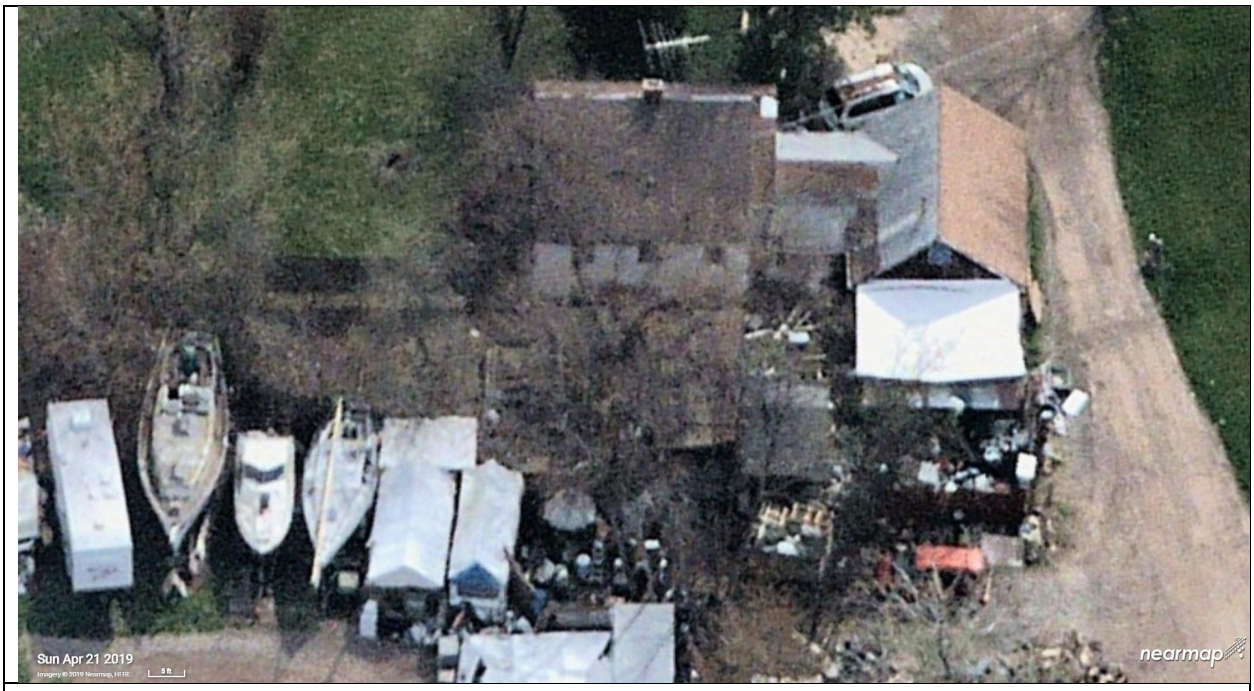
WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 4228 N Lewis Ave	City: Waukegan, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0429302010	Taxpayer: John R Swartz
Acquisition: Fee Simple	Improvements: Commercial
Age of Structure: **83 years**	



Structure Number: Parcel 0429302010; Address: 4228 N Lewis Ave; Camera Facing: West; Date: August 2017



Structure Number: Parcel 0429302010; Address: 4228 N Lewis Ave; Camera Facing: Overhead; Date: 2019



Structure Number: Parcel 0429302010; Address: 4228 N Lewis Ave; Camera Facing: East; Date: April 2019; Source: nearmap



Structure Number: Parcel 0429302010; Address: 4228 N Lewis Ave; Camera Facing: North; Date: April 2019; Source: nearmap

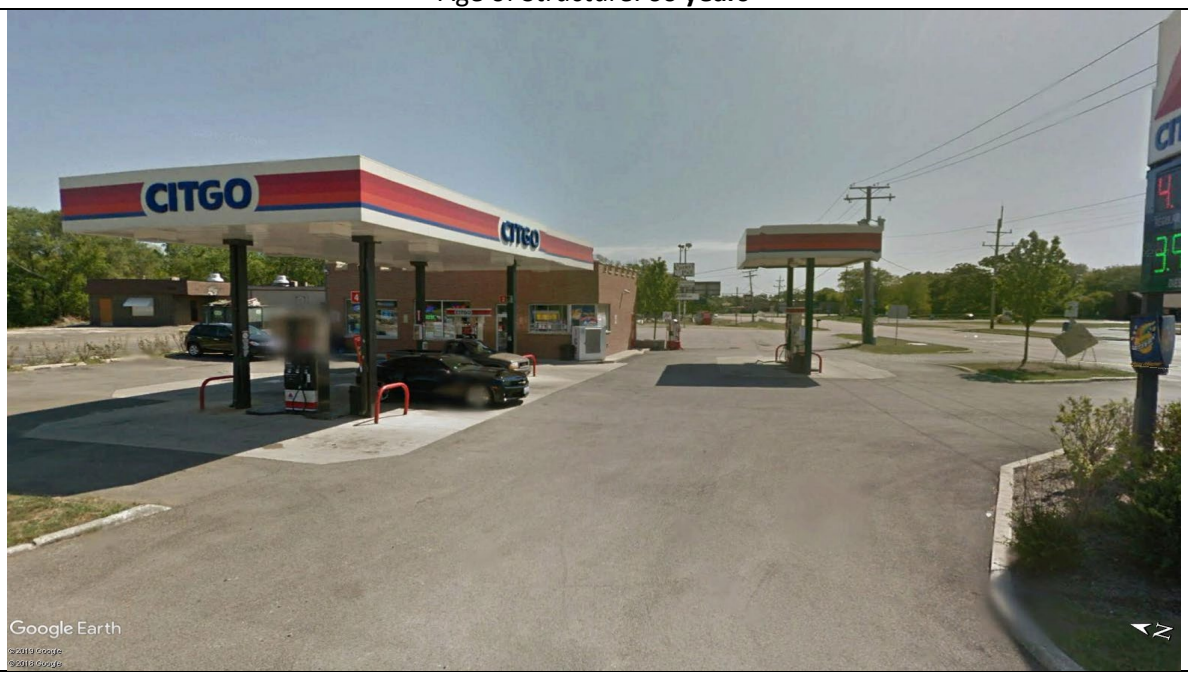


Structure Number: Parcel 0429302010; Address: 4228 N Lewis Ave; Camera Facing: South; Date: April 2019; Source: nearmap



Structure Number: Parcel 0429302010; Address: 4228 N Lewis Ave; Camera Facing: West; Date: April 2019; Source: nearmap

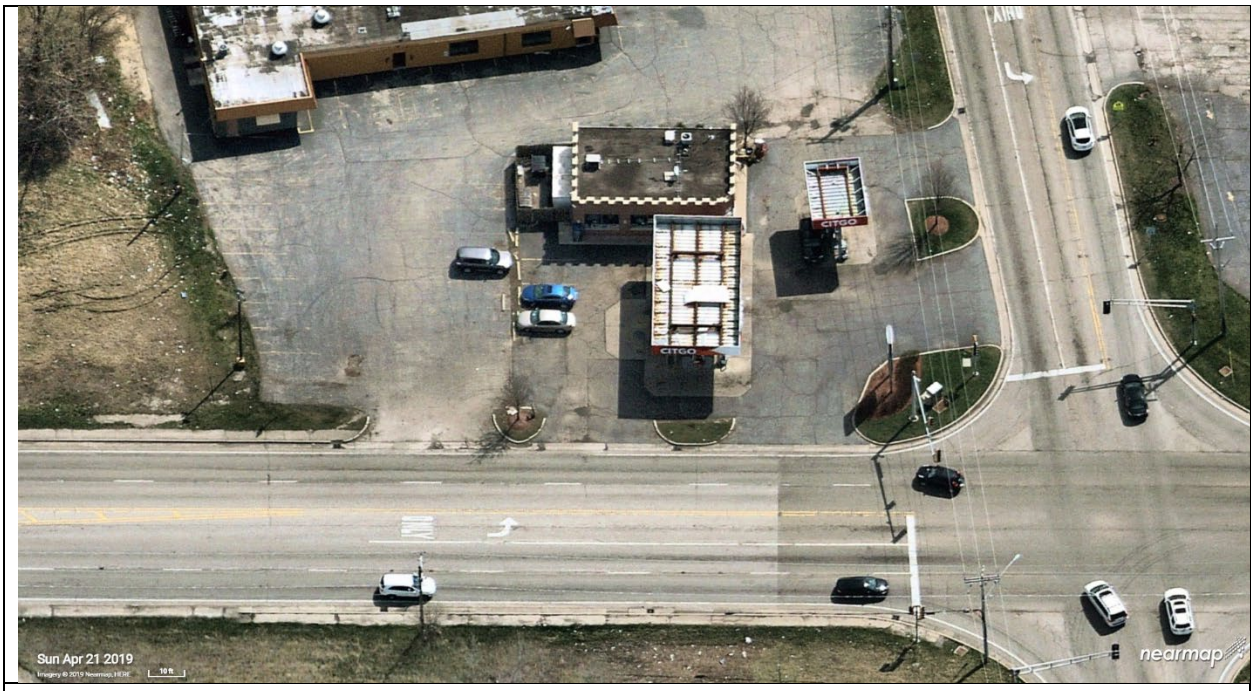
WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 39039 N Lewis Ave	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0429401116	Taxpayer: Keralite Oil, Inc
Acquisition: Fee Simple	Improvements: Commercial
Age of Structure: **66 years**	



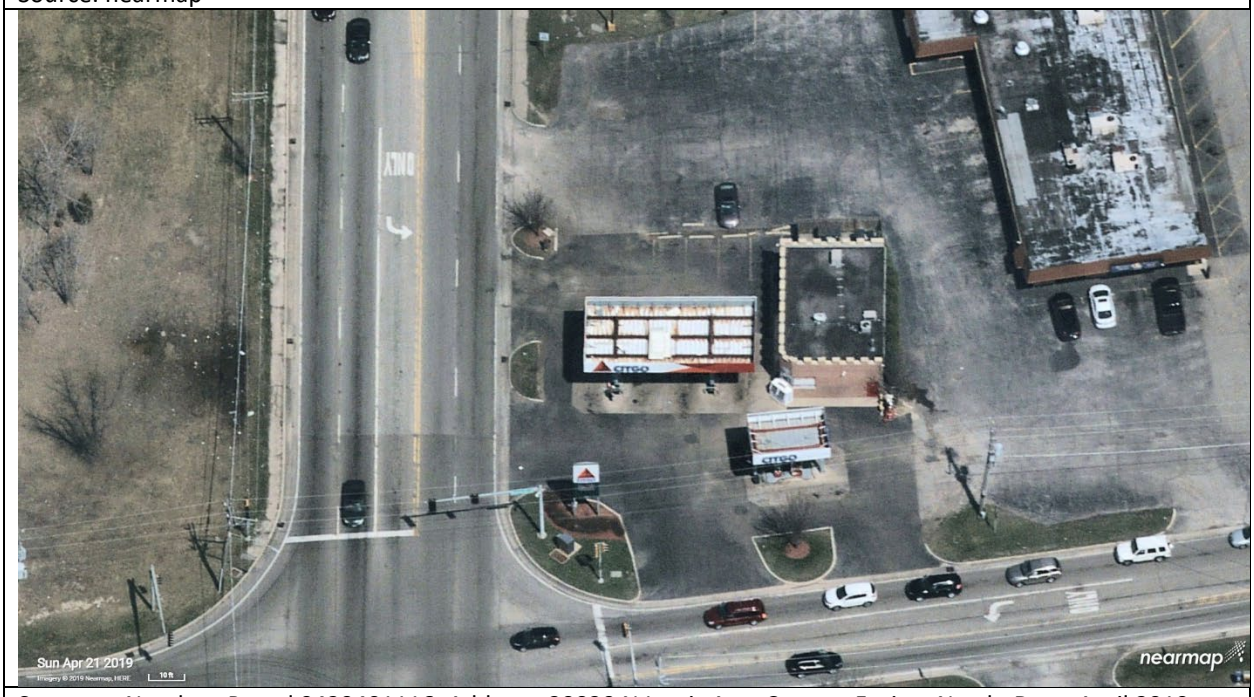
Structure Number: Parcel 0429401116; Address: 39039 N Lewis Ave; Camera Facing: East; Date: 2019, Source: Google



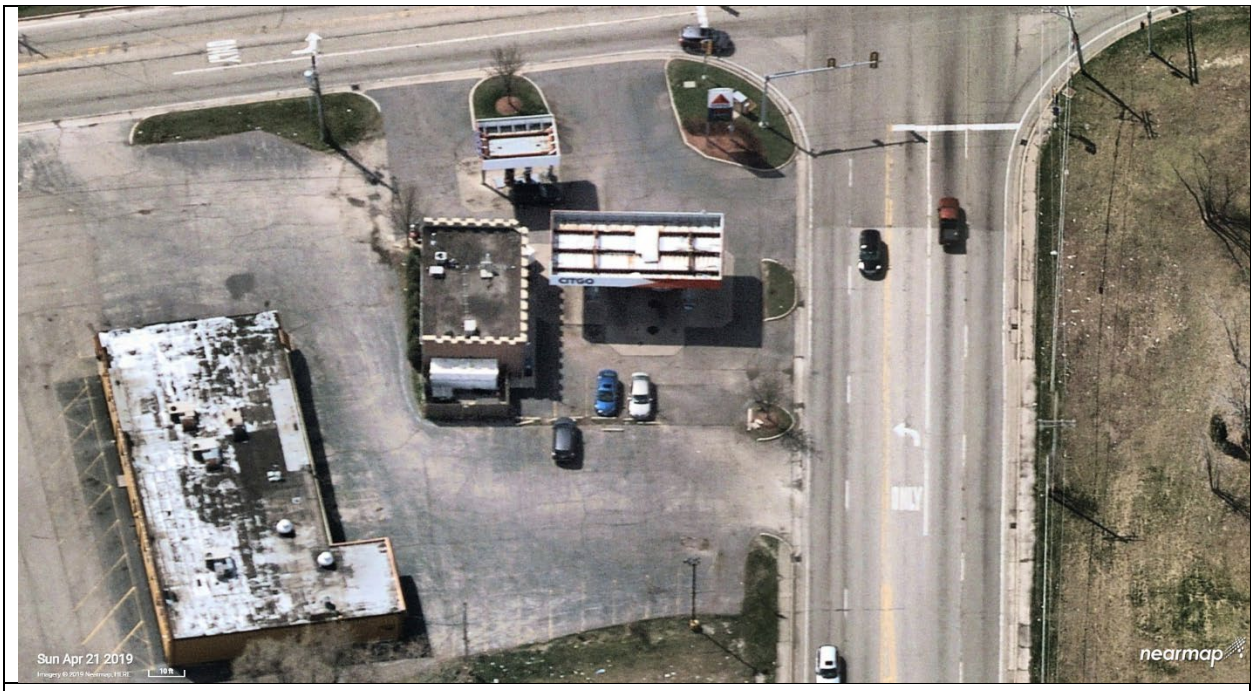
Structure Number: Parcel 0429401116; Address: 39039 N Lewis Ave; Camera Facing: North; Date: 2019, Source: Google



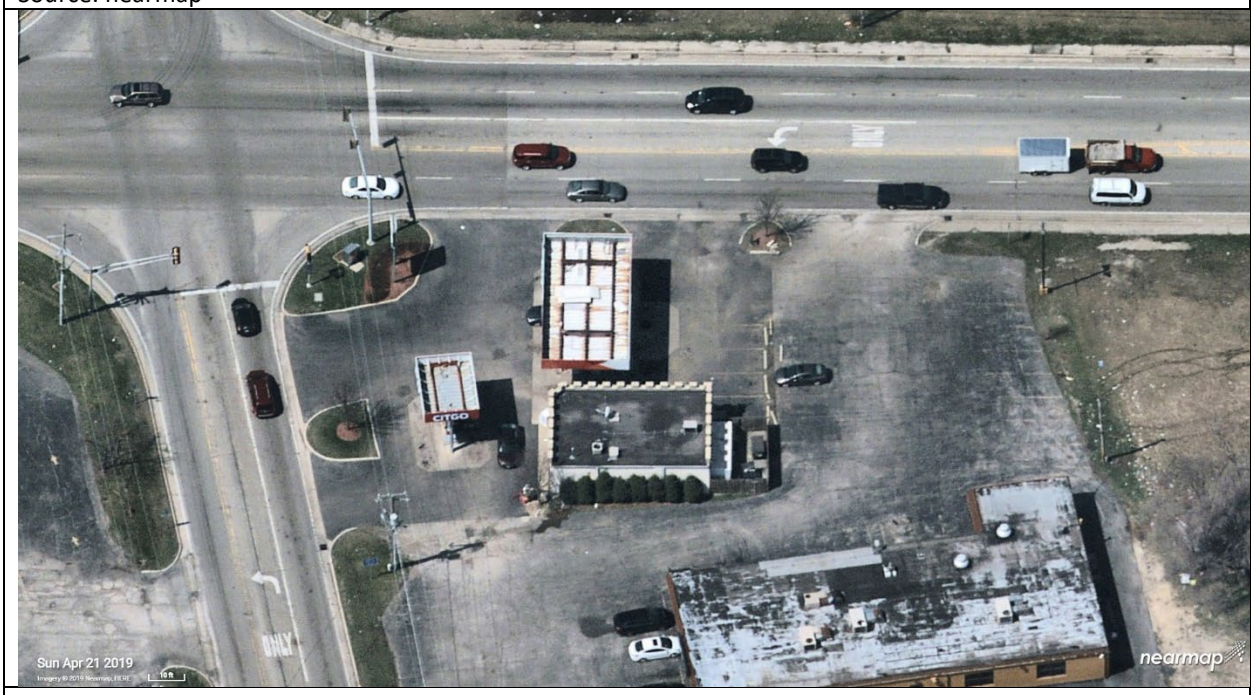
Structure Number: Parcel 0429401116; Address: 39039 N Lewis Ave; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429401116; Address: 39039 N Lewis Ave; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429401116; Address: 39039 N Lewis Ave; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429401116; Address: 39039 N Lewis Ave; Camera Facing: West; Date: April 2019, Source: nearmap

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 11456 W Wadsworth Rd	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0429401121	Taxpayer: Jose J & Rosy Giles
Acquisition: Fee Simple	Improvements: Commercial
Age of Structure: **50 years**	



Structure Number: Parcel 0429401121; Address: 11456 W Wadsworth Rd; Camera Facing: East; Date: 2019, Source: Google



Structure Number: Parcel 0429401121; Address: 11456 W Wadsworth Rd; Camera Facing: North; Date: 2019, Source: Google



Structure Number: Parcel 0429401121; Address: 11456 W Wadsworth Rd; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429401121; Address: 11456 W Wadsworth Rd; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429401121; Address: 11456 W Wadsworth Rd; Camera Facing: South; Date: April 2019, Source: nearmap



Structure Number: Parcel 0429401121; Address: 11456 W Wadsworth Rd; Camera Facing: West; Date: April 2019, Source: nearmap

WAUKEGAN NATIONAL AIRPORT HISTORIC STRUCTURES REVIEW	
Address: 38975 N Lewis Ave	City: Beach Park, IL
County: Lake	Photographer: Google & nearmap
Parcel Number: 0432200063	Taxpayer: Bank Of Waukegan/Gladstone Square Inc
Acquisition: Fee Simple	Improvements: Commercial
Age of Structure: **Unknown**	



Structure Number: Parcel 0432200063; Address: 38975 N Lewis Ave; Camera Facing: East; Date: 2019, Source: Google



Structure Number: Parcel 0432200063; Address: 38975 N Lewis Ave; Camera Facing: East; Date: April 2019, Source: nearmap



Structure Number: Parcel 0432200063; Address: 38975 N Lewis Ave; Camera Facing: North; Date: April 2019, Source: nearmap



Structure Number: Parcel 0432200063; Address: 38975 N Lewis Ave; Camera Facing: South; Date: April 2019, Source: nearmap

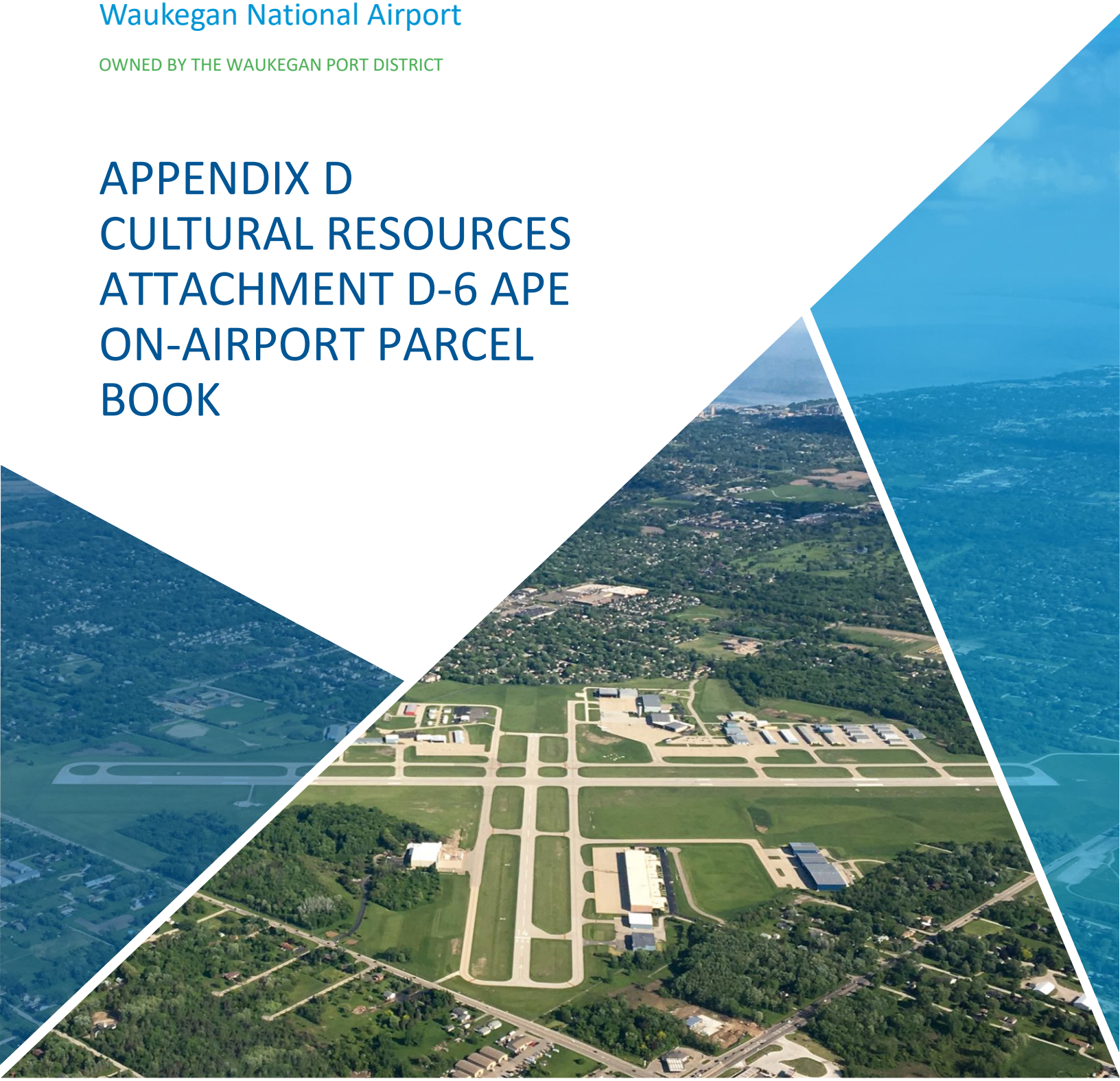


Structure Number: Parcel 0432200063; Address: 38975 N Lewis Ave; Camera Facing: West; Date: April 2019, Source: nearmap

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-6 APE
ON-AIRPORT PARCEL BOOK



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

HISTORIC STRUCTURES REVIEW
Airport Buildings and Airport Landscape Views

Waukegan National Airport
Construction of a Replacement Runway 5/23 and Associated Actions

Beach Park and Waukegan, Lake County, IL

June 3, 2020
Crawford, Murphy & Tilly, Inc.

Airport Building 1	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NW	Date of Photo: 5/8/2020



Airport Building 2	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SW	Date of Photo: 5/8/2020



Airport Building 3	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NE	Date of Photo: 5/8/2020



Airport Building 4	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NE	Date of Photo: 5/8/2020



Airport Building 5	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SW	Date of Photo: 5/8/2020



Airport Building 6	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NE	Date of Photo: 5/8/2020



Airport Building 7	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NE	Date of Photo: 5/8/2020



Airport Building 8	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NE	Date of Photo: 5/8/2020



Airport Building 9	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SW	Date of Photo: 5/8/2020



Airport Building 10	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NE	Date of Photo: 5/8/2020



Airport Building 11	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: W	Date of Photo: 5/8/2020



Airport Building 12	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SE	Date of Photo: 5/8/2020



Airport Building 13	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SE	Date of Photo: 5/8/2020



Airport Building 14	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NE	Date of Photo: 5/8/2020



Airport Building 15	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: E	Date of Photo: 5/8/2020



Airport Building 16	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SE	Date of Photo: 5/8/2020



Airport Building 17	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 18	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 19	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 20	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 21	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 22	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SW	Date of Photo: 5/8/2020



Airport Building 23	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NW	Date of Photo: 5/8/2020



Airport Building 24	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: S	Date of Photo: 5/8/2020



Airport Building 25	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: W	Date of Photo: 5/8/2020



Airport Building 26	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: W	Date of Photo: 5/8/2020



Airport Building 27	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 28	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 29	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: S	Date of Photo: 5/8/2020



Airport Building 30	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: S	Date of Photo: 5/8/2020



Airport Building 31	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SE	Date of Photo: 5/8/2020



Airport Building 32	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SW	Date of Photo: 5/8/2020



Airport Building 33	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 34	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: E	Date of Photo: 5/8/2020



Airport Building 35	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 36	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: W	Date of Photo: 5/8/2020



Airport Building 37	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: W	Date of Photo: 5/8/2020



Airport Building 38	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: S	Date of Photo: 5/8/2020



Airport Building 39	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: W	Date of Photo: 5/8/2020



Airport Building 40	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 41	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: S	Date of Photo: 5/8/2020



Airport Building 42	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: S	Date of Photo: 5/8/2020



Airport Building 43	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NE	Date of Photo: 5/8/2020



Airport Building 44	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View:	Date of Photo: 5/8/2020



Airport Building 45	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 46	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NW	Date of Photo: 5/8/2020



Airport Building 47	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: E	Date of Photo: 5/8/2020



Airport Building 48	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: E	Date of Photo: 5/8/2020



Airport Building 49	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: N	Date of Photo: 5/8/2020



Airport Building 50	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SW	Date of Photo: 5/8/2020



Airport Building 51	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SW	Date of Photo: 5/8/2020



Airport Building 52	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SE	Date of Photo: 5/8/2020



Airport Building 53	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SW	Date of Photo: 5/8/2020



Airport Building 54	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: W	Date of Photo: 5/8/2020



Airport Building 55	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: W	Date of Photo: 5/8/2020



Airport Building 56	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: W	Date of Photo: 5/8/2020



Airport Landscape- Buildings 1-11	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: SE	Date of Photo: 5/22/2020



Airport Landscape- Buildings 12-17	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View:	Date of Photo: 5/22/2020



Airport Landscape- Buildings 18-42	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View:	Date of Photo: 5/22/2020



Airport Landscape- Buildings 43-48	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View:	Date of Photo: 5/22/2020



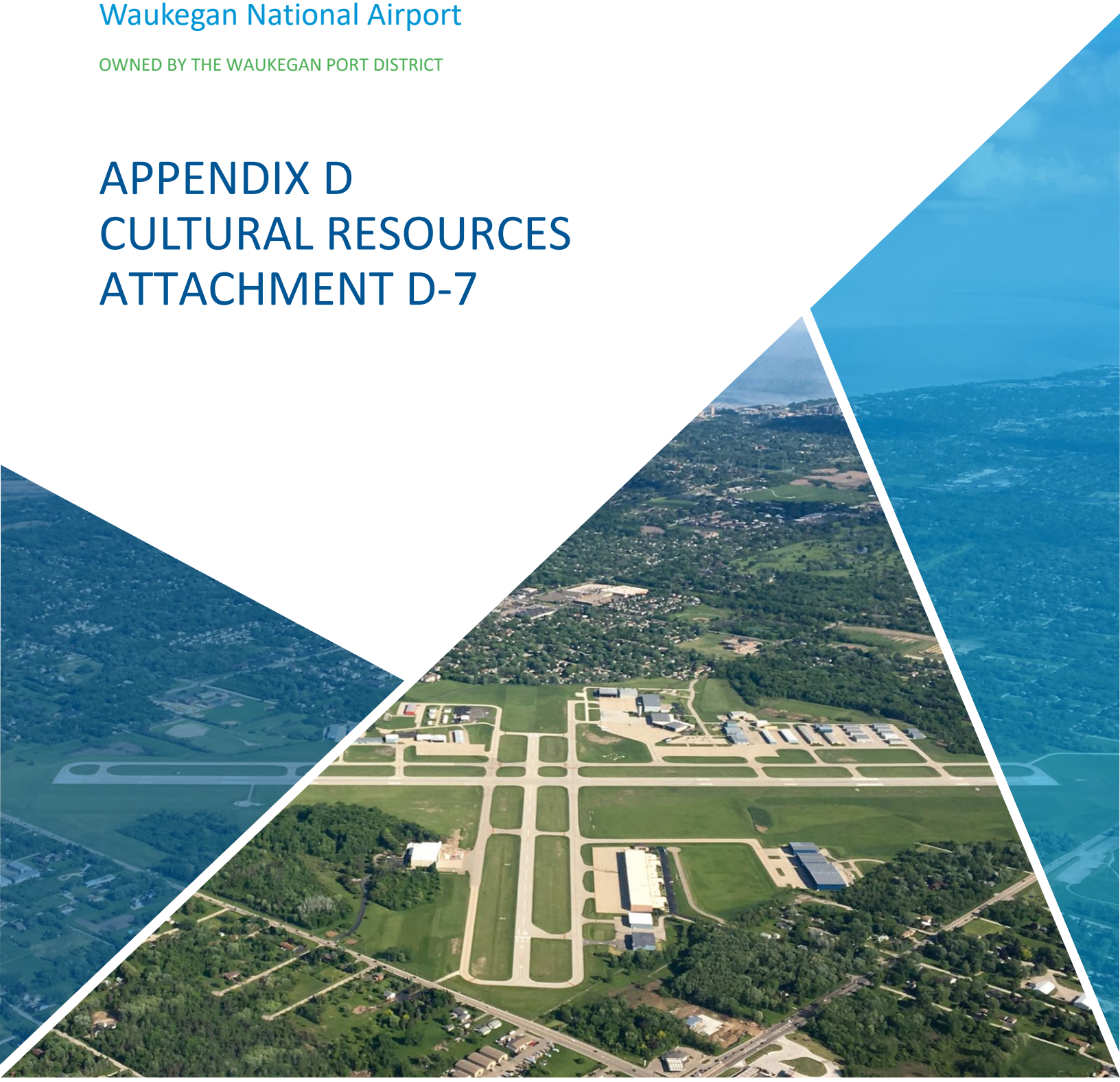
Airport Landscape- Buildings 50-57	
Address: Waukegan National Airport	City: Waukegan, IL
County: Lake	Photographer: Michael Zonsius, CMT, Inc.
Direction of View: NE	Date of Photo: 5/22/2020



Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-7

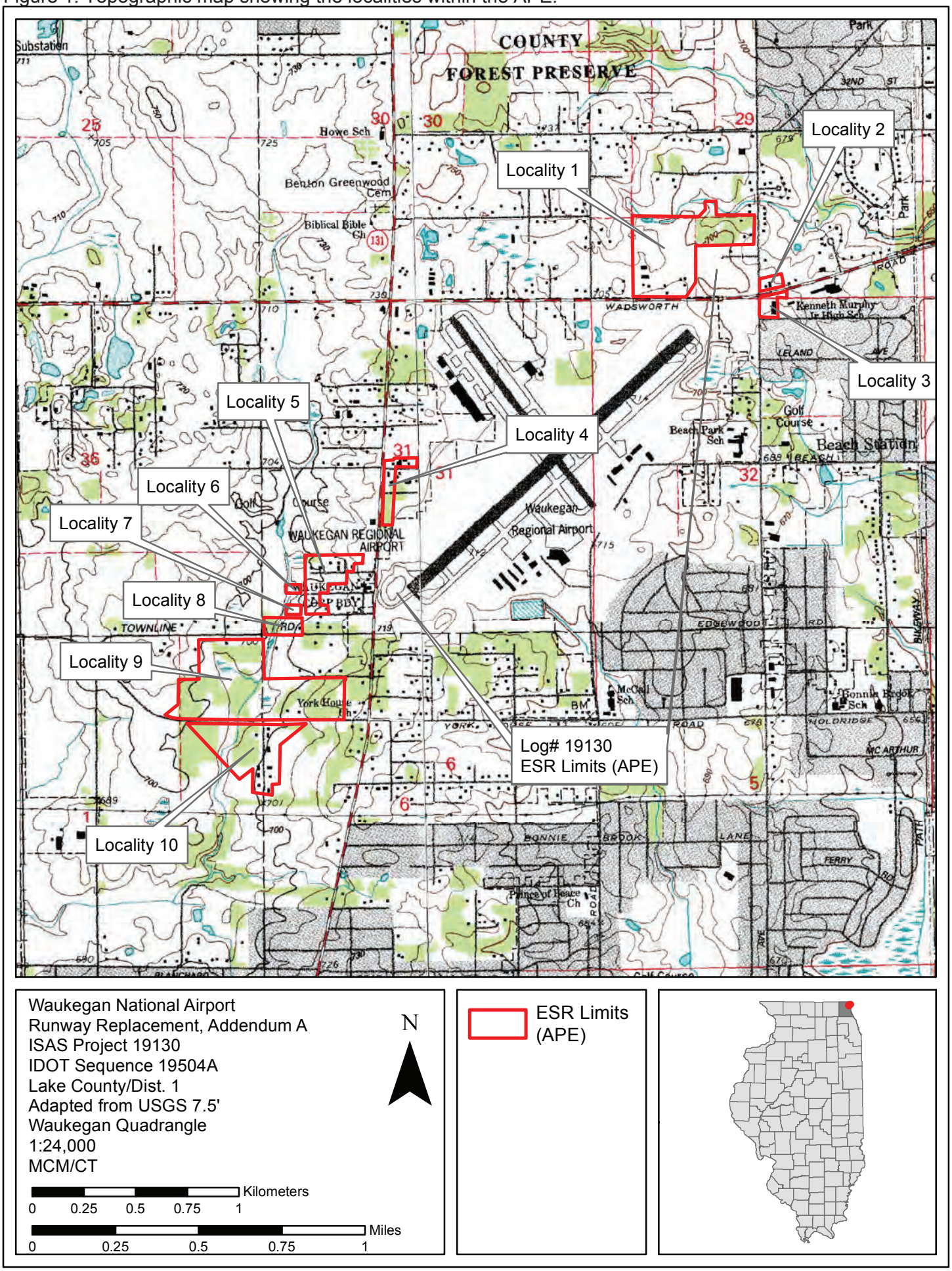


WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

Figure 1: Topographic map showing the localities within the APE.



Waukegan National Airport
Runway Replacement, Addendum A
ISAS Project 19130
IDOT Sequence 19504A
Lake County/Dist. 1
Adapted from USGS 7.5'
Waukegan Quadrangle
1:24,000
MCM/CT

N

Kilometers
0 0.25 0.5 0.75 1

Miles
0 0.25 0.5 0.75 1

ESR Limits (APE)

Figure 2.1: Aerial image showing areas requiring survey and areas of urban disturbance.

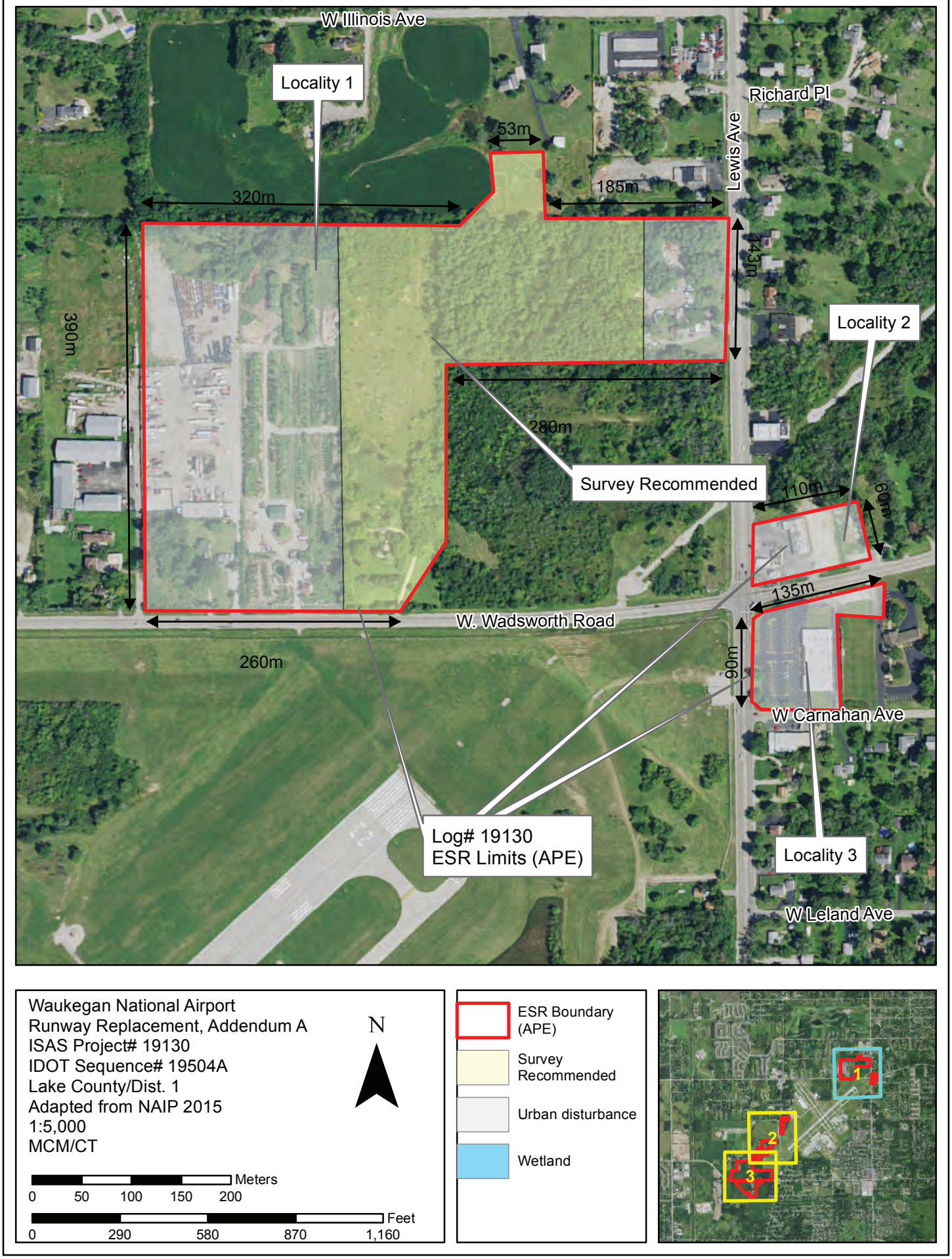


Figure 2.2: Aerial image showing areas requiring survey and areas of urban disturbance.

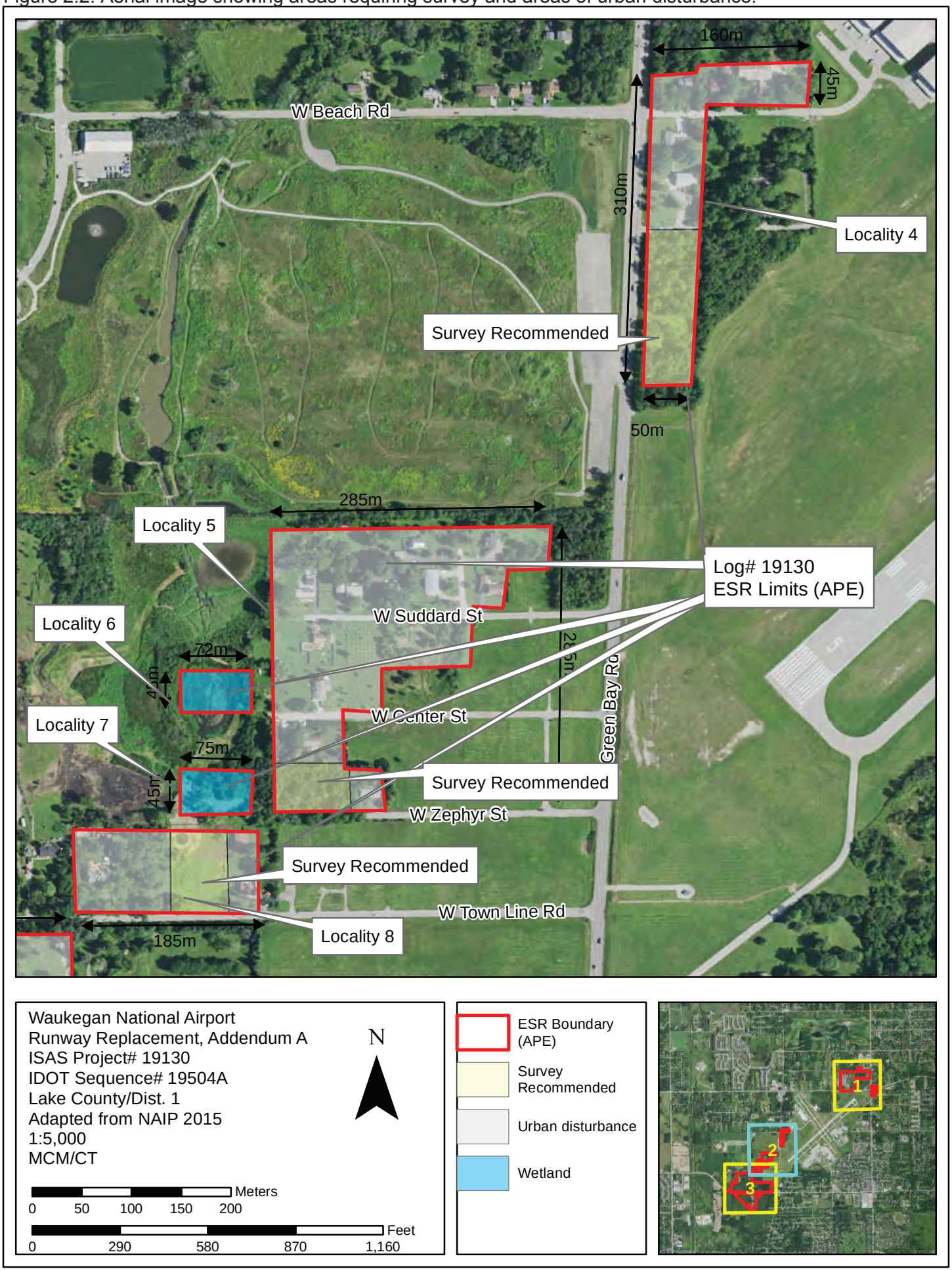
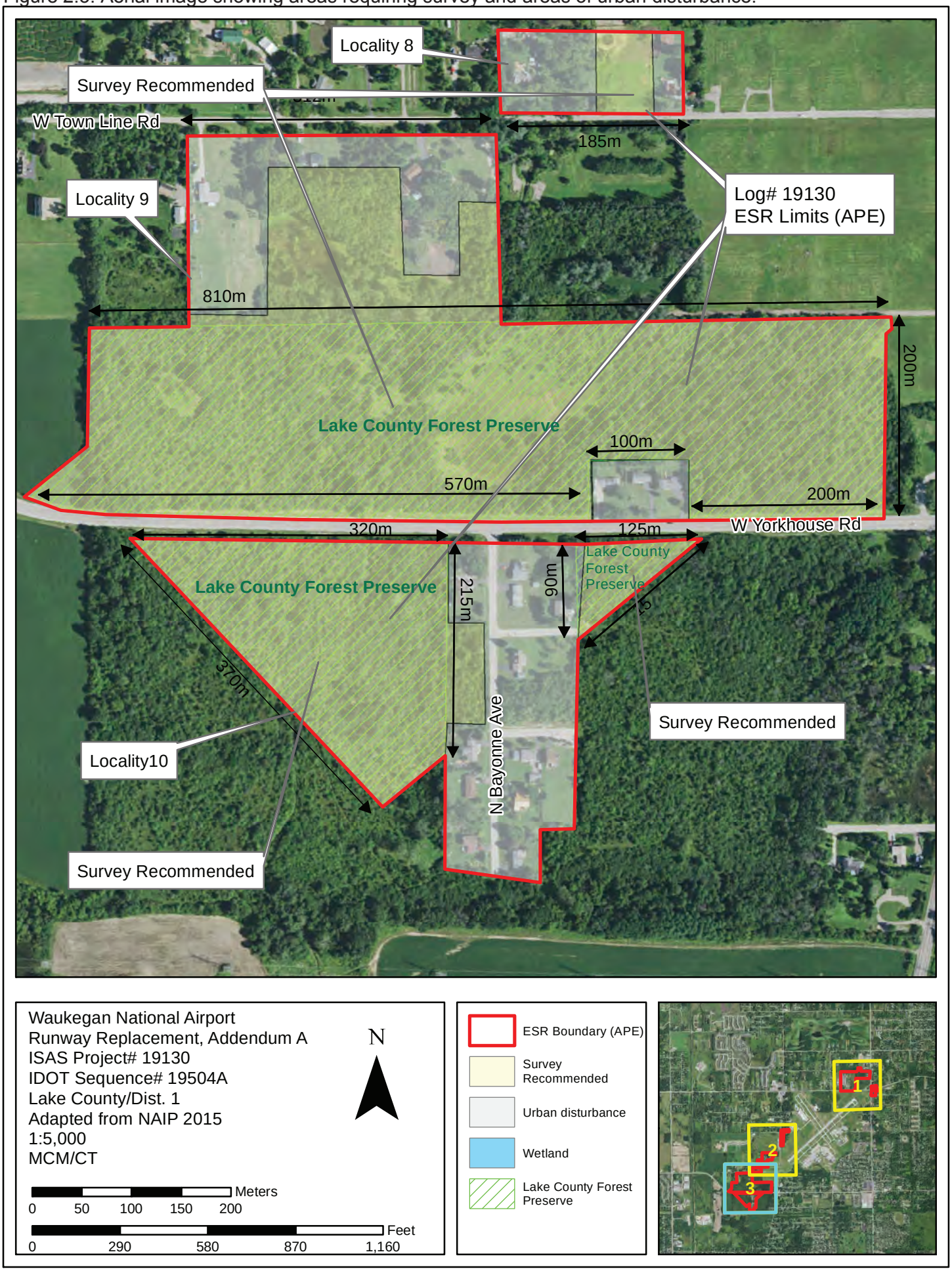


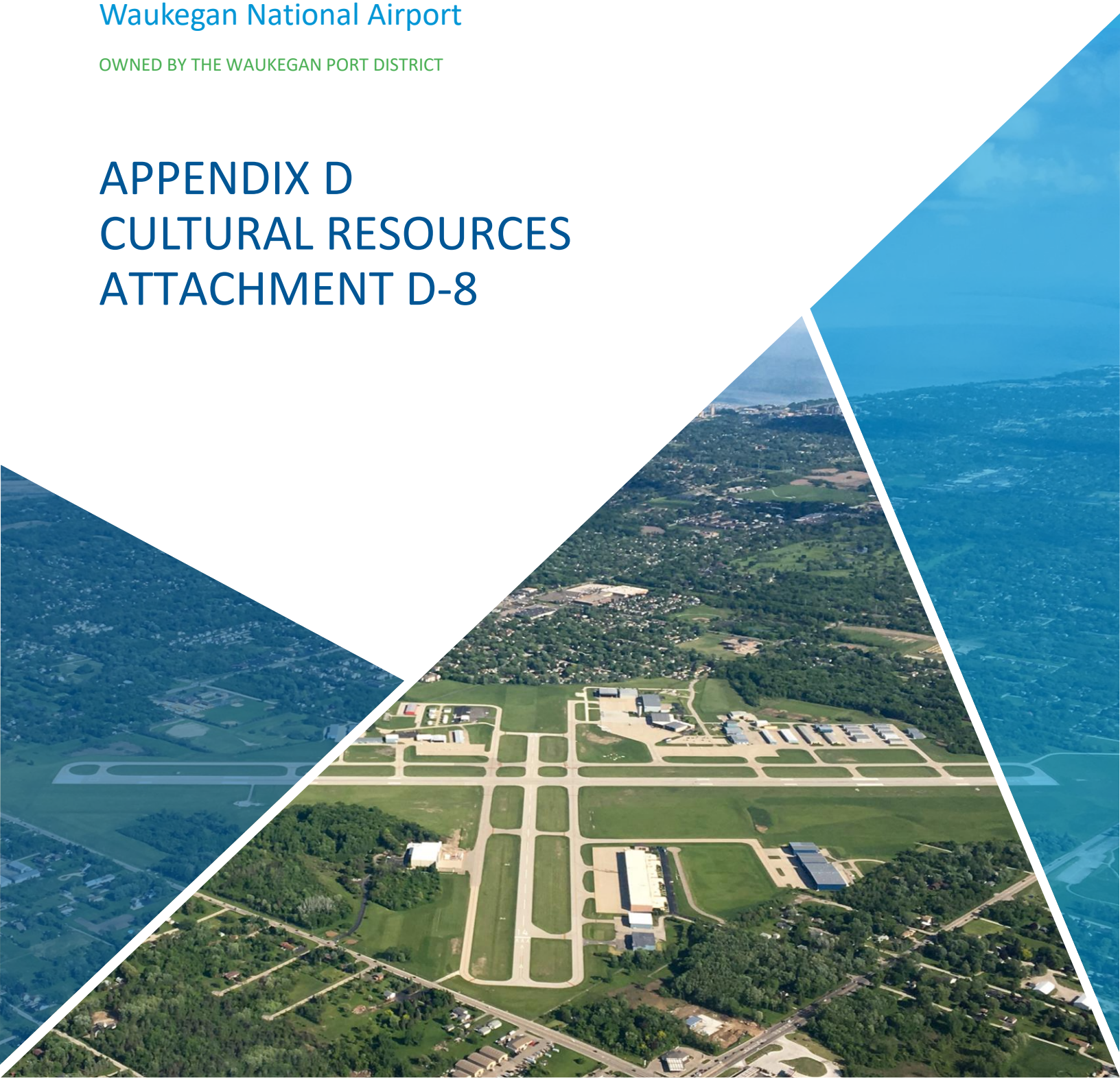
Figure 2.3: Aerial image showing areas requiring survey and areas of urban disturbance.



Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-8



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

RECEIVED
MAY – 5 2020
PRESERVATION SERVICES

Lake County
Waukegan
Waukegan National Airport
Runway Improvements
IDOT Sequence #19504A
ISAS Log #19130
SHPO Log #001061615

May 5, 2020

IHPA REVIEW
H/A
AC CONCUR JDK 5/8/20
AR
File

FEDERAL – SECTION 106 PROJECT

Conditional No Adverse Effect – Archaeology Only

Ms. Carol J. Wallace
Cultural Resources Coordinator
Illinois State Historic Preservation Office
Illinois Department of Natural Resources
1 Old State Capitol Plaza
Springfield, Illinois 62701

Dear Ms. Wallace:

In ongoing consultation with your office for the above referenced undertaking, the Illinois Department of Transportation (IDOT) in coordination with the Federal Aviation Administration (FAA) plans to extend runways and runway protection zones at the Waukegan National Airport. A review of known archaeological resources has been completed, and a review of architectural resources is underway. The identification and evaluation of architectural resources will be coordinated with your office separately.

Enclosed are copies of the archaeological survey short report completed by Illinois State Archaeological Survey (ISAS) personnel concerning archaeological resources potentially impacted by the above referenced undertaking. Review of the 145.02-acre Area of Potential Effect (APE), divided into 10 localities, resulted in the identification no known archaeological sites and documentation of a land-use history dominated by development and ground disturbance. The ISAS survey team identified parcels within six localities that appear to largely undisturbed, and thus, warranted field survey when access could be secured.

Therefore, in coordination with the FAA, IDOT requests the concurrence of the State Historic Preservation Officer (SHPO) in our finding of No Adverse Effect to archaeological properties, provided that field surveys are completed for the identified parcels within the six localities and the results are coordinated with your office.

Sincerely,

Brad H. Koldehoff
Cultural Resources Unit Chief
Bureau of Design & Environment

CONCUR
By: Robert Appleman
Deputy State Historic Preservation Officer
Date: 5-22-2020

Illinois Department of Transportation

Memorandum

To:	Alan Mlacnik	Attn:	Richard Borus
From:	Jack Elston	By:	Brad Koldehoff
Subject:	Cultural Resources – Further SHPO Coordination Required		
Date:	September 3, 2020		

Lake County
Waukegan
Waukegan National Airport
Runway Improvements
IDOT Sequence #19504A
SHPO Log #001061615

Pursuant to Section 106 of the National Historic Preservation Act of 1966, further coordination with the Illinois State Historic Preservation Officer (SHPO) is required before final cultural resource clearance can be issued for the above referenced project. The attached correspondence documents SHPO concurrence with our findings of "No Historic Properties Effected" to historic architectural resources and "No Adverse Effect to Archaeological resources. SHPO concurrence is provisional on the following conditions:

- Archaeological Field Survey is conducted at six undisturbed localities when access can be secured (see attached maps), and the results are coordinated with the SHPO.

As requested this project is cleared for Design Approval for cultural resources, but it is NOT cleared for letting.

To receive clearance for letting, the Waukegan National Airport must secure access to the six locations requiring archaeological survey. If any NRHP eligible archaeological sites are identified and adverse effects to these sites cannot be avoided, then a Memorandum of Agreement (MOA) must be developed that stipulates how the adverse impacts will be mitigated.

Cultural resource coordination for this project will not be complete until the above noted work and SHPO consultation is complete.

My office will coordinate the archaeological survey with the SHPO. When access to the properties has been secured, please coordinate with my office.

Brad Koldehoff

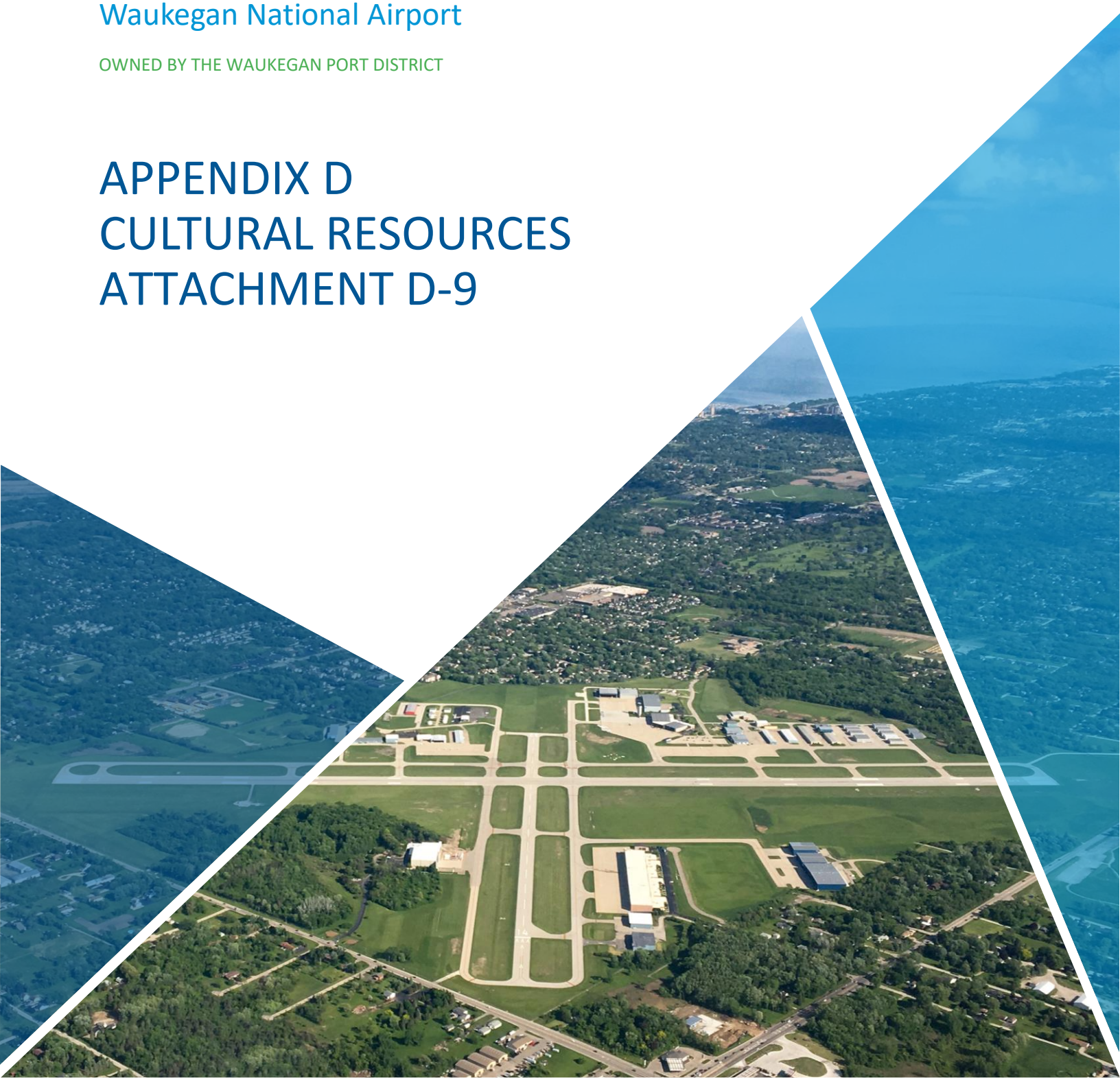
Brad H. Koldehoff, RPA
Cultural Resources Unit, Bureau of Design and Environment

BK:br

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-9



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

U.S. Department
of Transportation
Federal Aviation Administration

Great Lakes Region
Illinois, Indiana, Michigan,
Minnesota, North Dakota,
Ohio, South Dakota,
Wisconsin

Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, Illinois 60018

April 26, 2022

Ms. Carol J. Wallace
Head of Regulatory Review & Compliance
State Historic Preservation Office
IDNR – One Natural Resources Way
Springfield, IL 62701

RE: SHPO Log #001061615

Ms. Wallace:

In ongoing consultation with your office for the above referenced undertaking, Waukegan National Airport plans to relocate and extend Runway 5/23. The archaeological survey has been completed for this undertaking. Potential impacts to architectural resources have been previously coordinated with your office by the Illinois Department of Transportation Bureau of Aeronautics.

The attached revised archaeological survey short report was completed by Illinois State Archaeological Survey (ISAS) personnel. Survey of the 145.02-acre Area of Potential Effect (APE), divided into 10 localities, resulted in the identification one archaeological site (11L967). This site does not warrant National Register consideration because it lacks information potential.

Therefore, the FAA requests your concurrence in our finding of No Historic Properties Affected for archaeological resources.

If you have any questions, please call Bobb Beauchamp at (847) 294-7364.

Sincerely,

Amy B. Hanson

Amy B. Hanson
Environmental Protection Specialist
Chicago Airports District Office
Federal Aviation Administration

Cc: Skip Goss, Waukegan National Airport
Bobb Beauchamp, FAA
Heather Lacey, CMT
Terry Schaddel, CMT

ARCHAEOLOGICAL SURVEY SHORT REPORT
State Historic Preservation Office
Old State Capital Building
Springfield, Illinois 62071 (217/785-4997)

Reviewer_____
Date _____
_____ **Accepted** _____**Rejected**
SHPO USE ONLY (Form ASSR0889)

SHPO LOG NUMBER _____

LOCATIONAL INFORMATION AND SURVEY CONDITIONS:

ISAS LOG: 19130 **Addendum** A

Tribal Notification Date: 12/16/2019
Comment Period End Date: 1/30/2020

IDOT Sequence No.: **19504A**
Funding or Permitting Agency: FAA

Project Title: Waukegan National Airport Runway Replacement Addendum A

District #: 1
County: Lake
Quad: Waukegan

UTM:

Z16 N4695346 E427253 Southern point of APE,
Z16 N4695751 E426750 Western point of APE,
Z16 N4698156 E429474 Northern point of APE,
Z16 N4697706 E429813 Eastern point of APE

Township	Range	Section
46N	12E	29, 31, 32
45N	11E	1
45N	12E	6

Natural Division: 03A Morainal Section of the Northeastern Morainal Division

Project Description: The proposed project consists of replacing Runway 5/23, including the relocation of N. Green Bay Road and W. Yorkhouse Road, land acquisition, and ancillary projects.

Topography The APE traverses uplands to the west of Lake Michigan.

Land Use/ GroundCover: (Include % Visibility) Archival research determined that approximately 41% (48.1 acres/ 194,654 m^2) of the APE is disturbed by urban development with 0% visibility. Approximately 43% (61.7 acres/ 249,627 m^2) was in timber or grass with 0% visibility. Approximately 12% (17.7 acres/ 64,489 m^2) was in current or former wetlands with 0% visibility.

Survey Limitations: Access was denied to 4% (5.21 acres/21,096m^2) of the APE, of which 2.3% (3.3 acres/13,514m^2) was not amenable to survey by visual inspection.

Soils: The APE traverses soils of the Morley-Blount-Beacher soil association.

Drainage: The APE is situated on a watershed between Lake Michigan and the Des Plaines River. The eastern portion drains to unnamed drainages to Lake Michigan, and the western portion drains to Bull Creek to the Des Plaines River, to the Illinois River to the Mississippi River

Sources: See attached Comments for sources consulted.

Investigation Techniques: In 2020, archival research was conducted for the entire APE. In 2021, field investigations were conducted via visual inspection and shovel testing. All disturbed areas were visually inspected and photographed. Areas where access was denied were visually inspected from public property. In areas amenable to survey, where surface visibility was less than 25%, shovel tests were excavated at 15-meter intervals to sterile subsoil. Where cultural material was encountered, additional shovel tests were excavated at 5-meter intervals in the cardinal directions to delineate site boundaries. All sediments were screened through 1/4 inch hardware mesh. Soil profiles were recorded using standard Munsell colors.

Materials: 2 flake fragments, 1 blocky shatter

Collection Technique: All prehistoric material encountered was collected. Non-diagnostic historic material was inventoried in the field.

ARCHAEOLOGICAL AND HISTORICAL INFORMATION:

Previously Reported Sites Within Project APE and Within a One Mile Radius of Project APE:
Within the APE: None. Within 1 mile of the APE: 11L486, 11L617, and 11L618.

Previous Surveys Within Project APE and Within a One Mile Radius of Project APE:
Within the APE: IHPA Doc. Nos. 7984, 17697, and 19395. Within 1 mile of the APE: IHPA Doc. Nos. 33, 5321, 6381, 7512, 9201, 9540, 9715, 10183, 11564, 13148, 17545, 20890, 23408 and 99999.

Archaeologist Contacted: None **Curated:** N/A

Acres Surveyed: 140.6 **Sq m:** 568,988.5 **Time: (person hours)** 198.50

Sites WIthin Project Area:

11L967

Other Sites Identified:

Project Summary and Recommendations:

- [ ] Phase I Archaeological Reconnaissance Has Located No Archaeological Material; Project Clearance is Recommended for the Surveyed Portion of the Project APE.
- [X] Phase I Archaeological Reconnaissance Has Located Archaeological Materials; Site(s) Does (Do) Not Meet Requirements For National Register Eligibility; Project Clearance Is Recommended for the Surveyed Portion of the Project APE.
- [ ] Phase I Archaeological Reconnaissance Has Located Archaeological Materials; Site(s) May meet Requirements For National Register Eligibility; Phase II Testing Is Recommended.
- [ ] Phase II Archaeological Investigation Has Indicated That Site(s) Does (Do) Not Meet Requirements For National Register Eligibility; Project Clearance Is Recommended.
- [ ] Phase II Archaeological Investigation Has Indicated That Site(s) Meet Requirements For National Register Eligibility; Formal Report Is Pending and a Determination of Eligibility is Recommended.
- [ ] Other: _____

Field investigations were completed for 97.7 percent (140.6 acres/568,857m^2) of the 145.02-acre (568,684m^2) area of potential effects (APE) via visual inspection and shovel testing. Archival research was completed for 100 percent of the APE. One new site, 11L967, was identified. This site has a long history of occupation and does not warrant National Register of Historic Places (NRHP) consideration under Criterion D or any other criteria because it lacks information potential and integrity. No further archaeological investigations are warranted for site 11L967. ISAS therefore recommends project clearance within the defined boundaries of the APE. **See attached Comments for additional information.**

Archaeological Contractor: **Illinois State Archaeological Survey, University of Illinois at Urbana-Champaign**
Address/Phone: **209 Nuclear Physics Building, 23 Stadium Drive, Champaign, Illinois 61820 (217) 244-4244**

Survey Dates: 13-15, 20-21, 29 July; 24-26, 30 August; 2 November 2021

Surveyor (s): Project Supervisor: Clare Tolmie. Project Crew: Paula Porubcan Branstner, Clare Tolmie, Marie Meizis, Jordan Ciesielczyck-Gibson, Allison Densmore, Lauren Fitts, Georgia Abrams, Hannah Ruckinski

Report Completed By: Clare Tolmie, Marie Meizis **Date:** 12/1/2021

Submitted By: Brian Adams, **Brian Adams, Assistant Director ISAS Statewide Survey**
Attached is the following documentation (if applicable):

1) **Relevant Portion of USGS 7.5' Topographic Quadrangle Map(s) Showing Project Location And Any Recorded Sites**
2) **Project Map(s) Depicting Survey Limits and, When Applicable, Approximate Site Limits and Concentrations of Cultural Materials**
3) **Site Form(s).**
4) **All Relevant Project Correspondence.**
5) **Additional Information Sheets as Necessary.**

Address of Owner/Agent/Agency To Whom SHPO Comment Should Be Mailed:

Brad H. Koldehoff, RPA
Cultural Resources Unit
Bureau of Design and Environment
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, IL 62764

ISAS Log No. 19130
IDOT Sequence No. 19504A
Waukegan National Airport Runway Replacement, Addendum A
Lake County

ASSR Comments

Summary Project Recommendations

Field investigations were completed for 97.7 percent (140.6 acres/568,857m^2) of the 145.02-acre (568,684m^2) area of potential effects (APE) via visual inspection and shovel testing. Archival research was completed for 100 percent of the APE. One new site, 11L967, was identified. This site has a long history of occupation and does not warrant National Register of Historic Places (NRHP) consideration under Criterion D or any other criteria because it lacks information potential and integrity. No further archaeological investigations are warranted for site 11L967. ISAS therefore recommends project clearance within the defined boundaries of the APE.

Project Description and Location

This report combines the results of a previous archival review conducted in March and April of 2020, and subsequent fieldwork undertaken in July, August, and November 2021 following the State Historic Preservation Officer's (SHPO) review of the results of the archival review and finding of Conditional No Adverse Effect dated 22 May 2020.

In March and April of 2020, the Northern Illinois Field Station (NIFS) of the Illinois State Archaeological Survey (ISAS) conducted an archival review in advance of the replacement of Runway 5/23 at Waukegan National Airport, including the relocation of N. Green Bay Road and W. Yorkhouse Road, land acquisition, and ancillary projects. The project area, or area of potential effects (APE), is located in Section 1 of Township 45 North, Range 11 East, Section 6 of Township 45 North, Range 12 East, and Sections 29, 31, and 32 of Township 46 North, Range 12 East of the Third Principal Meridian in the cities of Beach Park and Waukegan, Lake County, Illinois. The total survey area comprises 145.02 acres or 586,864 square meters (Figure 1) (Attachment 1). Field work was not possible at this time for two reasons: lack of access to private property that has yet to be acquired by the airport, and the delay in obtaining permits for fieldwork within the Lake County Forest Preserve easement, due in part to the ongoing Covid-19 crisis.

In July, August, and November of 2021, NIFS conducted cultural resource field investigations under the supervision of Dr. Clare Tolmie in advance of the replacement of Runway 5/23 at Waukegan National Airport, including the relocation of N. Green Bay Road and W. Yorkhouse Road, land acquisition, and ancillary projects at 10 localities within the above project area.

The Environmental Survey Request (ESR) was accompanied by detailed plan sheets that depict the APE. The APE is discontinuous, comprising 10 separate localities to the northeast and southwest of the existing airport. For the ease of reference in this report, NIFS assigned numbers to each location (Figure 2.1 through Figure 2.3):

Locality 1 is an L-shaped area with a western boundary located 194 meters east of the intersection of McAree Road and W. Wadsworth Road. The southern boundary extends east along W. Wadsworth Road for approximately 260 meters, then traverses a residential property in a northeasterly direction and continues north along a property line. The northern boundary extends east to Lewis Avenue, then south along Lewis Avenue for 143 meters, then west for 280 meters to the north-south property line mentioned above (Figure 2.1).

Locality 2 is located on the northeast corner of the intersection of W. Wadsworth Road and N. Lewis Avenue, comprising a commercial property and a residential property with maximum dimensions of 130 meters east-west and 60 meters north-south (Figure 2.1).

Locality 3 is an irregularly shaped parcel located on the southeast corner of the intersection of W. Wadsworth Road and N. Lewis Avenue, with maximum dimensions of 135 meters by 90 meters (Figure 2.1).

Locality 4 is an L-shaped area located on the east side of N. Green Bay Road at the intersection with E. Beach Road. The APE extends north of W. Beach Road for a maximum distance of 45 meters, and east of the intersection for 160 meters. South of the intersection, the APE extends east for 50 meters and south for approximately 270 meters (Figure 2.2).

Locality 5 is an irregularly shaped parcel located to the west of N. Green Bay Road with maximum dimensions of 285 meters east-west by 285 meters north-south and comprises residential properties located on W. Suddard Street, W. Center Street and W. Zephyr Street (Figure 2.2).

Locality 6 is a small, rectangular parcel with dimensions of 72 meters east-west by 45 meters north-south. The parcel is located approximately 190 meters north of W. Town Line Road and approximately 20 meters west of Locality 5, west of W. Center Street (Figure 2.2).

Locality 7 is a small, rectangular parcel with dimensions of 75 meters east-west by 45 meters north-south. The parcel is located approximately 100 meters north of W. Town Line Road and approximately 25 meters west of Locality 5, west of W. Zephyr Street (Figure 2.2).

Locality 8 is a rectangular parcel with dimensions of 185 meters east-west by 82 meters north-south, located on the north side of W. Town Line Road, approximately 340 meters west of the intersection of W. Town Line Road and N. Green Bay Road (Figure 2.2).

Locality 9 is a large, irregularly shaped parcel situated between W. Town Line Road and W. Yorkhouse Road. The northern boundary, on W. Town Line Road, begins at a point approximately 525 meters west of the intersection with N. Green Bay Road, immediately south of the southwest corner of Locality 8. The northern boundary extends west along W. Town Line Road for 312 meters. The western boundary runs south along a property line for 192 meters, then west for 100 meters, then south for 120 meters, then southeast to the western terminus of the southern boundary, approximately 955 meters west of the intersection of W. Yorkhouse Road and N. Green Bay Road. The southern boundary runs east along the north side of W. Yorkhouse Road for approximately 845 meters, to a point approximately 110 meters west of the intersection with N. Green Bay Road. The eastern boundary goes north from this point for 200 meters, then west for 393 meters, then north for 190 meters to the eastern terminus of the northern boundary. The majority of this parcel lies within property owned by the Forest Preserve District of Lake County, with the exception of residential properties along W. Town Line Road (Figure 2.3).

Locality 10 is a roughly triangular parcel located to the south of W. Yorkhouse Road. The northern boundary begins at a point approximately 290 meters west of the intersection with N. Green Bay Road and continues west for approximately 575 meters, crossing N. Bayonne Avenue. At the western terminus the boundary turns southeast and continues southeast at an angle of 45º for approximately 375 meters, then northeast at an angle of 90º for approximately 80 meters then south for 206 meters, then east for 95 meters, north for 55 meters, east for 40 meters, then north for 190 meters, and northeast at an angle of 129º for 160 meters to the eastern terminus of the

northern boundary. The majority of this parcel lies within the boundaries of property owned by the Forest Preserve District of Lake County, with the exception of residential properties on N. Bayonne Avenue and W. Bairstow Avenue (Figure 2.3).

Environmental Description and Project Setting

Physiographically, the APE lies within the Wheaton Morainal Country of the Northeastern Morainal Division, immediately west of the Lake Michigan Dunes Section of the same division (Schwegman 1973). The APE is located on the watershed of two drainage systems, and on the divide between the Mississippi River and the St. Lawrence River drainage basins. The eastern portion of the APE (Localities 1, 2 and 3) drains via unnamed drainages to Lake Michigan, and then into the St. Lawrence River. The western portion of the APE (Localities 4, 5, 6, 7, 8, 9, and 10) drains to unnamed tributaries that drain into the Des Plaines River, which flows into the Illinois River, which flows into the Mississippi River.

Soils within the APE reflect the geological and environmental history of the area. The APE traverses soils of the Morley-Blount-Beecher soil association. Morley-Blount-Beecher soils occur in the uplands of northeastern Illinois. Soils within the series developed in thin loess over Wisconsin glacial till, primarily under forest vegetation (Fehrenbacher et al. 1984). Nine soil series are present within the APE: Houghton muck (103A), Ashkum silty clay loam (232A), Beecher silt loam (298A, 298B), Peotone silty clay loam (330A), Ozaukee silt loam (530B, 530C, 530C2), Markham silt loam (531B), Zurich and Ozaukee silt loams (840B), Wauconda and Beecher silt loams (978A, 978B), and Peotone silty clay loam (1330A) (Natural Resources Conservation Service [NRCS] 2021).

Previous Investigations

There are no previously recorded sites within the APE. Three previously recorded sites are present within one mile of the APE: 11L486, 11L617, and 11L618 (Illinois Inventory of Archaeological Sites [IIAS] 2021).

The Illinois Archaeological Predictive Model (IAPM [2021]), created by ISAS, shows the APE within an area of medium-low probability for cultural remains. The absence of reliable or accessible water sources on the watershed between two drainages and presence of forest vegetation in the pre-contact period likely resulted in use of the area in the prehistoric period for short-term activities based on seasonally available plant and animal resources.

Three previous surveys intersect with the APE: IHPA Doc. Nos. 7984, 17697, and 19395. IHPA Doc. No. 7984 was conducted in 1997 by Hanson Engineers Incorporated for the Illinois Division of Aeronautics prior to proposed property acquisition for expansion of Waukegan Regional Airport (now Waukegan National Airport) (Vollman 1996). A total of 5.73 acres of the 6.82-acre parcel was investigated by shovel testing in transects at 15-meter intervals. Access was denied to 0.74 acres and 0.35 acres were not amenable to survey due to dense vegetation. No sites were identified, and project clearance was recommended for the entire parcel (Vollman 1996). IHPA agreed with this finding, according to the annotation on the document held on the Illinois CRM Report Archive.

Two previous surveys were undertaken by ISAS: IHPA Doc. No. 17697 was conducted in 2009 by the Illinois Transportation Archaeological Research Program (ITARP), now ISAS, for the Illinois Department of Transportation (IDOT) prior to proposed airport expansion (Porubcan et al. 2009). IHPA Doc. No. 19395 was conducted in 2009 by ISAS for IDOT prior to widening and reconstruction of IL Route 131 (Geraci et al. 2011). These investigations are described below.

Fifteen additional previous surveys were reported within one mile of the APE: IHPA Doc. Nos. 33, 5321, 6381, 7512, 9103, 9201, 9540, 9715, 10183, 11564, 13148, 17545, 20890, 23408, and 99999 (IIAPS 2021).

Previous ISAS Investigations Within the APE

ISAS Log 08215, IDOT Seq No. 14790

ITARP (now ISAS), investigated a total of 55 acres of land in three irregularly shaped parcels via shovel testing prior to land acquisition for future airport development (IHPA Doc. No. 17697) (Porubcan et al. 2009). One parcel was located to the east of Green Bay Road, along Chaney, Street, Hart Road, Beach Road, and Renier Road. The second area was located to the west of Green Bay Road, to the north and south of Town Line Road between Zephyr Street and Eastwood Road, and the third was an area at the southeast intersection of Beach Road and McAree Road (Figure 2.2 and 2.3). At the time of survey, the project area was in marshy, wooded, and grassy areas with 0 percent visibility, and residentially disturbed areas, also with 0 percent visibility. Residentially disturbed areas and wetlands were visually inspected. Wooded and grassy areas were investigated by shovel testing. No new sites were identified, and project clearance was recommended for the entire survey area (Porubcan et al. 2009). These recommendations were accepted by the Illinois SHPO.

ISAS Log 09106, IDOT Seq. No. 14766

ISAS investigated 147 acres of land prior to proposed widening of Illinois Route 131 (Green Bay Road) from Sunset Avenue to Russell Road on the Wisconsin State Line (IHPA Doc. No. 19395) by shovel testing and pedestrian reconnaissance which identified four sites, all near the Wisconsin border. The area of the survey within the APE, on the west side of Green Bay Road, was determined to be disturbed by utilities and residential construction. The area north and south along Yorkhouse Road was in forest with 0 percent visibility and investigated by shovel testing (Figure 2.2 and 2.3). No cultural material was identified in this area (Geraci et al. 2011). Project clearance was recommended July 2011, according to the document on file on the Illinois CRM Report Archive.

Results of Archival Review

Archival research was completed for 100 percent of the 145.02 acres or 586,864 square meters APE. ISAS determined that approximately 41 percent of the APE has been disturbed by previous urban development; while 57 percent of the APE contained potentially undisturbed areas in Localities 1, 4, 5, 7, 8, 9, and 10. Approximately 1 percent of the APE is in wetlands. The total area of potentially undisturbed land within the APE is 82.6 acres. The remaining 61.42 acres have been disturbed by construction associated with commercial or residential development or lie within wetlands or former wetlands.

General land use history is described here, and detailed land-use histories of the ten localities are described below. All available historic plats were compiled and consulted (Appendix A). At the time of Euro-American settlement, the northeastern portion of the APE was timber and the southwestern portion of the APE was primarily in cultivated or enclosed lands in an area of prairie or scattered timber (General Land Office [GLO] 1840). A trail that follows the approximate route of N. Green Bay Road is shown on the GLO map. No structures are present within the APE (GLO 1840).

By 1861, all land within the APE had been subdivided into agricultural parcels. No structures are present within the APE. The road network had begun to develop: West Town Line Road is shown running west from the intersection with present-day N. Green Bay Road. A second road is shown running east of N. Green Bay Road from a point south of Locality 4 and north of Locality 5 through

the airport to the Section 31/32 boundary and then northeast, passing through the southeast corner of Locality 1 (Hale and Truesdell 1861). Both Green Bay Road and the unnamed road are present on the 1873 and all later plats, although the east-west portion of the unnamed road appears to be abandoned by 1885 (Frost and McLennan 1873; H.R. Page 1885; George A. Ogle 1907; Geraghty 1925; Thrift Press 1926; W.W. Hixson 1936).

Between 1907 and 1926, the area became the focus of real estate development or speculation. The 1926 plat shows parts of the APE within the area platted as Bartletts Greater North Shore and other areas platted as subdivisions are shown in the surrounding area. The opening of what became the Chicago North Shore and Milwaukee Railroad in 1895 and the expansion of the network after its acquisition by Samuel Insull in 1916 provided access to Chicago and Milwaukee, and these subdivisions reflect the pattern of suburbanization common in the early twentieth century (Keating 2005; Stilgoe 1990). Many of these planned subdivisions failed as a result of the 1927 Crash and subsequent depression. In consequence many lots remained undeveloped until the economy revived in the post-war period (Keating 2005; Stilgoe 1990)

Examination of commercially available aerial photography shows that the APE remained largely agricultural or open land with scattered residences in 1939 (Nationwide Environmental Title Research [NETR] 2020). The airport is shown under construction in 1946, but the APE remains primarily agricultural. By 1953 residential development is occurring in the area, and by 1961 the area is predominantly residential (NETR 2020). The 1961 aerial also shows the realignment of the airport runways in progress, resulting in the current runway orientation.

Land use history for the ten separate localities is discussed below. Land ownership information is derived from the Bureau of Land Management Government Land Office records (BLM 2020), the Illinois Secretary of State Public Domain Land Tract Sales database (Illinois Secretary of State [ILSOS] 2020) and historic plats (Frost and McLennan 1873; H.R. Page 1885; Hale and Truesdell 1861; George A. Ogle 1907; Geraghty 1925; Thrift Press 1926; W.W. Hixson 1936).

Locality 1. Land within this locality in Section 29 was purchased from the US Government by Laurence Laudergan and Bridget Laudergan. Laurence purchased the E ½ of the SW ¼ on June 6, 1843 (deed issued May 1, 1844), and Bridget purchased the W ½ of the SW ¼ on June 14, 1942 (deed issued March 10, 1843). By 1861 the majority of the property was owned by Thomas Whallon (Whalen) and remained within the Whallon family until sometime after 1885. By 1926 it had been acquired by A. Davis and remained in the Davis family in 1936. Nineteenth and early twentieth century plats show a road running from southwest to northeast through the eastern portion of the locality.

A structure is shown within the APE on the 1885 plat, in the southeast corner of Locality 1, and is present on the 1939 aerial image and on all later aerials.

A small segment of land on the northern boundary of Locality 1 was owned by the Doolly or Dooley family until sometime after 1885 and was owned by the Voliva family in 1926 and 1936. No structures are shown on this parcel within the APE. Archival research indicates that this area has not been impacted by later development (NETR 2020).

At the time of Euro-American settlement Locality 1 was in timber, adjacent to prairie to the south. By 1861 the area appears to have been partitioned for agriculture. The property remained in agriculture until the late twentieth century. Examination of commercially available aerial imagery shows that the road running from southwest to northeast on the plats was still present in 1939 (NETR 2020). By 1946 this road was abandoned, and the southern portion converted for use as

a driveway. Structures are shown at the four locations where commercial or residential structures are present today, one on N. Lewis Avenue and three on Wadsworth Road. The surrounding landscape remained largely rural until the late twentieth century. Commercial or other development begins in the western section of the parcel between 1981 and 1988, and the property was fully developed by 2009. Other major disturbance occurred with the establishment of a tree farm on Wadsworth Road in 2002, in the central portion of the area of the APE fronting Wadsworth Road. The eastern segment remained undeveloped to the north of the existing residential structures, with former agricultural land now in grass. The portion of the APE on Lewis Avenue is also disturbed by additional development but the lot behind this property appears to be undisturbed and has reverted to timber.

No previous archaeological surveys have been conducted within Locality 1, and no previously reported sites are present. The central portion of Locality 1 remains undeveloped and likely undisturbed, and is now in grass and timber (Figure 2.1).

Locality 2. Land containing Locality 2 was purchased from the US government by James Campbell on June 14, 1842 (deed issued March 10, 1843). By 1861, the area was subdivided for agricultural use and was owned by R. Doolly or Dooley and remained within the Dooley family until sometime after 1885. By 1926, the property had been acquired by A.C. Anderson and remained in the Anderson family until sometime after 1936. At the time of Euro-American settlement the parcel was in timber. The area was divided into agricultural parcels by 1861. The 1939 aerial image shows this area remained in agriculture, but by 1961 the western half of the parcel had been developed, and by 1973 the entire parcel was developed (NETR 2020).

Given the degree of disturbance in the late twentieth century, there is little likelihood that intact subsurface sediments are present, and no further work is recommended at Locality 2.

Locality 3 lies within a parcel purchased by Patrick Mines from the US Government on August 24, 1842 (deed issued July 10, 1844). By 1861 it was part of the P. Mines property and in 1873 was owned by R. Field. In 1885 it was owned by James Cole and by 1926 was owned by J.C. Walker and remained in the Walker family until sometime after 1936. The GLO map shows the locality in timber. By 1861, Locality 3 lies within an area subdivided into agricultural parcels (Hale and Truesdell 1861). At some time prior to 1939 a structure was built in the northern portion of the parcel. The area of development was enlarged in 1946, and by 1961 the entire parcel was developed. These earlier structures were replaced by the current parking lot and associated buildings sometime between 1973 and 1981 (NETR 2020).

Locality 4. The northern portion of Locality 4 is part of a parcel purchased by Robert D. Minsky from the US Government on March 10, 1841 (deed issued deed issued March 10, 1843), and the southern portion was purchased by Jeremiah Porter on June 3, 1842 (deed issued July 10, 1844). By 1861 the entire area lay within the D.B. Brewster property, but by 1873 was part of the C. Dusenbury estate. In 1885 it was owned by J. Long and in 1907 by W.S. Keith. The area is shown in 1926 as part of the area platted as “Bartletts Greater North Shore”, and in 1936 as “Plats of Frederick H. Bartletts Greater North Shore”. Frederick H. Bartlett & Company was a large property development company. As noted above, this subdivision was one of a number in the area that were platted near inter-urban lines to attract city dwellers to the suburbs.

At the time of Euro-American settlement, Locality 4 was situated on the prairie/timber interface, with a north-south trail present on the western boundary in the approximate location of N. Green Bay Road, and areas cleared or enclosed by squatters or settlers further to the west. By 1861 the locality was in agricultural land. The 1939 aerial shows Renier Street in place, but no structures

are present. By 1947, a structure (presumably residential) is shown on the north side of Renier Road. Beach Road was built between 1946 and 1953, although no structures are shown in 1953. The majority of structures on these two roads were built between 1953 and 1961. No structures are shown on the south side of W. Renier Street. An additional structure is shown at the southern end of Locality 4 on the 1973 aerial, but this appears to have been demolished by 2002. No subsequent changes have occurred within Locality 4.

One archaeological survey is reported within Locality 4: IHPA Doc. No. 19395. This survey was conducted by ITARP/ISAS prior to the widening of N. Green Bay Road. No archaeological sites were reported within the Locality (IIAS 2021). A second archaeological survey, IHPA Doc. No. 9540 appears to impinge on Locality 4 based on shapefile data from the IIAPS. However, examination of the original survey maps indicates that all areas surveyed were to the east, within the existing airport property (Berres 1999).

The area of Locality 4 north of W. Renier Street and along W. Beach Road has been impacted by residential development and is unlikely to contain intact subsurface sediments. However, archival research indicates that the portion of Locality 4 south of Renier Street has not been disturbed by development, with the possible exception of a lot at the southern end of the locality (Figure 2.2). This area may contain intact subsurface sediments and archaeological survey was undertaken in this area as part of the current survey and results are discussed below in Results of Field Investigation.

Localities 5, 6, 7, 8 lie within the property acquired by Jeremiah Porter on June 3, 1843. By 1861 these localities were owned by E. Putnam, and then were the property of W.S. Cole in 1873. By 1885 they were owned by J. Woodhouse. The Woodhouse property was divided prior to 1907, where Locality 5 was part of the estate of Robert Parr, and Localities 6, 7, and 8 were owned by the Hawkins family. In 1926 Locality 5 was platted as part of the Bartletts Greater North Shore subdivision, while Localities 6, 7, and 8 were the property of M.M. By 1936, these parcels had been acquired and platted as part of the Bartlett development.

The GLO map shows these localities were already enclosed for agriculture by 1840, in former prairie with timber immediately to the east. A north-south trail is shown at the approximate location of N. Green Bay Road. No structures are present within the localities. The parcels remained in agricultural land until the early twentieth century. Although platted as a subdivision prior to 1926, the stock market crash and Depression delayed any development.

Only Localities 5 and 8 have been impacted by development. Locality 5 remained undeveloped in 1939, with an access road at the location of Suddard Street leading to a single structure. By 1946, Suddard Street was extended to its present length. Zephyr Street and Center Street were also constructed in two stages, the first stage prior to 1961 and the later stage prior to 1988. Development within the subdivision occurred primarily between 1961 and 1972 north of Suddard Street, and prior to 1988 along Zephyr and Center Streets. A single lot at the west end of Zephyr Street was not developed and is now in timber. This area may contain undisturbed sediments, or the area may have been graded at some time in the past (NETR 2020). The single lot will require survey when access is possible (Figure 2.2).

Locality 8 has been impacted by residential development in the western half and at the eastern end. An open area in the east-central portion of Locality 8 appears undisturbed. All development occurred after 1939. The 1939 aerial shows Town Line Road but no buildings. By 1946 a residence is shown on the lot in the western portion of the locality, east of a more recent residential construction. This structure was abandoned and demolished circa 1972. The current residence

on the western side of the Locality (to the west of the earlier structure) was built between 1988 and 1993. The residence in the eastern portion of Locality 8 was built between 1953 and 1961. The area of parcel in the east-central portion of Locality 8 may contain intact subsurface sediments and will require survey when access is possible (Figure 2.2).

Localities 6 and 7 are the remnants of upland wetlands. Locality 6 is shown as a small upland wetland/pond on the 1939 aerial. At some time between 1993 and 1998 this wetland/pond was enlarged artificially. Locality 7 appears undeveloped but may have been impacted by installation of a drainage ditch or utility that is shown running from southwest to northeast on the 2002 and later aerials. Examination of the soil series present in these localities indicates that these are or were upland wetland pockets. Locality 6 contains Houghton series soils (103A) which formed in organic material and contained marsh vegetation; and Locality 7 contains Peotone series soils formed in colluvium under sedges and wet prairie vegetation (NRCS 2020). Neither Locality 6 nor Locality 7 are likely to contain significant cultural deposits. No further work is recommended for Locality 6 and 7.

Localities 9 and 10. Land in these localities in Section 1 of Township 45N R11E was purchased from the US Government by William Graham, who purchased Tract 1 on July 2, 1842 (deed issued July 10, 1844) and/or Philander A. Paine and Phillip Spaulding, who purchased Tract 2 on July 11, 1843 (deed issued May 1, 1845). Land in Section 6, T45N R12E was purchased by Elmesly Sunderly and/or James Pollen.

Locality 9 is shown on the 1939 aerial image as agricultural land, including an orchard along W. Town Line Road. No development is shown within this locality along Town Line Road until the 1980s, when the existing residences were built between 1981 and 1988. These residences are within large lots and the rear of these lots may contain undisturbed sediments. W. Yorkhouse Road was not built until sometime between 1961 and1972. The three residences within the locality on W. Yorkhouse Road were built sometime between 1972 and 1993.

Locality 10 was in agricultural land until sometime after 1972. As noted above, Yorkhouse Road was in place by 1972. The northern portion of Bayonne Road and associated structures were constructed between 1972 and 1981. Later extension of Bayonne Road, and construction of W. Barstow Avenue occurred between 1981 and 1993, and by 1998 all structures were in place. The areas of Locality 9 and Locality 10 within the modern forest preserve and the rear of the larger residential lots south of West Town Line Road are former agricultural fields that now contain secondary growth timber. These areas will require survey when access is possible (Figure 2.3).

Archival Research: Summary and Recommendations

Archival research for the ten separate localities within the APE, undertaken in March and April 2020, determined that six (Localities 1, 2, 3, 4, 5, and 8) are now largely in residential or commercial land, two are largely in former agricultural land that is now forest preserve (Localities 9 and 10), and two are wetlands (Localities 6 and 7). Archival research using commercially available aerial imagery determined that approximately 83 acres of land within portions of Localities 1, 4, 5, 8, 9, and 10 have not been disturbed by urban development. ISAS recommended that these undisturbed areas be surveyed for cultural remains when access was possible.

In 2021, ISAS undertook field investigations following review and comment from the SHPO on the report of results of archival research for the current project. Field survey was undertaken by ISAS in 2021 and is described below.

Field Conditions and Survey Methodology

At the time of survey, the APE contained areas disturbed by commercial and/or residential development, or construction of the existing ROW and utilities, all with 0 percent visibility; a section of the Waukegan Savanna Forest Preserve in trees and grass, with 0 percent visibility; and other areas of trees, grass, and wetland, with 0 percent visibility. Approximately 41 percent (59.82 acres/242,118m^2) of the APE was disturbed by urban and residential development. Approximately 43 percent (61.71 acres/249,672m^2) was in trees and grass and amendable to survey. Approximately 12 percent (17.17 acres/69,484m^2) was in wetlands. Access was denied to the remaining 4 percent (5.21 acres/21,096m^2) (Figure 3).

Two investigation techniques were employed during the field reconnaissance: visual inspection and shovel testing. All disturbed areas and wetlands were visually inspected and photographed. Areas where access was denied were visually inspected from public property. In areas amenable to survey, where surface visibility was less than 25 percent, shovel tests were excavated at 15-meter intervals to sterile subsoil. Where cultural material was encountered, additional shovel tests were completed at 5-meter intervals in the cardinal directions to delineate the site. All sediments were screened through ¼ inch hardware mesh (ISAS 2012). Soil profiles were recorded using standard Munsell colors (Munsell 1975). All pre-contact cultural material was collected. Non-diagnostic post-contact material was inventoried in the field.

Results of Field Investigation

Survey was completed for 97.7 percent (140.6 acres/568,857m^2) of the 145.02-acre (568,684m^2) APE via visual inspection and shovel testing. Archival research was completed for 100 percent of the APE and is described above. Access was denied to approximately 4 percent (5.21 acres/21,096m^2) of the APE, however only 2.3 percent of the APE (3.3 acres/13,514m^2) was not amenable to visual inspection from the public ROW.

One new site, 11L967, was identified.

A total of 719 negative shovel tests were completed throughout the APE.

One positive shovel test was completed within the boundary of new site 11L967.

Archival research for areas where access was denied shows that all these locations (Localities 1, 5, 8, and 9) were in agricultural land until the later twentieth century, and all are located in areas identified as medium-low probability for cultural remains by the Illinois Archaeological Predictive Model created by ISAS (IAPM 2021).

Visual inspection

ISAS was denied access to five small parcels in Localities 1, 5, 8, and 9. An 0.9-acre parcel in Locality 1 (Figure 3.1) was under cultivation until the 1970s. Following construction of a residence or residences, to the north on Illinois Avenue, the area was converted to grass. This area was visually inspected from the portion of Locality 1 to the south and remained in grass at the time of survey. No cultural material was identified during shovel testing in Locality 1 immediately to the south of this 0.9-acre parcel.

Access was denied to a 0.9-acre residential yard in Locality 5 (Figure 3.2), at the west end of Zephyr Road. This low-lying area was in agricultural land until the construction of the residence in the late twentieth century. Visual inspection from the public ROW found the lot largely in grass, with a border of trees. Examination of commercially available aerial imagery indicates that the lot was cleared of trees and/or shrubs visible on Figure 3.2 sometime between 2015 and 2017(NETR

2021). This parcel lies directly west of an area investigated by ISAS in 2009 that did not identify any cultural material (Porubcan et al. 2009).

Access was denied to a 1-acre horse pasture on the north side of Town Line Road in Locality 8 (Figure 3.2). The area of higher ground to the east was disturbed by construction of the existing residence and outbuildings beginning in the 1950s. The pasture is largely in low ground, possibly within the floodplain of a small, channelized creek and was under cultivation until the 1960s (NETR 2021). Given the low ground and likelihood of wetlands or flooding, this area was unlikely to be conducive to long-term use in the prehistoric period.

Access was not possible for two small parcels of land now within residential properties to the south of Town Line Road, bordering the Waukegan Savannah Forest Preserve in Locality 9 (Figure 3.3). A 2.45-acre parcel, now in timber, was under cultivation until at least 1972, and then reverted to secondary woodland in the later twentieth century. This area lies to the north of what is now a wetland. The smaller, 0.9-acre parcel on the eastern boundary of the APE, lies directly north of the existing forest preserve, and has the same land use history. Extensive shovel testing in the Waukegan Savannah Forest Preserve to the south of these two parcels during the current survey and earlier survey of land to the east (Porubcan et al. 2009) did not identify any cultural material.

Information supplied by Waukegan Airport indicates that only the 0.9-acre parcel in Locality 9 is likely to be disturbed by construction at this time (exhibits sent to C. Tolmie 12 November 2021). Given the absence of any cultural resources in the immediate vicinity and the long history of agricultural use this area is unlikely to contain significant archaeological resources. All other parcels where access is denied will have taller vegetation removed. Given the paucity of archaeological material identified in the larger survey area and in previous archaeological surveys, disturbance of subsurface sediments by long-term agriculture and/or recent possible disturbance related to landscaping, the likelihood of any significant archaeological resources is low in these areas. ISAS therefore recommends no further work for all areas where access was denied.

Visual inspection of parcels outside areas where access was denied confirmed that Localities 2, 3, 5, 6, 7 and 8 were disturbed by residential or commercial development, or are in existing wetlands and therefore not amenable to survey. The remaining four localities: Localities 1, 4, 9, and 10 had areas amenable to shovel test survey in addition to areas of disturbance and wetlands (Figures 3.1–3.3).

Negative shovel tests

Two negative shovel tests were recorded to show the different landforms present in the localities surveyed via shovel testing. ST1 represents Localities 9 and 10, ST2 represents Locality 4.

Negative Shovel Test 1 (ST1) was recorded in Locality 9 to examine the nature of the subsurface sediments of this landform. ST1 was located approximately 215 meters (705 feet) north of W. Yorkhouse Road and 1,060 meters (3,477 feet) west of N. Green Bay Road on level to gently sloping upland topography (Figure 3.3). The profile of ST1 was as follows:

A Horizon:	0-20cmbs	10YR 3/4 brown silty loam
B Horizon:	20-30cmbs	10YR 4/6 dark yellowish brown silty clay loam

Negative Shovel Test 2 (ST2) was recorded in Locality 4 to examine the nature of the subsurface sediments. ST2 was located approximately 15 meters (49 feet) east of N. Green Bay Road and

123 meters (403 feet) south of W. Renier Street on level to gently sloping upland topography (Figure 3.2). The profile of ST2 was as follows:

A Horizon	0-30cmbs	10YR 3/3 dark brown silt loam
B Horizon	30-40cmbs	10YR 4/6 dark yellowish brown silty clay loam

ST1 and ST2 are located in an area mapped as Ozaukee silt loam. Ozaukee series soils consist of moderately deep or deep soils that formed in loess and underlying dense till on ground and end moraines under mixed hardwood forest. A typical Ozaukee soil profile is as follows: an A horizon from 1-13cmbs of 10YR 4/2 dark grayish brown silt loam over an E horizon from 13-25cmbs of 10YR 5/3 brown silt loam over a Bt1 horizon from 25-36cmbs of 10YR 4/4 dark yellowish brown silty clay loam over a 2Bt2 horizon from 36-48cmbs of 10YR 4/4 silty clay (NRCS 2021b)

While the transitional E horizon is absent in both ST1 and ST2, the profiles of each fall somewhat within the range of value and chroma for Ozaukee series soils. The A horizon is thicker than that a typical Ozuakee series soil, and the depth suggests that former A, E, and Bt sediments have been incorporated into an Ap horizon by long-term mechanized agriculture following clearance of the native hardwood vegetation for cultivation in the mid-nineteenth century.

New Sites

Site 11L967, Prehistoric Unknown; Historic, Frontier, Early Industrial, Urban Industrial, Post-War

Site 11L967 is a historic habitation site located immediately north of Wadsworth Road and 290 meters west of Lewis Avenue. The site also contains a small unknown pre-contact component (Appendix B). The site is located on an upland rise, with dimensions 102 meters east-west and 153 meters north-south. The total site area is 16,837m^2 (181,236 square feet). Ninety percent of the site lies within the APE (Figure 4).

Site 11L967 was recorded during a shovel test survey in Locality 1 in a forested area with less than 25 percent visibility. Three prehistoric artifacts were recovered, and two historic surface features were identified. The surface features consist of a house and the remains of a silo (Figure 4). The area to the north and west of the residence contained piles of building debris and remnants of old automobiles.

Two shovel tests were completed within the boundaries of 11L967: positive Shovel Test 3, and negative Shovel Test 4, described below:

Positive Shovel Test 3 (ST3)

One representative shovel test was recorded in Locality 1 to examine the nature of the subsurface sediments. Positive Shovel Test 3 (ST3) was located approximately 60 meters (197 feet) north of W. Wadsworth Road and 370 meters (1,220 feet) west of Lewis Avenue on level to gently sloping upland topography, to the west of the existing residence (Figure 3.1 and Figure 4). The profile of ST3 was as follows:

A Horizon	0-18cmbs	10YR 3/2 very dark grayish brown sandy loam
B Horizon	18-24cmbs	10YR 5/3 brown sandy clay loam

Two flake fragments and a blocky shatter were recovered from 0-20cmbs.

ST3 is located in an area mapped as Ozaukee silt loam described above. The presence of sand in the A and B horizons is not consistent with a typical Ozaukee series profile, which contains a thin elluviated epipedon over a clay dense subsoil. The lack of a transitional zone and the sandier soils may be the product of local soil formation processes and/or past use of the area for agriculture.

Negative Shovel Test 4 (ST4)
ST4 was dug in the barbed wire enclosure around the silo remains. The area around the silo has been affected by modern dumping and ST4 was recorded approximately 10 meters east of the silo on level to gently sloping upland topography, approximately 160 meters north of Wadsworth Road and 300 meters west of Lewis Avenue (Figure 3.1 and Figure 4). The profile is as follows:

A Horizon	0-10cmbs	10YR 3/3 dark brown silty clay loam
B Horizon	10-20cmbs	10YR 4/6 dark yellowish brown clay loam

ST4 is located on soils mapped as Ashkum series soils, near the boundary with an area mapped as Ozaukee silt loam. Ashkum series soils are deep, poorly drained soils that formed in colluvium under moisture tolerant grasses. A typical profile consists of an Ap and A horizon (0-30cmbs) of 10YR2/1 black silty clay loam over a BAg transitional horizon (30-46cmbs) of 2.5Y4/1 dark gray silt loam. This overlies a gleyed Bg horizon (46-74cmbs) of 2.5Y5/2 grayish brown silty clay. A change in parent material occurs at 74cmbs, at the top of a 2Bg2 horizon (74-124cmbs) of 2.5Y5/2 grayish brown silty clay loam. This overlies a transitional 2BCg horizon (124-137cmbs) of 2.5Y 5/2 grayish brown silty clay loam, and a 2Cg horizon, beginning at 137cmbs 2.5Y 5/2 grayish brown massive silty clay loam (NRCS 2021b).

While the transitional E horizon is absent, the profile of ST4 falls mostly within the range of value and chroma for nearby Ozaukee series soils. Soil series boundaries are diffuse, negative ST4 would be likely to exhibit properties closer to those of an Ozaukee series. Negative ST4 was located in a locality where much of the topsoil was thin or absent, suggesting deliberate removal in the past, or severe erosion. The thin A horizon and dense clay subsoil reflect erosional processes related to agriculture or other soil disturbance.

Site 11L967 Land Use History
The General Land Office (GLO) map of 1840 shows Section 29, Township 46 North Range 12 East in timber. The land was acquired through federal sale by Laurence Laudergan on June 6, 1843 (deed issued May 1, 1844) (BLM 2021; ILSOS 2021). By 1861, the property was owned by Thomas Whallon (Whalen), and remained within the Whallon family until sometime after 1885 (Hale & Truesdell 1861; Frost & McLennan 1873; H.R. Page 1885). By 1926 it had been acquired by A. Davis and remained in the Davis family in 1936 (Thrift Press 1926; W.W. Hixson 1936).

All the plats through 1936 show a road running southwest-northeast; the road is no longer present. Site 11L967 is directly west of this abandoned road, which now forms part of the access road to the house. There is no structure in the vicinity of site 11L967 depicted on the plats until 1885 (GLO 1840; Hale & Truesdell 1861; Frost & McLennan 1873). The 1885 plat shows a structure at the location of 11L967 when the land was owned by Thos. Whalen (H.R. Page 1885). The 1907 plat show the entirety of Section 29 as part of the town of Zion and shows no ownership details or individual structure locations (George A. Ogle 1907). Only improvements are shown on the remaining plats, and therefore, no structure is shown around 11L967.

The 1939 aerial shows the now abandoned road still present with a residence immediately south and outbuildings within the boundary of 11L967 visible. The surrounding area is in cultivated

fields. By 1946, the middle portion of the road was abandoned, and the southern portion of the road was converted into a driveway for the residence of 11L967. The area in and around 11L967 remains unchanged until the 1988 aerial when a pond and/or wetland is shown running from the northwest corner southeast through the site area. The sudden appearance of wetlands in former agricultural land suggests that these are man-made, created by either excavation or removal of drain tile. All outbuildings associated with the farmstead were demolished between 2000 and 2010 and the area of 11L967 is overgrown by secondary woodland (NETR 2021).

11L967 Summary and Recommendations

Site 11L967 is a Frontier, Early Industrial, Urban Industrial, and Post-War site that has been occupied for at least 135 years (1886-present); the site also contains a small unknown pre-contact component. Ninety percent of the site lies within the APE. The absence of cultural material recovered and presence of building debris and other late twentieth century trash suggests that the site has little potential to provide data significant to our understanding of early historic occupation in Lake County. Any prehistoric component once present has been severely impacted by construction of the residence and the construction and demolition of associated outbuildings. It is ISAS' opinion that site 11L967 does not warrant NRHP consideration under Criterion D or any other criterion because the site lacks information potential and integrity. No further work is recommended at site 11L967.

Conclusions and Recommendations

In March and April of 2020, the Northern Illinois Field Station (NIFS) of the Illinois State Archaeological Survey (ISAS) conducted an archival review for 100 percent of the APE in advance of the runway replacement for the Waukegan National Airport in Waukegan and Beach Park, Illinois. The APE contains 10 separate localities, of which six (Localities 1, 4, 5, 8, 9, and 10) required further survey. In July, August, and November of 2021, NIFS conducted a cultural resource survey in these localities via visual inspection and shovel testing.

Survey was completed for 97.7 percent (140.6 acres/568,857m^2) of the 145.02-acre (568,684m^2) APE via visual inspection and shovel testing. Access was denied to approximately 4 percent (5.21 acres/21,096m^2) of the APE, however all areas were investigated by archival research, and only 2.3 percent of the APE (3.3 acres/13,514m^2) was not amenable to visual inspection.

ISAS personnel identified one new archaeological site, 11L967, within the APE. Site 11L967 is a Frontier though Post-War habitation site located entirely within the APE. The site also contains a small unknown pre-contact component. This site does not warrant consideration for the NRHP because it lacks integrity or any features with the potential to provide insight into the early settlement history of Lake County. It is ISAS' opinion that no further investigations are warranted for site 11L967.

No other cultural material was identified during the survey. Archaeological modelling and the results of extensive shovel testing indicate that there is low probability that significant archaeological material is present within the areas where access was denied. ISAS therefore recommends project clearance within the defined boundaries of the ESR.

References Cited

Berres, Thomas

1999 *A Phase I Archaeological Survey of the Waukegan Regional Airport Project, Lake County, Illinois.* Archaeological Survey Short Report, Illinois CRM Report Archive Document No. 9540. Contract Archaeology Program, Department of Anthropology, Northern Illinois University, DeKalb, Illinois.

College of Agriculture, University of Illinois at Urbana-Champaign

1982 General Soil Map of Illinois. Soil Conservation Service, United States Department of Agriculture.

Fehrenbacher, J. B., J.D. Alexander, I.J. Jansen, R.G. Darmody, R.A. Pope, M.A. Flock, E.E. Voss, J.W. Scott, W.F. Andrews, and L.J. Bushue

1984 Soils of Illinois. Bulletin 778 University of Illinois College of Agriculture Agricultural Experiment Station in Cooperation with the Soil Conservation Service, U.S. Department of Agriculture, Urbana-Champaign, Illinois.

Freeman, Paul

2021 *Abandoned & Little-Known Airfield: Illinois: Northern Chicago area.* Online document available at http://www.airfields-freeman.com/IL/Airfields_IL_Chicago_N.htm, accessed July 2021.

Frost and McLennan

1873 Map of Lake County, Illinois. Frost and McLennan, Chicago, Illinois.

Geraci, Peter J. and Porubcan, Paula J.

2011 *FAP 880/FAP 2711 IL131 Sunset Ave to Wisconsin State Line*. Archaeological Survey Short Report, Illinois CRM Report Archive Document No. 19395. Illinois State Archaeological Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign.

Geraghty, John

1925 Geraghty's Map of Part of Lake County, Illinois. John Geraghty, Lake Forest, Illinois.

George A. Ogle & Co.

1907 Standard Atlas of Lake County, Illinois. George A. Ogle and Co., Chicago, Illinois.

H. R. Page & Co.

1885 Illustrated Atlas of Lake County, Illinois. H. R. Page, Chicago, Illinois.

Hale, George and J. M. Truesdell

1861 Map of Lake County, Illinois. L. Gast Bros. and Co., St. Louis, Missouri.

Illinois Archaeological Predictive Model (IAPM)

2021 Electronic document, https://go.isas.illinois.edu/IAPM, accessed July 2021.

Illinois Inventory of Archaeological Sites (IIAS)

2021 Electronic document, http://geoserver.dnr.illinois.gov/archaeologyviewer, accessed July 2021.

Illinois State Archaeological Survey (ISAS)
2012 Standard IDOT-ISAS Field Procedures for Phase I, II, and III Archaeological Investigations. Illinois State Archaeological Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign.

Keating, Ann Durkin
2005 *Chicagoland: City and Suburbs in the Railroad Age*. University of Chicago Press, Chicago.

Natural Resources Conservation Services (NRCS)
2021a Web Soil Survey. On-line interactive Map Database, Electronic document compiled by NRCS staff available at http://websoilsurvey.sc.egov.usda.gov/, accessed July 2021.
2021b Soil Series Descriptions. Electronic document compiled by NRCS staff available at https://soilseries.sc.egov.usda.gov/OSD_Docs/ accessed July 2021.

Nationwide Environmental Title Research, Inc. (NETR)
2020 Historic Aerials. Online database available at http://www.historicaerials.com. Accessed April 2020.
2021 Historic Aerials. Online database available at http://www.historicaerials.com. Accessed July 2021.

Porubcan, Paula, peter J. Geraci, and Amanda Douglas
2009 *Waukegan Regional Airport*. Archaeological Survey Short Report, Illinois CRM Report Archive Document No. 17697. Illinois Transportation Archaeological Research Program, University of Illinois at Urbana-Champaign.

Schwegman, J. E.
1973 The Natural Divisions of Illinois. Comprehensive Plan for the Illinois Nature Preserves System Part 2, Illinois Nature Preserves Commission, Springfield, Illinois.

Stilgoe, John R.,
1990 *Borderland: Origins of the American Suburb.* Yale University Press, New Haven.

Thrift Press
1926 Atlas-Plat Book of Lake County, Illinois. Thrift Press, Rockford, Illinois.

United States General Land Office (GLO)
1840a Plat of Benton Township, T46N R12E (29:64). Electronic document, landplats.ilsos.net, accessed February 2020.
1840b Plat of Warren Township, T45N R11E (29:45). Electronic document, landplats.ilsos.net, accessed February 2020.
1840c Plat of Waukegan Township, T45 R12E (29:65). Electronic document, landplats.ilsos.net, accessed February 2020.

Vollman, Brant
1996 *Waukegan Airport Expansion, Waukegan, Illinois*. Illinois CRM Report Archive Document No. 7984. Hanson Engineers Incorporated, Springfield, Illinois.

W.W. Hixson & Company.
1936 Plat Book of Lake County, Illinois. W.W. Hixson, Rockford, Illinois.

Figure 1: Topographic map showing the APE.

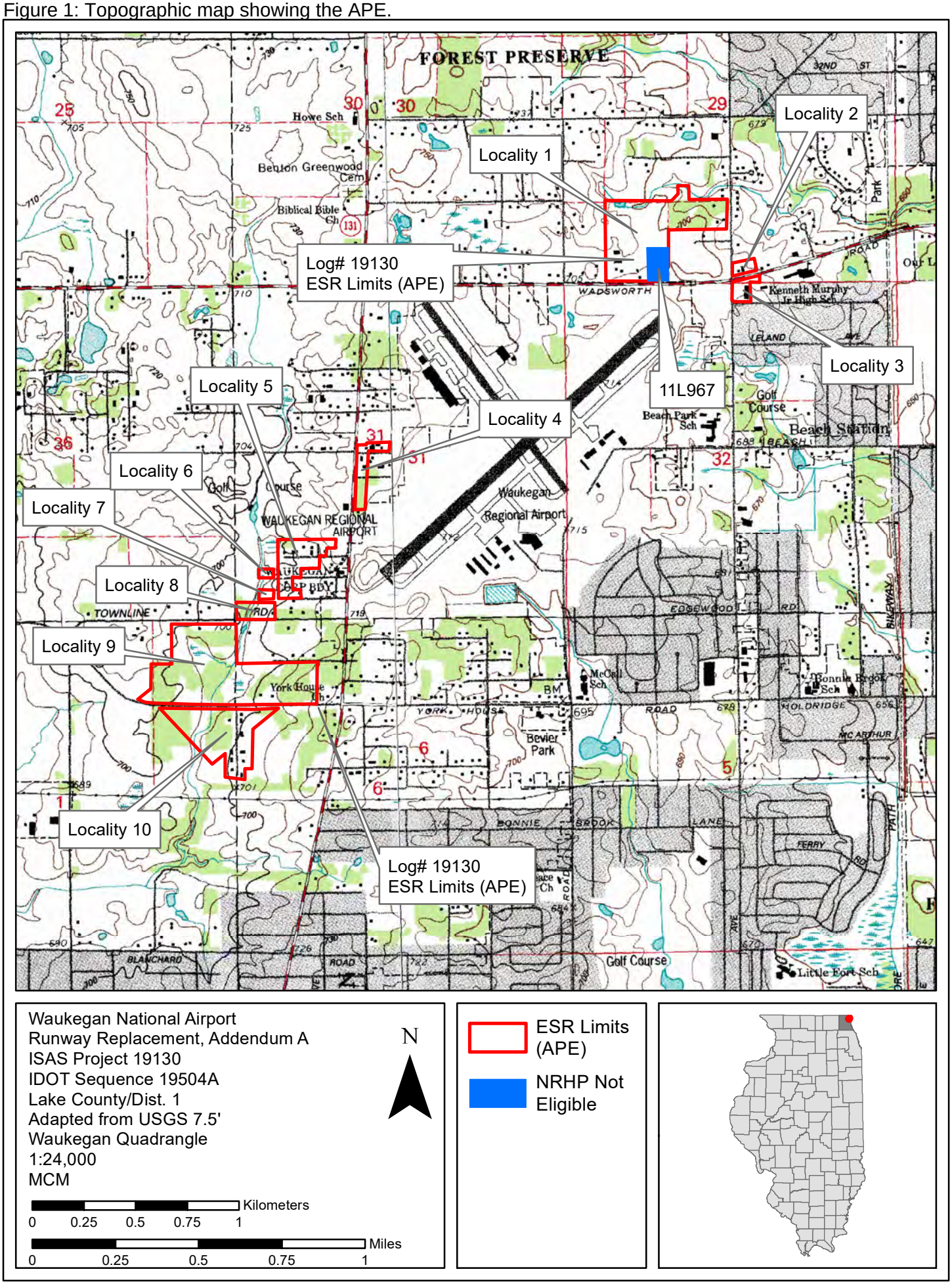


Figure 2.1: Aerial map showing areas recommended for survey and previous ISAS surveys within the APE.

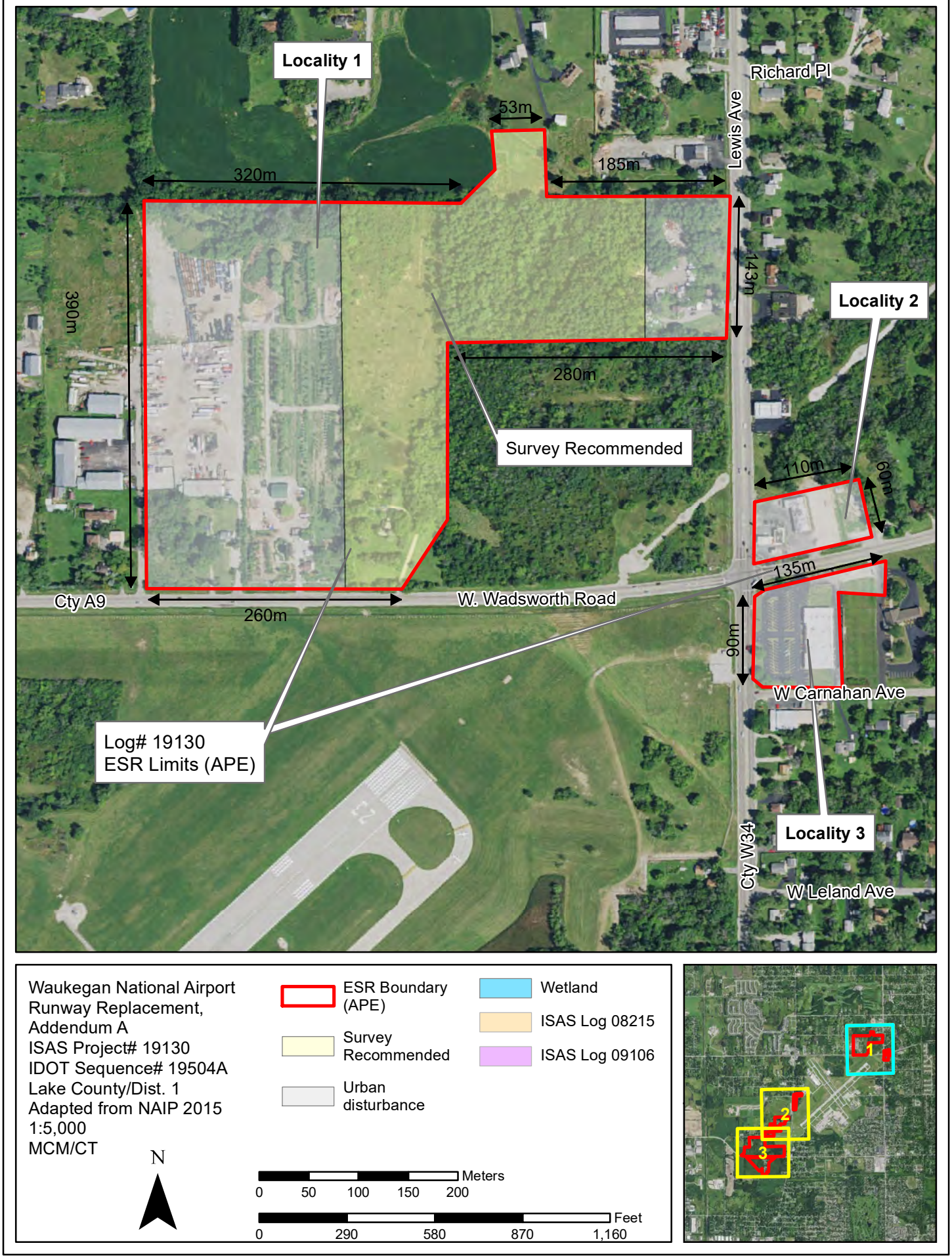


Figure 2.2: Aerial map showing areas recommended for survey and previous ISAS surveys within the APE.

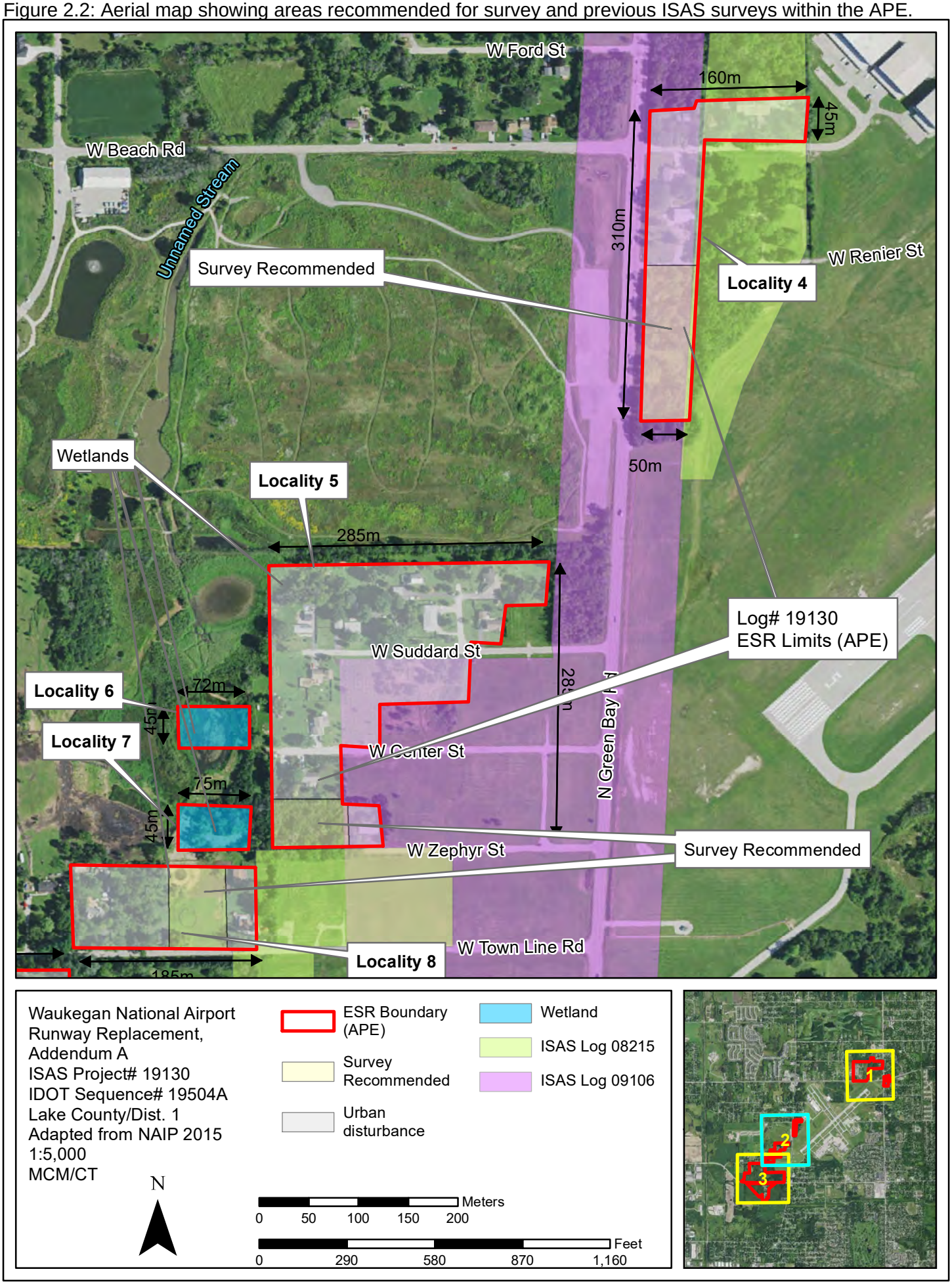


Figure 2.3: Aerial map showing areas recommended for survey and previous ISAS surveys within the APE.

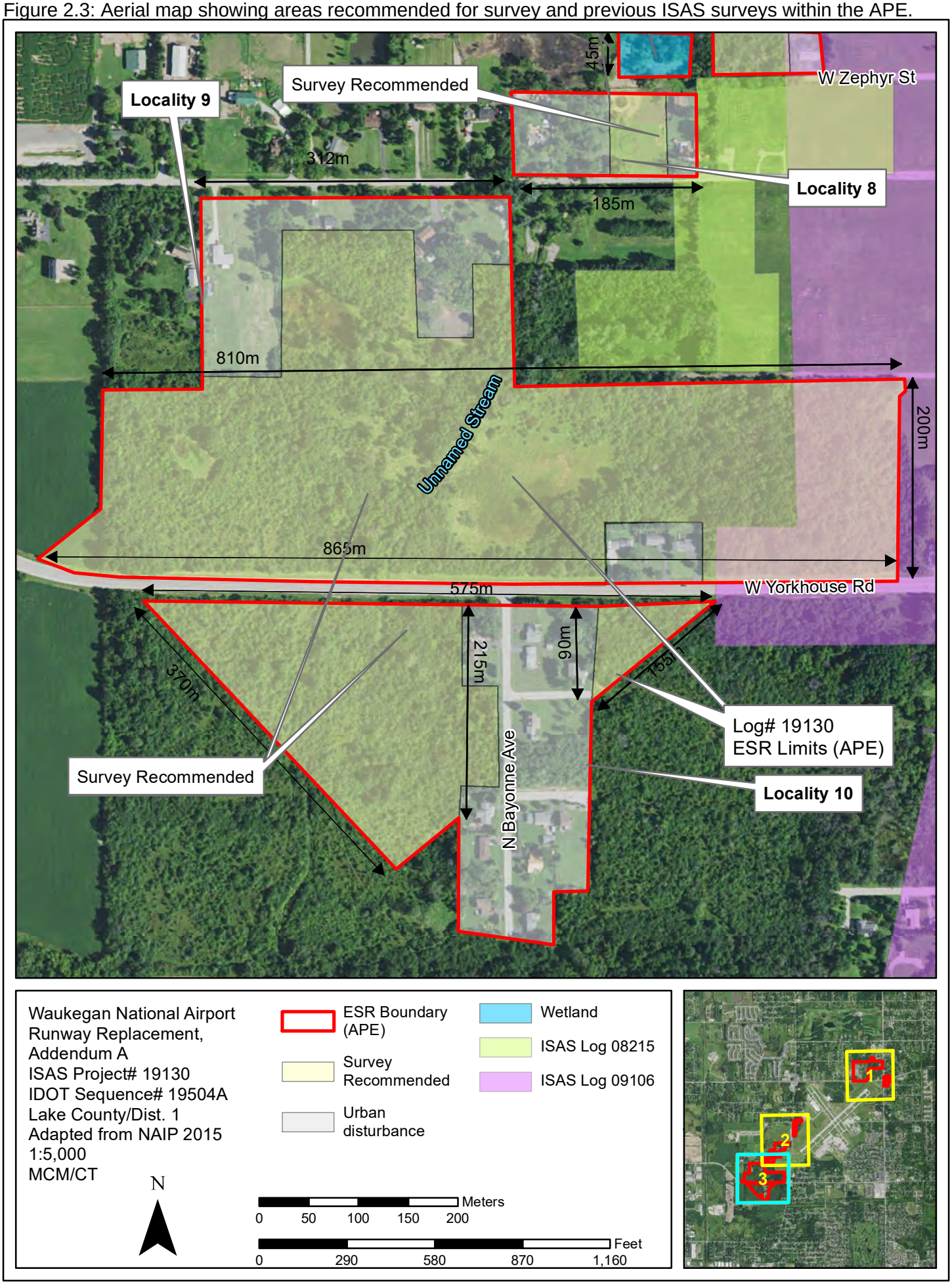


Figure 3.1: Sketch map showing survey conditions within the APE.

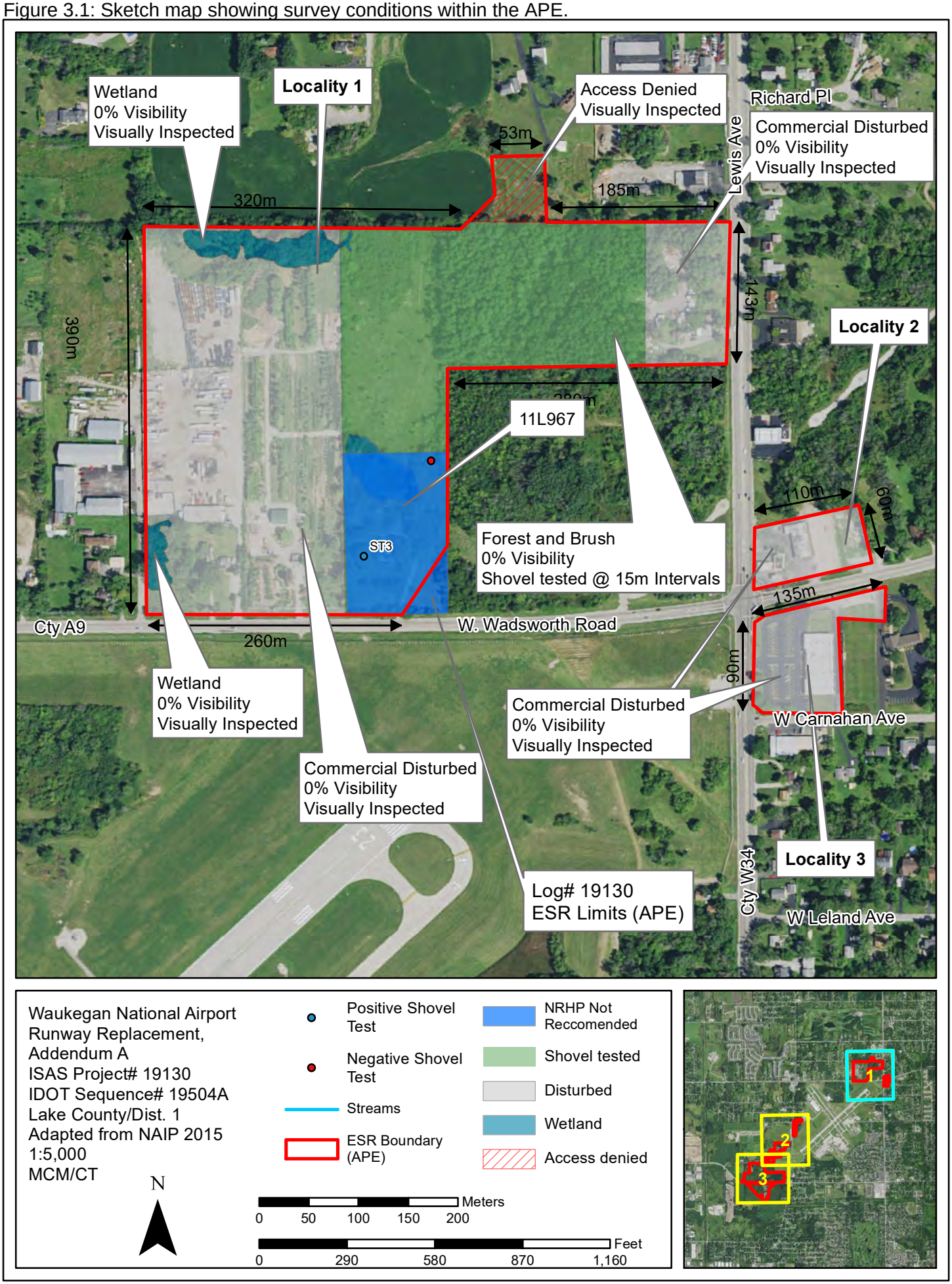


Figure 3.2: Sketch map showing survey conditions within the APE.

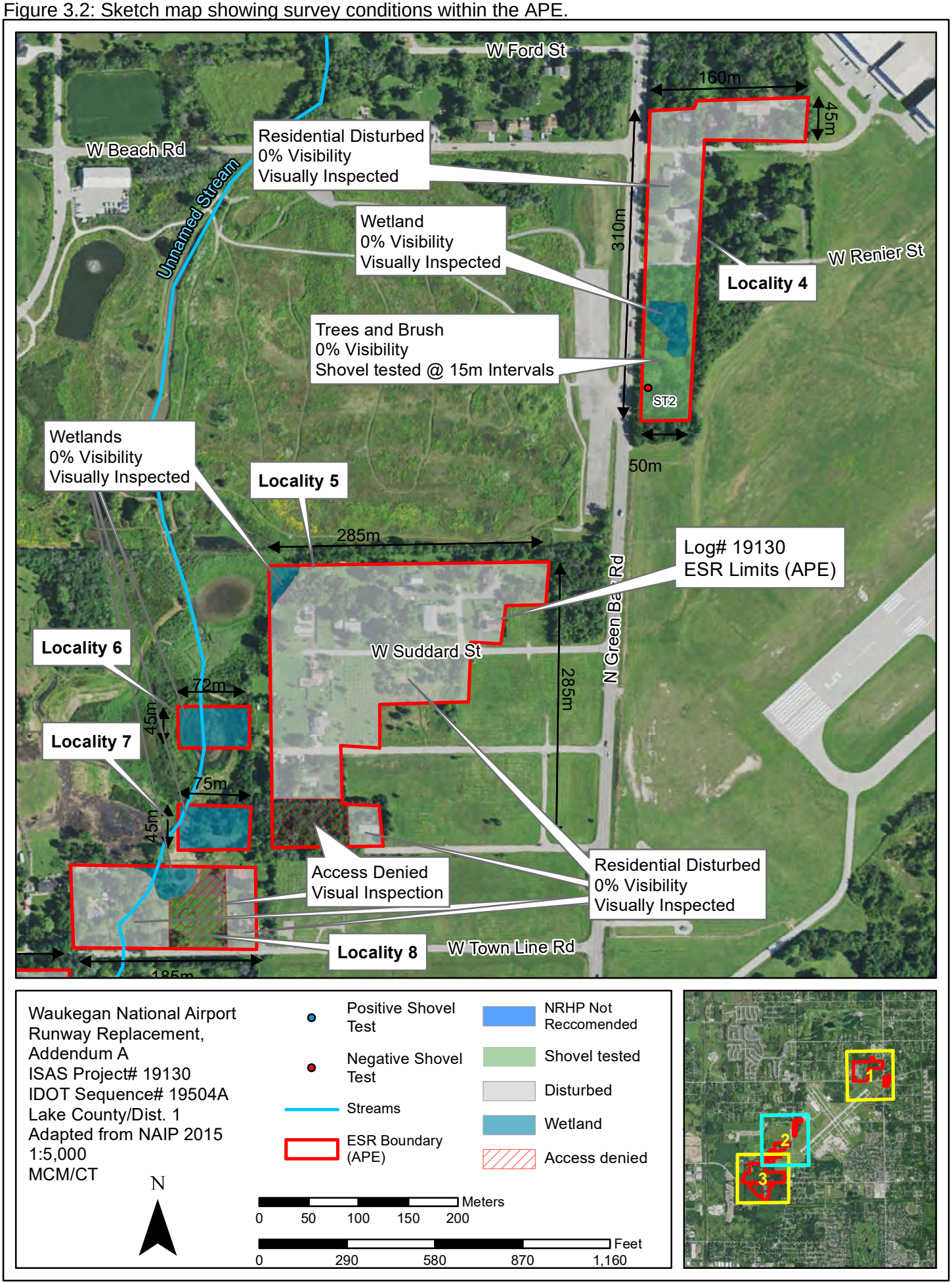


Figure 3.3: Sketch map showing survey conditions within the APE.

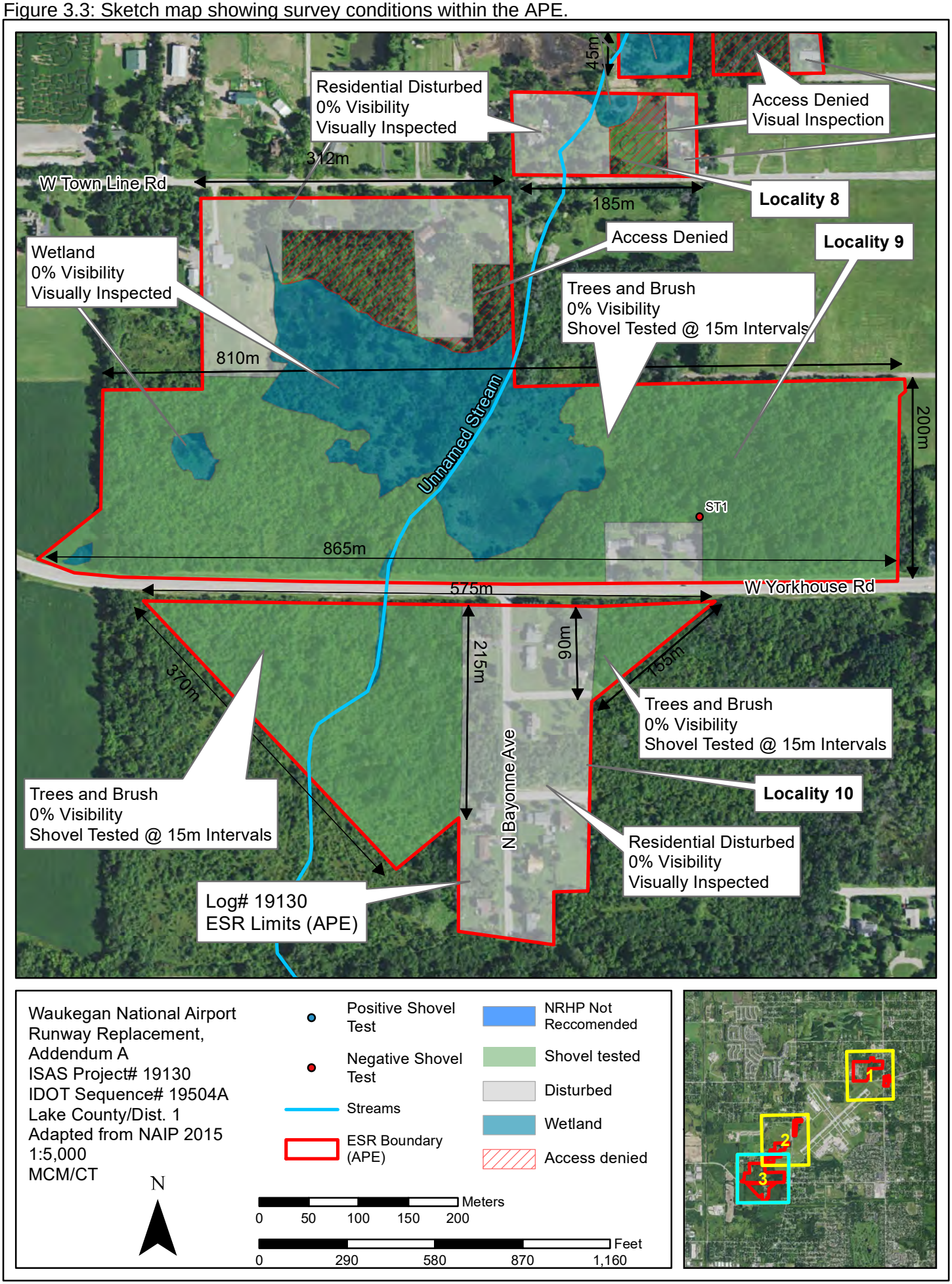
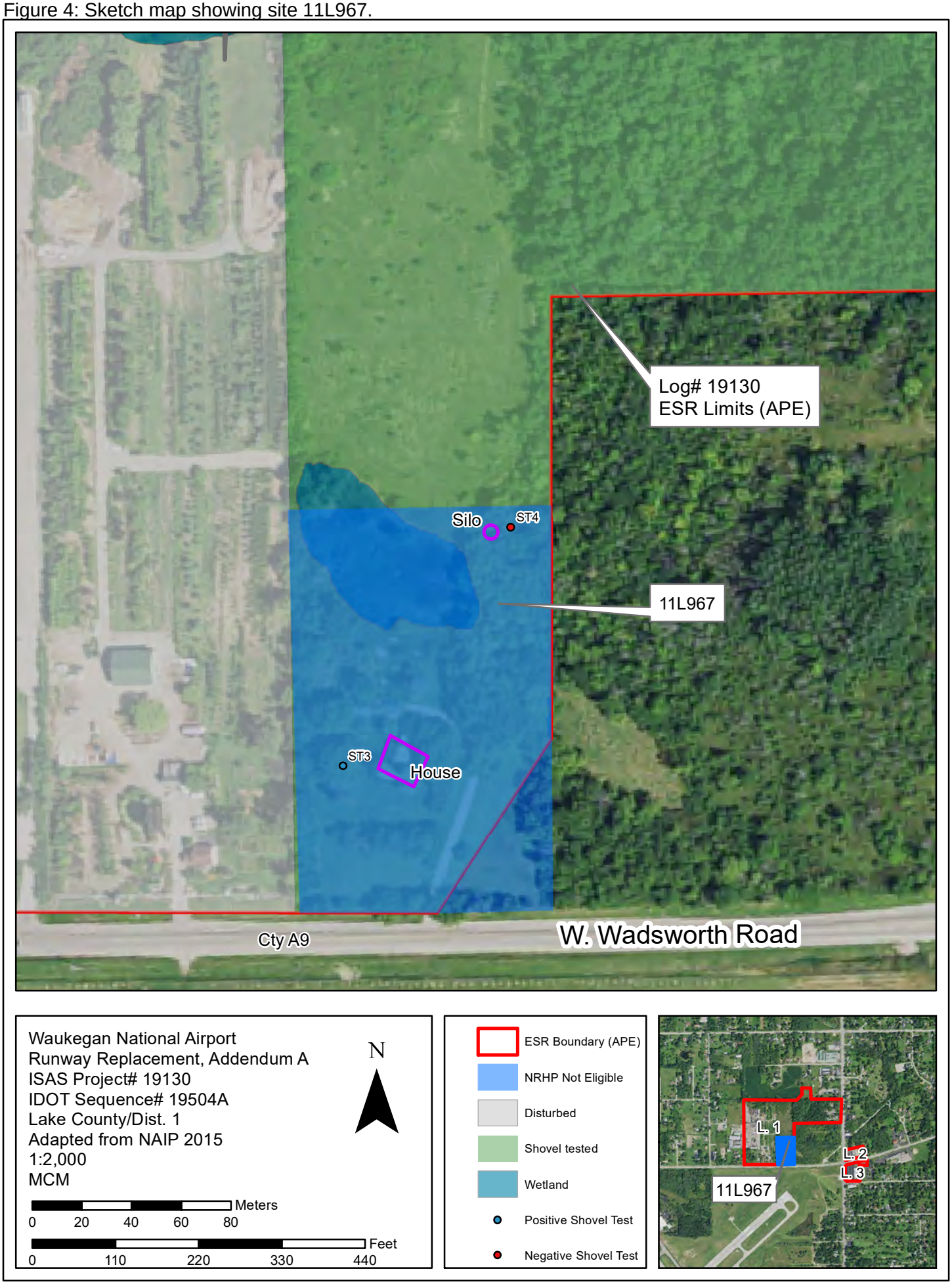


Figure 4: Sketch map showing site 11L967.



Appendix A
Historic Plats

ISAS Log No. 19130
IDOT Sequence No. 19504A

Waukegan National Airport Runway
Replacement, Addendum A

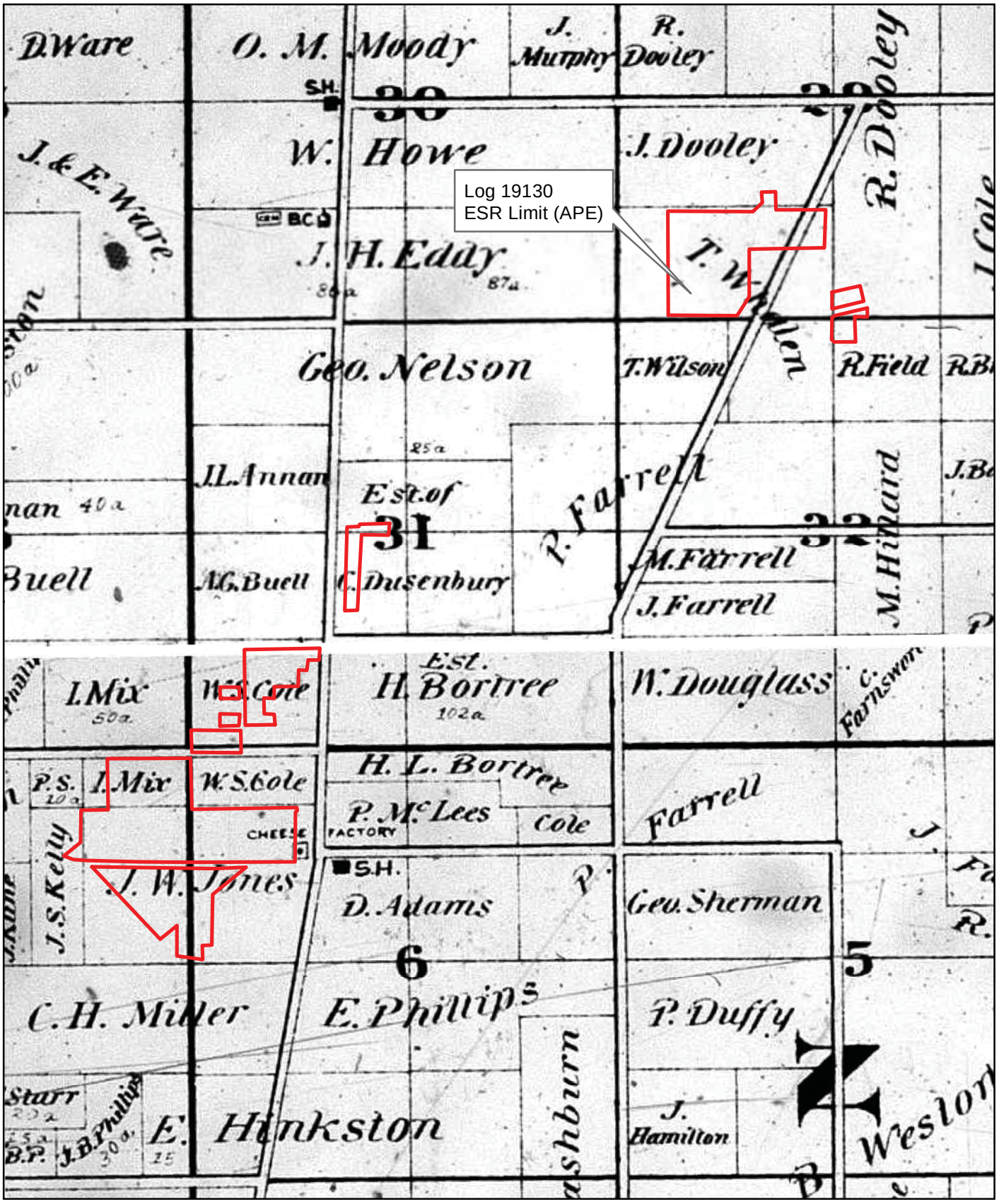
Lake County, District 1



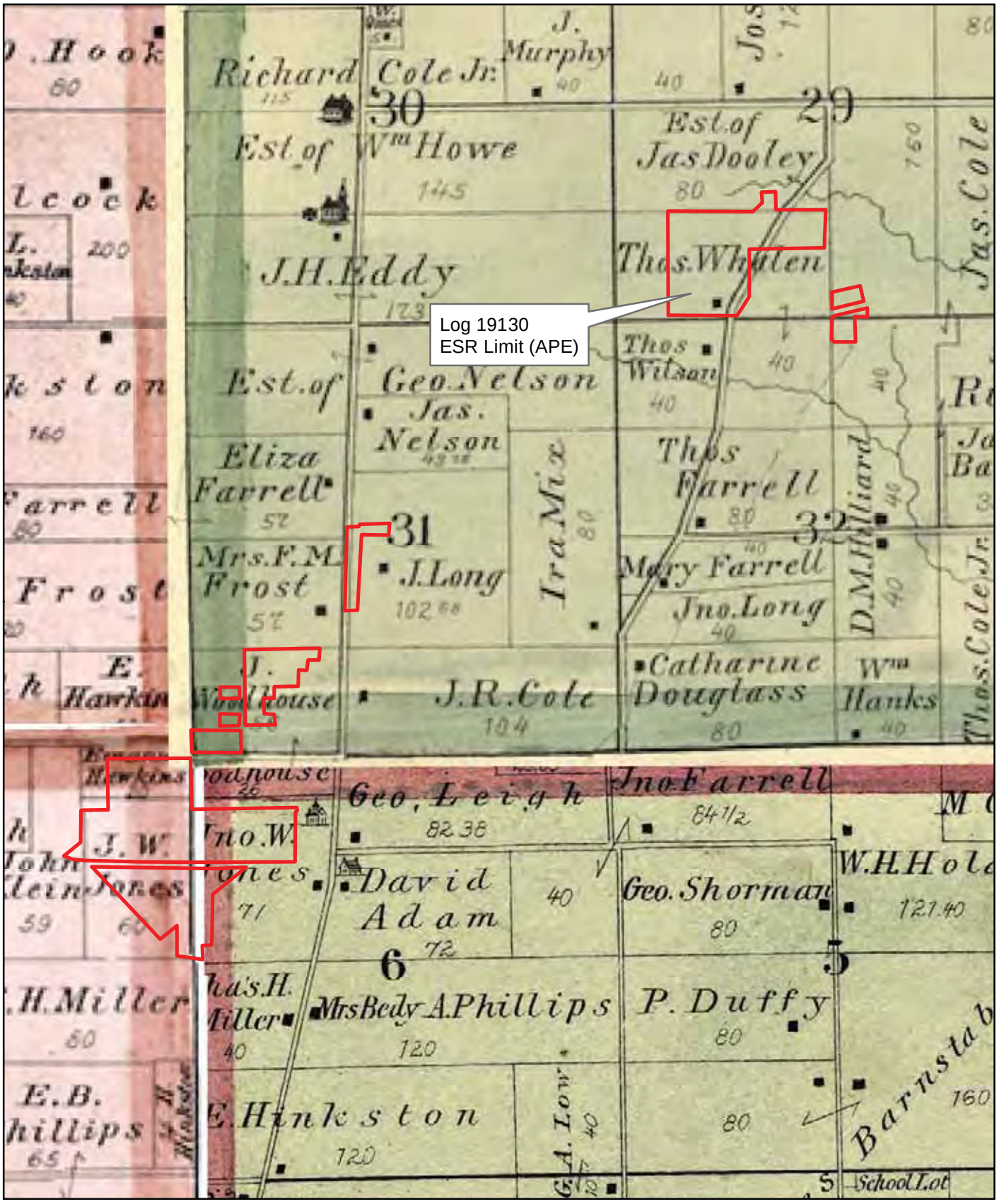
Lake County T46N R12E Secs. 29, 31, 32 (1840 29:64).
Lake County T45N R11E Sec. 1 (1840 29:45).
Lake County T45N R12E Sec. 6 (1840 29:65).



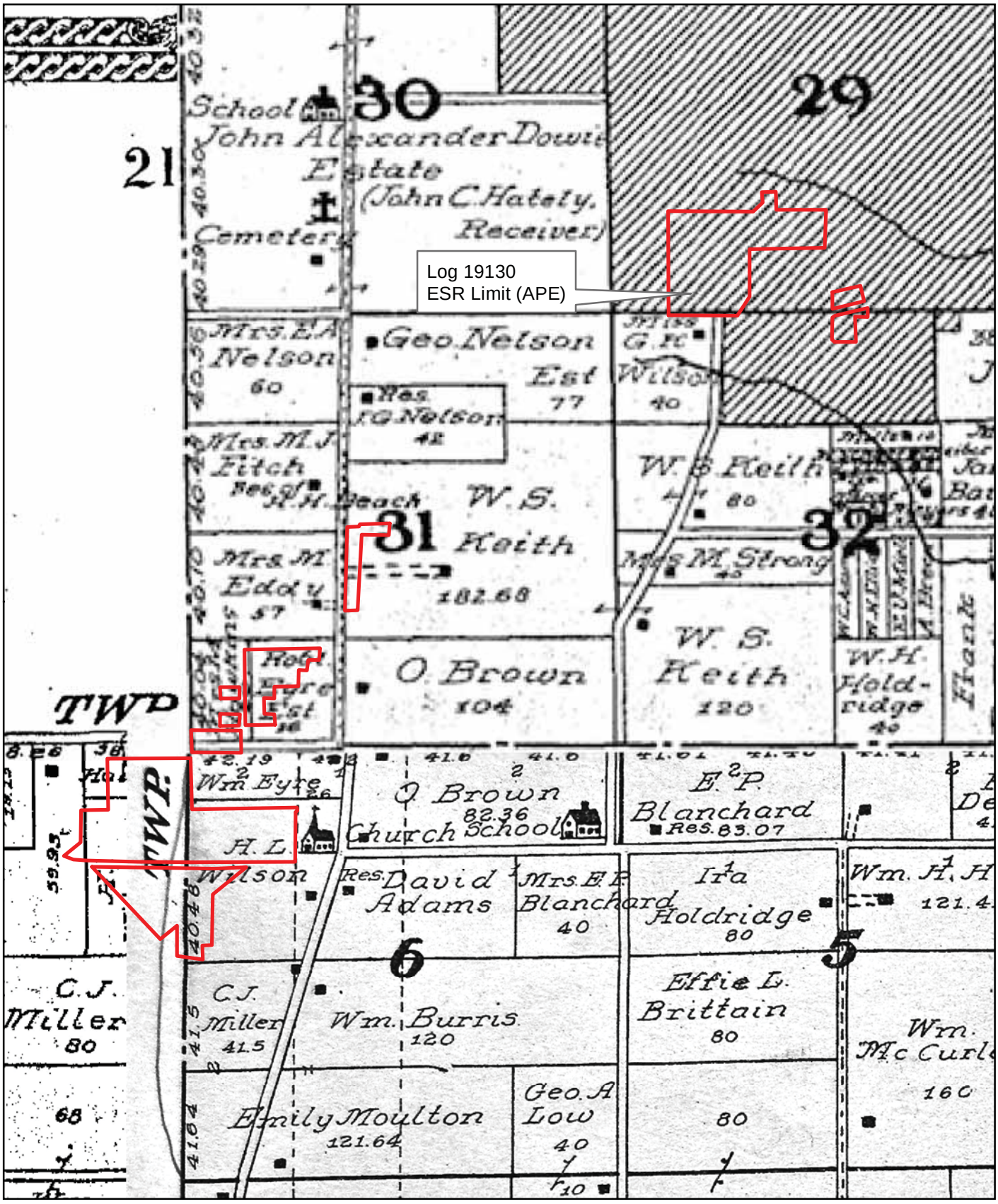
Lake County T46N R12E Secs. 29, 31, 32;
T45N R11E Sec. 1; T45N R12E Sec. 6
(Hale & Truesdell 1861).



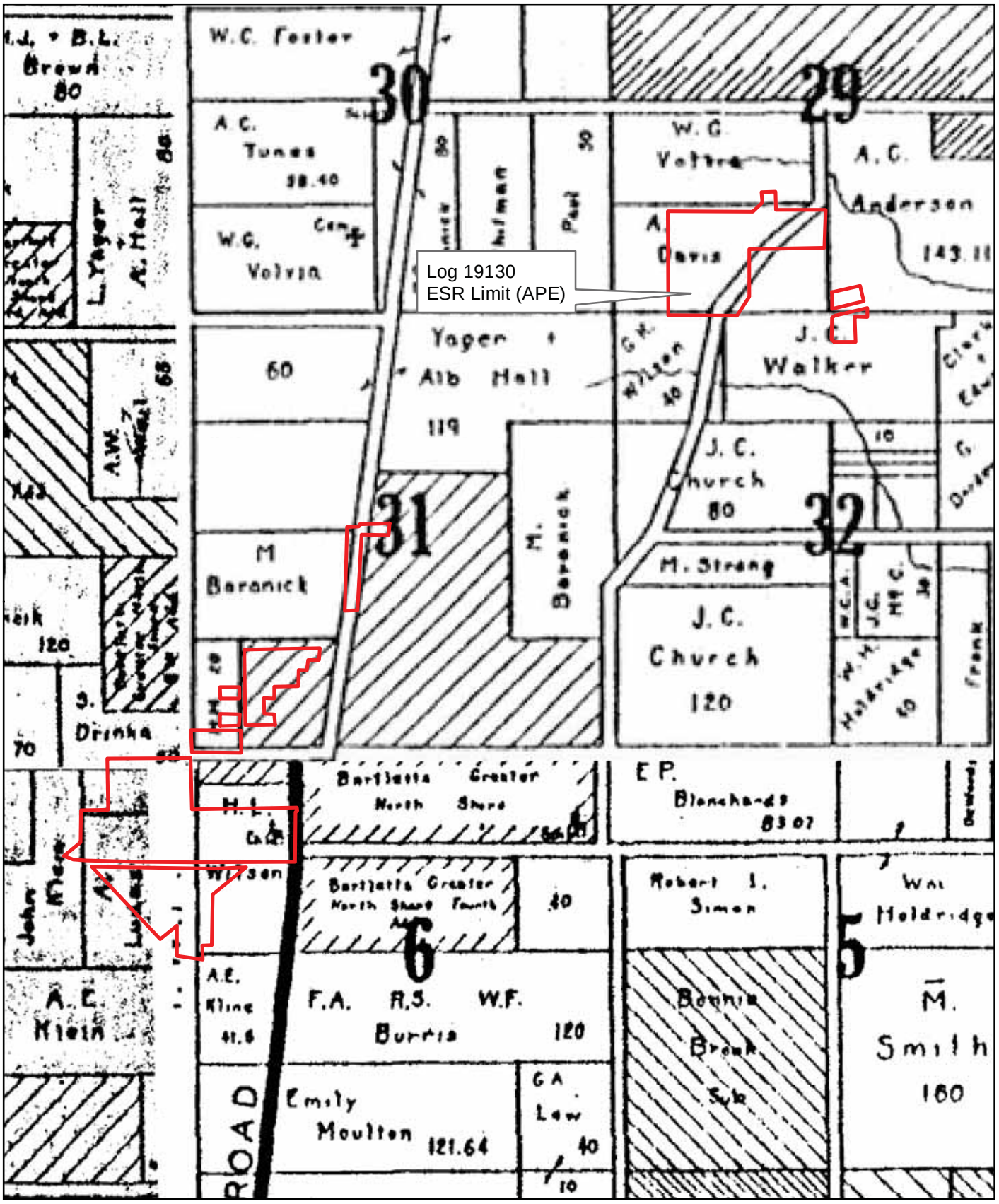
Lake County T46N R12E Secs. 29, 31, 32;
T45N R11E Sec. 1; T45N R12E Sec. 6
(Frost & McLennan 1873).



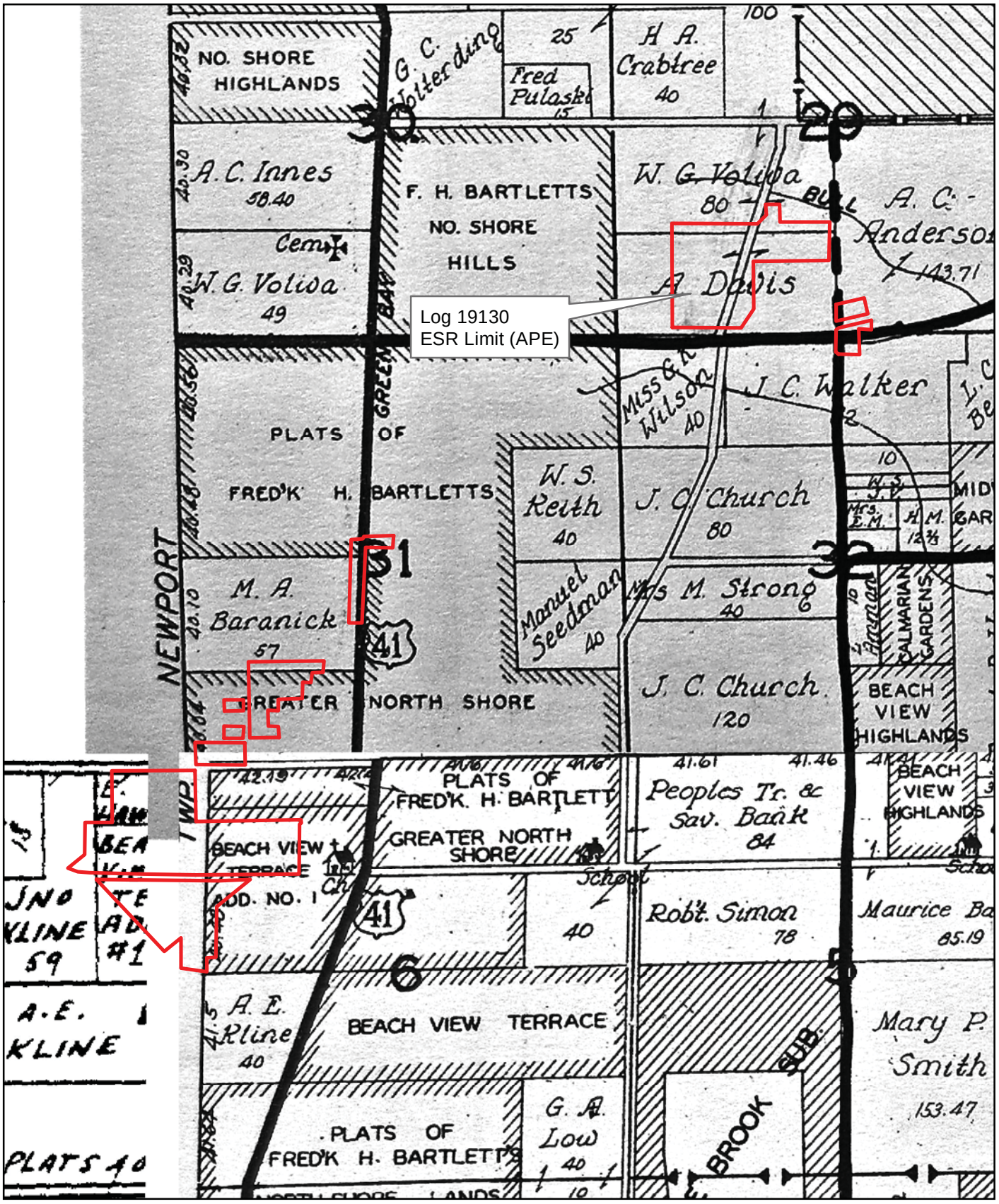
Lake County T46N R12E Secs. 29, 31, 32;
T45N R11E Sec. 1; T45N R12E Sec. 6
(H.R. Page 1885).



Lake County T46N R12E Secs. 29, 31, 32;
T45N R11E Sec. 1; T45N R12E Sec. 6
(George A. Ogle 1907).



Lake County T46N R12E Secs. 29, 31, 32;
T45N R11E Sec. 1; T45N R12E Sec. 6
(Thrift Press 1926).



Lake County T46N R12E Secs. 29, 31, 32;
T45N R11E Sec. 1; T45N R12E Sec. 6
(W. W. Hixson 1936).

Appendix B
IIAS Site Form

ISAS Log No. 19130
IDOT Sequence No. 19504A

Waukegan National Airport Runway
Replacement, Addendum A

Lake County, District 1

Illinois Archaeological Site Recording Form

County Lake **Site Name** **Revisit** N

Field No. FS2 **7.5' Quadrangle** Zion **County Site No.** 967

Ownership Private **Meridian** 3 **Township** 46 N **Range** 12 E **Section** 29 **Recorded** 2021.11.08

WGS84 Latitude 42.429102 **Longitude** -87.859173 **Site Area (sq. m)** 16,875

Known Alternate Names

ENVIRONMENT

Topography Other Upland **Drainage Basin** Pike-Root

Nearest Water Supply Unnamed Stream **Elevation (meters AMSL)** 213

Soil Association Morley-Markham-Beecher-Ashkum (s2277)

Description The site is 153m north-south by 102m east-west and is located immediately north of Wadsworth Rd and 290m west of Lewis Ave. It is North of the northeast corner of the Waukegan National Airport.

SURVEY

Project Name Log 19130 Waukegan Airport **Project Type** Phase I CRM

Ground Cover Forest **Surface Visibility %** 0

Survey Methods Shovel Test

Site Type Habitation **Standing Structure** Y

SITE CONDITION

Extent of Damage Severe **Main Cause of Damage** Development

MATERIALS OBSERVED

Survey Sampling Strategy Total Observation

Number of Prehistoric Artifacts (count or estimate) 3 **Number of Historic Artifacts (count or estimate)** 0

N	Prehistoric Diagnostic Artifacts	N	Historic Diagnostic Artifacts
N	Prehistoric Surface Features	Y	Historic Surface Features
N	Prehistoric Buried Features	N	Historic Buried Features

Ave. Depth (cm) 0 **Ave. Depth (cm)** 0

Description An old grain silo foundation is present within a barbed wire enclosure in the site. Additionally, 2 flake fragments and 1 block shatter were collected. The area around the house has many old rusted cars and other historic building debris..

TEMPORAL AFFILIATION

Y Prehistoric Unknown	Woodland	Protohistoric	Frontier Antebellum (1841-April 11, 1861)
Paleoindian	Early Woodland	Historic Native American	Civil War (April 12, 1861-April 9, 1865)
Archaic	Middle Woodland	Historic (generic)	Y Frontier Post-Civil War (April 10, 1865-1870)
Early Archaic	Late Woodland	Colonial (1673-1780)	Y Early Industrial (1871-1900)
Middle Archaic	Mississippian	Pioneer (1781-1840)	Y Urban Industrial (1901-1945)
Late Archaic	Upper Mississippian	Frontier (generic; 1841-1870)	Y Post-War (1946-present)

Description This site is a historic habitation site that is shown on the 1885 plat and the remnants of the site are visible on the 1939 aerial.

Surveyor Meizis et al **Institution** ISA **Survey Date** 2021.08.25 **Curation Facility** ISA

Form By Marie Meizis **Institution** ISA **Report Date** 2021.11.01 **NRHP Listing** N

SHPO Log No. **SHPO 1st Survey Doc No.**

Compliance Status **HSRPA** N

Updated 2020.01.23

Attachment 1
Environmental Survey Request
Documentation

ISAS Log No. 19130
IDOT Sequence No. 19504A

Waukegan National Airport
Runway Replacement, Addendum A

Lake County, District 1

Attachment 1

Attention: Central Office BD&E
19130 **Environment Section**
Room 330

Environmental Survey Request Addendum

A. Project Information ☐ Bio ☑ Cultural ☐ Wetlands ☐ Special Waste

Submittal Date: 10/16/2019 **Sequence No:** 19504 A
District: 1 **Requesting Agency:** Aeronauti Aeronautics **Project No:**
Contract #: **Job No.:**
Counties: Lake
Route: Waukegan National Airport **Marked:** IL 131
Street: Green Bay Road **Section:**
Municipality(ies): Waukegan and Beach Park **Project Length:** 3.2187 **km** 2 **miles**
FromTo (At): Wadsworth Road to Yorkhouse Road
Quadrangle: Zion & Wadsworth **Township-Range-Section:** T45N R11E S1, T45N R12E S6 & T46N R12E S29,31,32
Survey Target Date: 04/16/2020 **Anticipated Design Approval:** 12/31/2019 **Anticipated NEPA Processing:** EA

ISAS SCTD: 3-17-2020

B. Reason for Submittal: (Check all that apply) ; includes SW Level 1 Screening Criteriea

Survey Types: B = Biological; C = Cultural; SW = Special Waste

B,C,SW ☐ **Involves Acquisition of additional ROW or temporary or permanent easements. Addendum:** acres
Total Project: 100.000 **acres**

SW ☐ **On a state-maintained route, crosses or involves RR ROW (except a single rail rural ROW with no maintenance facilities).**
B,C ☐ **Requires In-Stream work (e.g., drainage structure runaround).** **Stream Name:**
C ☐ **Potential to affect a historic district or historic property.**
C ☐ **Involves replacement or rehabilitation of a bridge/culvert 40 years old or older.**
SW ☐ **Involves acquisition of, excavation (defined in BDE Manual 27-3.01) on, or subsurface utility relocation on State ROW.**

☑ **Other:** Cultural/Historical

C. Addendum Description: Replace Runway 5/23 including relocate N. Green Bay Road and W. Yorkhouse Road, inlcuding land acquisition and anciliary projects.

D. Tree Removal?: **Number?:** **ha/** **acres** ☐ **Within Mahomet SSA Project Review Area**

Wetland delineation performed by: **End. Species Consultation performed by:**

E.

Contact Person:	Alan Mlacnik, P.E.	**Local Contact Person:**	Skip Goss
Telephone #:	(217) 785-4884 ext.	**Telephone #:**	(847) 244-0055 ext.
Env.Contact:	Shawn Gibbs	**E-Mail:**	sgoss@waukeganport.com
Telephone #:	(217) 747-9228 ext.	**Title/Company:**	Airport Manager

F. ☐ **Update Entire Project**
☑ **Addendum Only**

☐ **Closed** ☐ **PSI/RMP Only** ☐ **ESR Rec'd in CO** ☐ **SW Rec'd**

Survey requested on 12-9-2019

Special Waste

Special Waste Submittal Date: 10/16/2019 **Anticipated Design Approval:** 12/31/2019 **Cleared for Design Approval:**

Cleared for Letting: **Survey Target Date:** 04/16/2020

Step 1: Level 1 Screening Criteria - District Sign-Off [27-3.02(a)]*

1. **Acquisition of additional right-of-way or easements (temporary or permanent)**
2. **Railroad ROW (other than single rail rural ROW with no maintenance facilities)**
3. **Excavation or subsurface utility relocation**

** For a Local Roads project, Level 1 and Level 2 screening criteria apply to the state route/state jurisdiction portion of the project. For the non-state route portion of the project, the Local Roads Manual/procedures should be followed. If all responses are No, then the SWC may Sign-Off the project. Projects answering "Yes" or "Don't Know" to #2 above are not eligible for District Sign-Off and must go through the PESA process. If any response is "Yes" or "Don't Know", continue to Step 2: Level 2 Screening Criteria.*

☐ **District Sign-Off of Special Waste - Level 1:** ☐ **Validation - Level 1**

Conducted By: **Revised Level 1 Sign-Off Date:**

Position:

Telephone #: **Ext.:**

Note: This Level 1 District Sign-Off is valid for a maximum of 6 months, after which it must be validated; enter a "Revised Level 1 Sign-Off Date" in the box to the right above and click the "Validation - Level 1" box.

Level 1 Screening Comments: *Include your name and date with your comments.*

Step 2: Level 2 Screening Criteria - District Sign-Off [27-3.02(b)]

☐ **If for any reason, the presence of any environmental condition cannot be determined from the site reconnaissance or from database searches, please check this box, add an explanation below, and submit for PESA.**

2.A. Does the project involve any of the following environmental conditions within the corresponding minimum search distance?

Environmental Condition	Minimum Search Distance	Database Search	Site Reconnaissance
Industrial and/or commercial property	0.25 miles		
Other Environmental Conditions* (Please detail below 1)	Property & adjoining property		
Crosses or otherwise involves RR ROW. (Please detail below 2)	Property & adjoining property		
State UST	Property & adjoining property		
State LUST	0.5 miles		
State Voluntary Cleanup, Brownfield, or landfills	0.5 miles		
Federal NPL; NPL delisted; SEMS; SEMS NFRAP	1.0 miles; 0.5 miles; 0.5 miles; 0.5 miles, respectively		
Federal RCRA CORRACTS facilities; RCRA non-CORRACTS TSD facilities	1.0 miles; 0.5 miles, respectively		
Federal RCRA generators list	Property & adjoining property		
Federal Brownfield sites	0.5 miles		
Federal ERNS System	Property		

1. *Other Environmental Conditions are identified through site reconnaissance and include current and historic situations that may negatively a the property including the presence of, for example, illegal dumping, unknown containers, waste associated with "crack" or methamphetam houses (i.e., discarded hazardous material on the outside of a property), battery piles, paint spills, abandoned transformers, surface stainin vegetative damage, etc. Historic land uses that include any of these activities also qualify.*

2. *Crosses or otherwise involves railroad ROW, other than a single rail rural ROW with no maintenance facilities.*

*** Describe Findings/Other Environmental Conditions:**

2.B. Were photographs taken of the site and/or surrounding area?

In an effort to identify any property or condition that may negatively affect the project site or potential historical, industrial and/or commercial use, the following sources of information can be helpful while screening the project.

2.C. Place a check next to each reference that is reviewed. (Optional)

☐ Google - type aerial maps	☐ Extranet data	☐ Historic Aerial Photos	☐ Survey Books	☐ Other Files & Photos
☐ City Directories	☐ County Assessor	☐ Sanborn Fire Insurance Maps	☐ Plat Books	
☐ Other source (describe):				

If any historical reference indicates the possible presence of a property or condition that may negatively affect the project site, then a PESA is required.

If all responses for database search and site reconnaissance are "No", then the District Special Waste Coordinator may sign-off the project. Ensure the special waste box in section A is checked. The level 2 District Sign-off is valid for a maximum of six months. If any response for database search and site reconnaissance is "Yes", or if a database search or site reconnaissance is not performed or is inconclusive, then a PESA is required. See BDE Manual 27-3 for additional instructions.

☐ **District Sign-Off of Special Waste - Level 2:**

Prepared by (name):
Organization/firm:
Position/title:
Telephone #: **Ext #:**
Email:

☐ **Validation - Level 2**

Revised Level 2 Sign-Off Date:
Cleared for Design Approval:

Note: This Level 2 District Sign-Off is valid for a maximum of 6 months. After that date, the District Sign-Off must be validated and a Revised Sign-Off Date entered in the box to the right above.

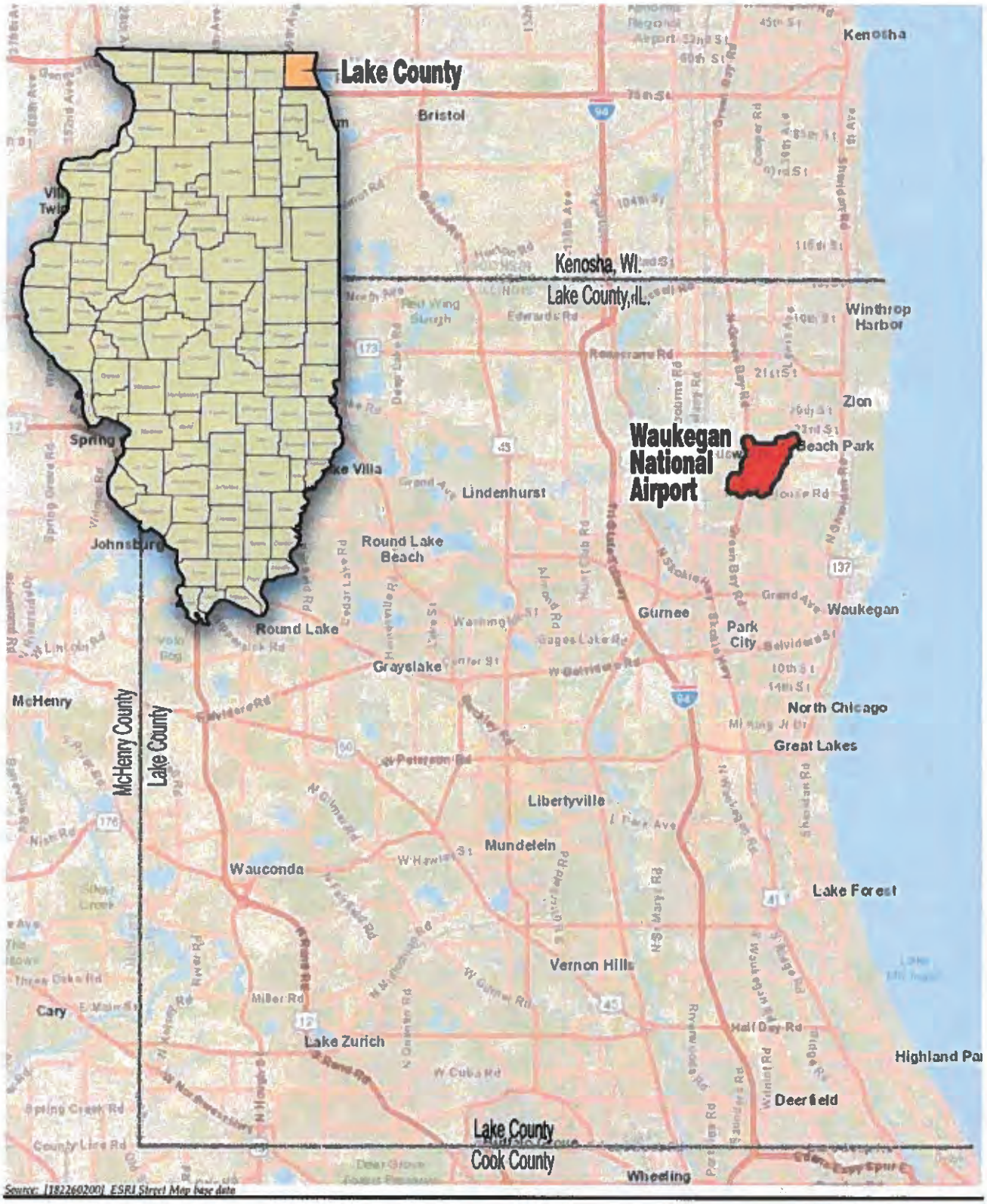
After this Level 1 or Level 2 District Sign-Off has been completed:
1. Email a screen shot or Adobe.pdf of the form to the Central Office, BDE, Environment Section, Geologic & Waste Assessment Unit for Processing.
2. Complete the Cleared for Design Approval step by clicking on the Dist/CBLRS tab and adding the date to the special waste cell.
3. Complete the Cleared for Letting step in a similar fashion.
4. Add explanatory note in the Addtl. Info tab.

For questions about this form, see the submittal instructions, contact the District Special Waste Coordinator or contact the BDE Geologic & Waste Assessment Unit.

Attachment 1

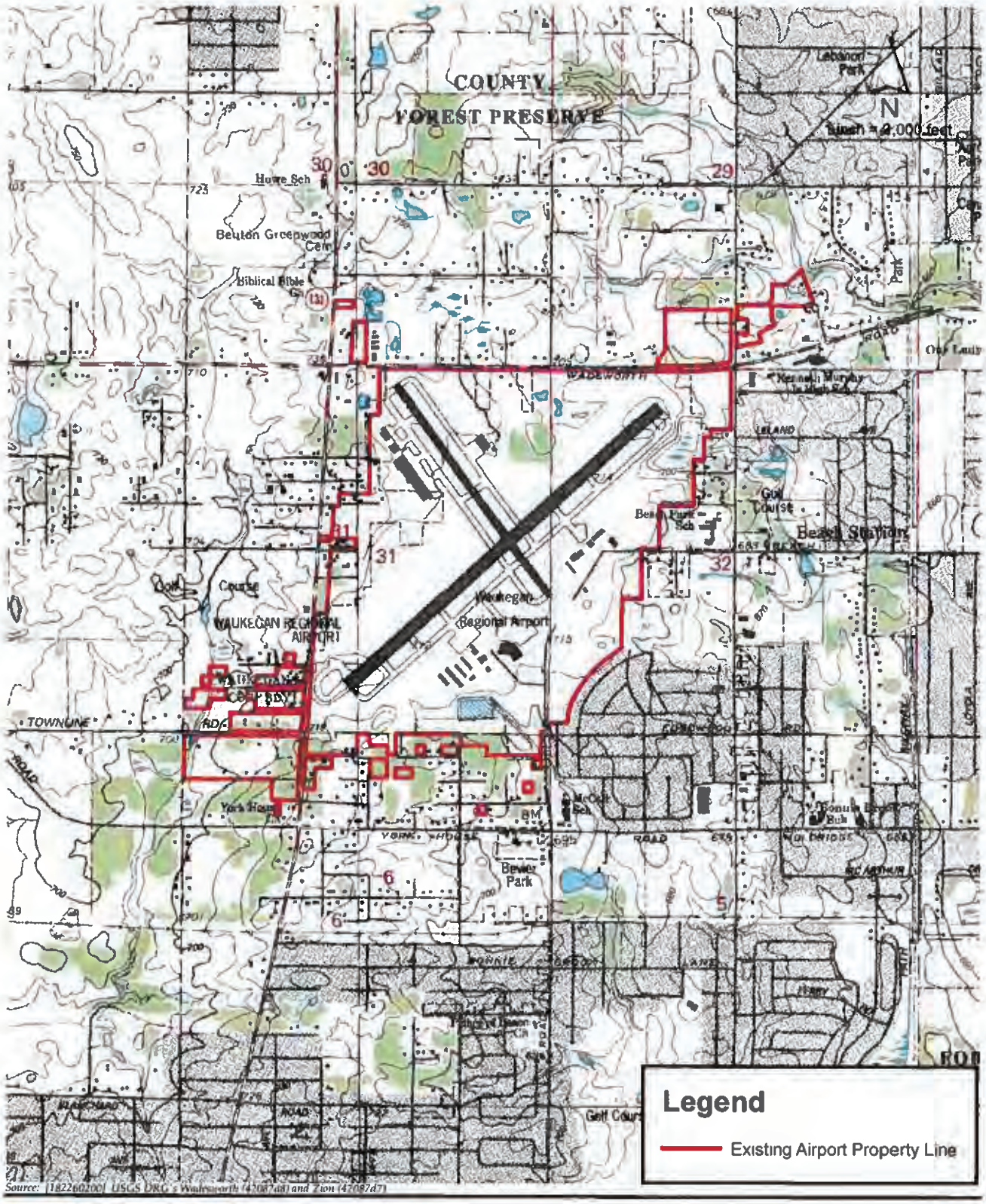
Sequence No: **19504 A**

Memo Date:	10/16/2019	**Memo By:**	Lana Sumner, CMT
Memo:	This is an amended submittal that was originally cleared on 2/2/16 under Sequence #19504 (see attached). The orginal sponsor's proposed action exhibit has been attached for reference. The project has been modified with additional areas of disturbance and addiitonal proposed properties to be acquired.		



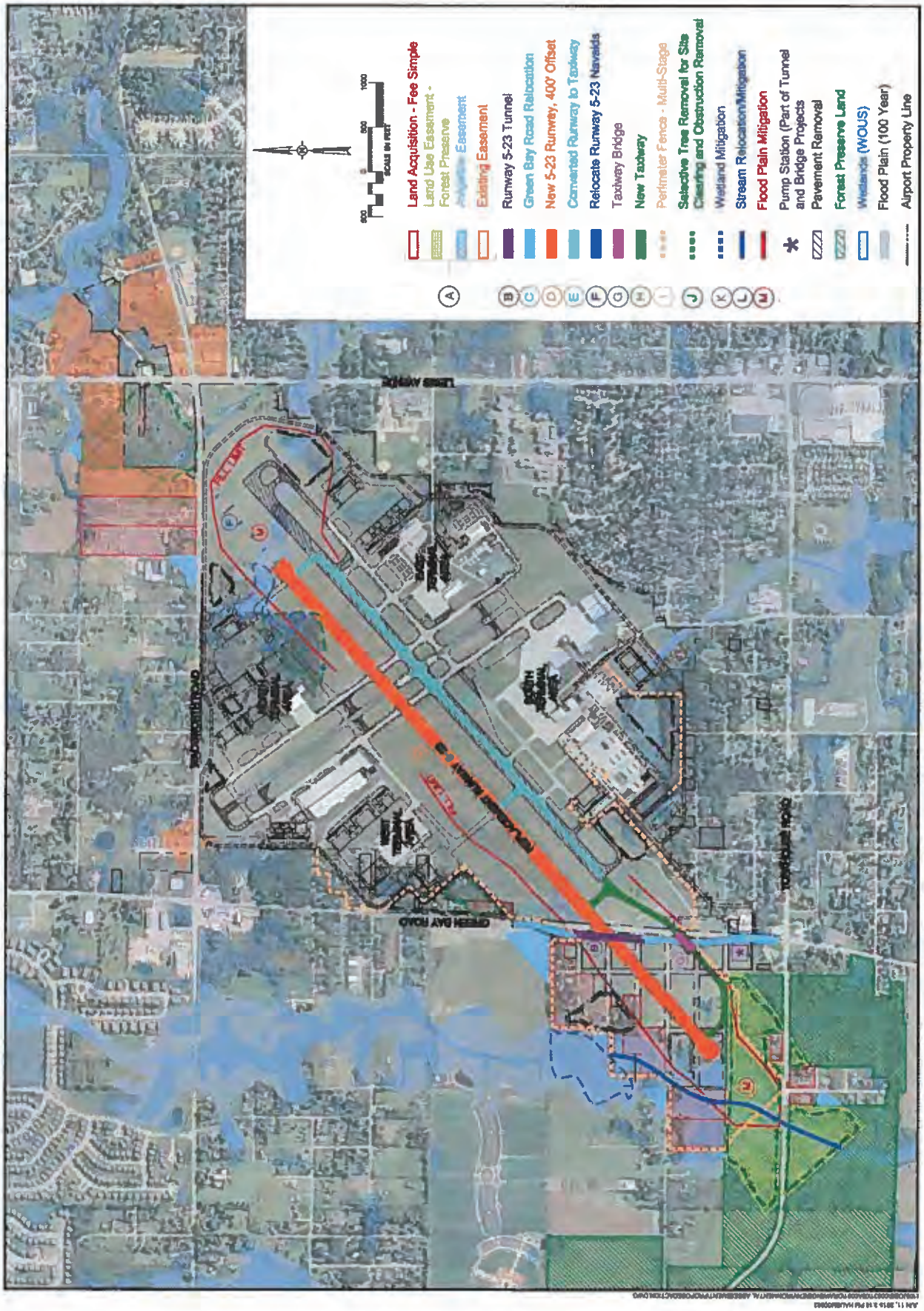
Location Map

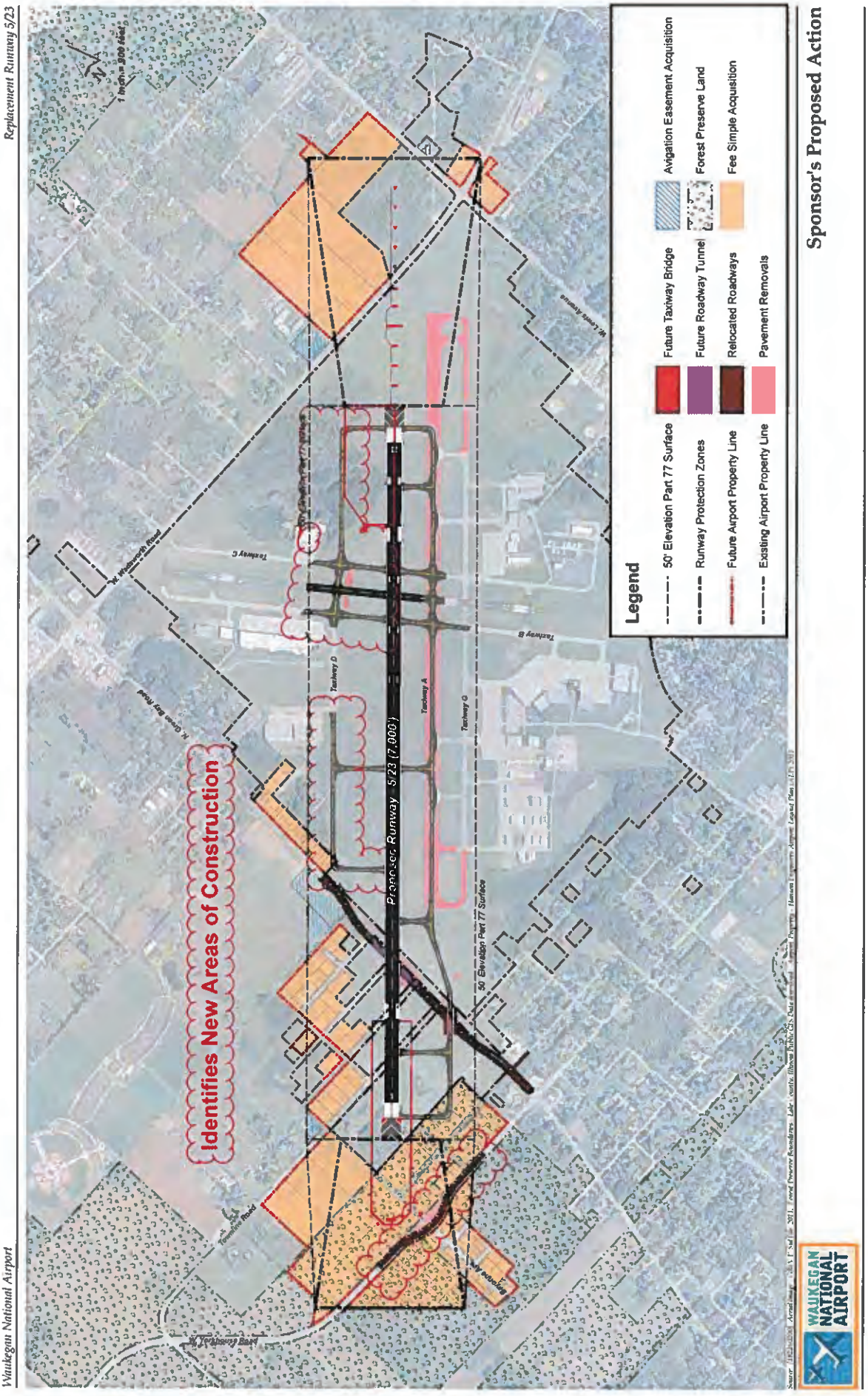
Exhibit 1-1



WAUKEGAN NATIONAL AIRPORT

USGS Map


HANSON
Hanson Professional Services Inc.
Illinois Licensed Professional Service Corporation
WAUKEGAN NATIONAL AIRPORT
MASTER PLAN - ENVIRONMENTAL ASSESSMENT
SPONSORS PROPOSED ACTION
3
Land Acquisition - Fee Simple
Land Use Easement - Forest Preserve
Avigation Easement
Existing Easement
Runway 5-23 Tunnel
Green Bay Road Relocation
New 5-23 Runway, 400' Offset
Converted Runway to Taxiway
Relocate Runway 5-23 Navaids
Taxiway Bridge
New Taxiway
Perimeter Fence - Multi-Stage
Selective Tree Removal for Site Clearing and Obstruction Removal
Wetland Mitigation
Stream Relocation/Mitigation
Flood Plain Mitigation
Pump Station (Part of Tunnel and Bridge Projects
Pavement Removal
Forest Preserve Land
Wetlands (WOUS)
Flood Plain (100 Year)
Airport Property Line
GREEN BAY ROAD
NEW 5-23 RUNWAY 400' OFFSET


Waukegan National Airport
Replacement Runway 5/23
Sponsor's Proposed Action
Identifies New Areas of Construction
Legend
50' Elevation Part 77 Surface
Runway Protection Zones
Future Airport Property Line
Existing Airport Property Line
Future Taxiway Bridge
Future Roadway Tunnel
Relocated Roadways
Pavement Removals
Avigation Easement Acquisition
Forest Preserve Land
Fee Simple Acquisition
Taxiway A
Taxiway B
Taxiway C
Taxiway D
Taxiway G
N. Green Bay Road
N. Whitworth Road
W. Lewis Avenue
Tomkins Road
WAUKEGAN NATIONAL AIRPORT

ILLINOIS
DEPARTMENT OF NATURAL RESOURCES

Illinois Department of **Natural Resources**

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

JB Pritzker, Governor
Colleen Callahan, Director

Lake County PLEASE REFER TO: SHPO LOG #001061615
Waukegan
Sections: 29, 31, Section:32-Township:46N-Range:12E, Section:1-Township:45N-Range:11E, Section:6-Township:45N-Range:12E,
Site: 11L967, Section:29-Township:46N-Range:12E, Section:31-Township:46N-Range:12E,
3550 N. McAree Rd.
FAA, IDOT Seq #-19504A, IDOT/ISAS#-19130
Land Acquisition, Runway Lengthening & Relocation, Taxiway Bridge and Roadway Tunnel Construction, Connector Taxiways and Reloca

May 10, 2022

Terry Schaddel
Crawford, Murphy & Tilly
2750 West Washington St.
Springfield, IL 62702

Dear Mr. Schaddel:

We have reviewed the documentation submitted for the referenced project(s) in accordance with 36 CFR Part 800.4. Based upon the information provided, no historic properties are affected. We, therefore, have no objection to the undertaking proceeding as planned.

Please retain this letter in your files as evidence of compliance with section 106 of the National Historic Preservation Act of 1966, as amended. This clearance remains in effect for two (2) years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Skeletal Remains Protection Act (20 ILCS 3440).

If you are an applicant, please submit a copy of this letter to the state or federal agency from which you obtain any permit, license, grant, or other assistance. If further assistance is needed contact Jeff Kruchten, Chief Archaeologist at 217/785-1279 or Jeffery.kruchten@illinois.gov.

Sincerely,

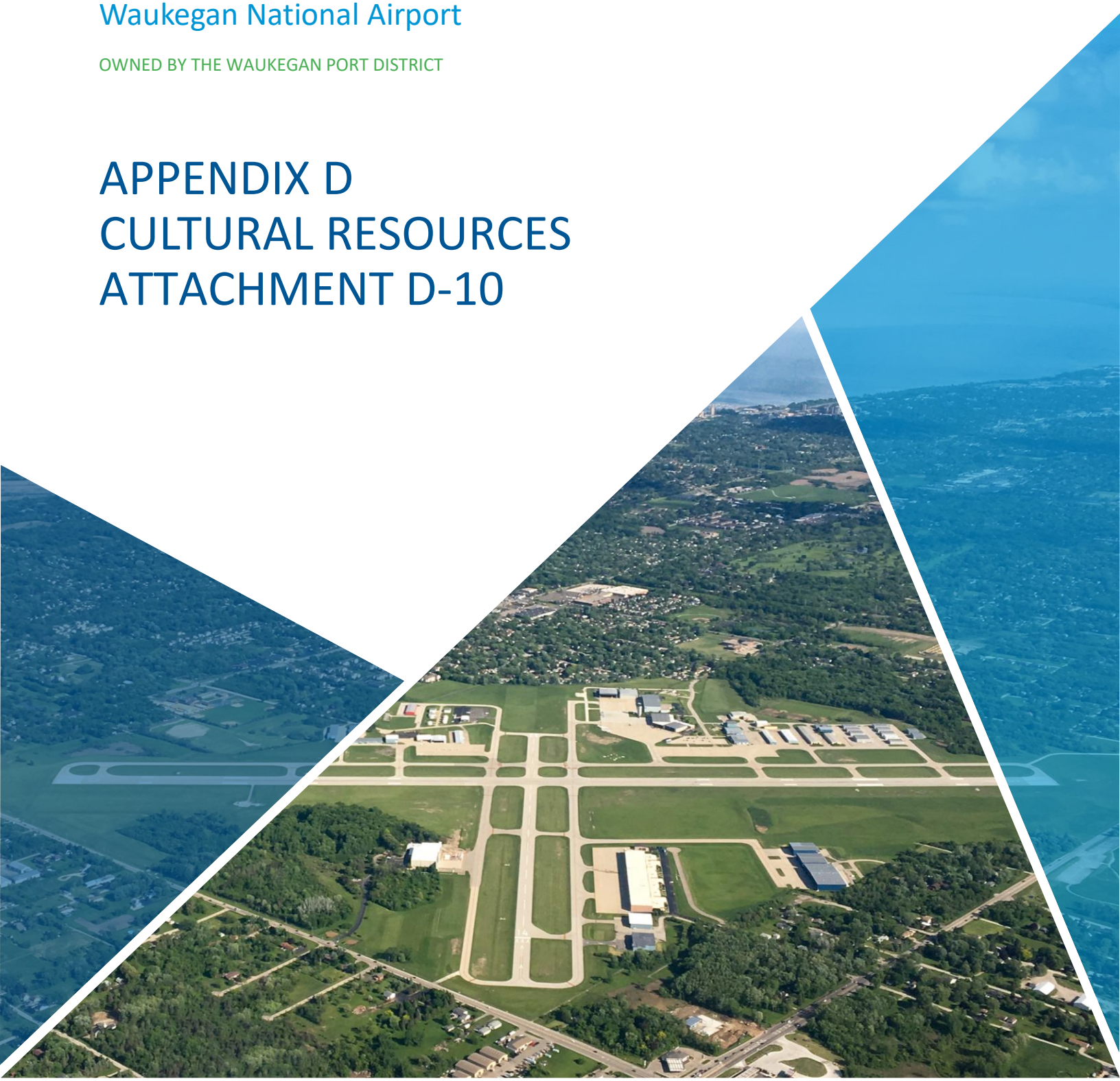
Carey L. Mayer

Carey L. Mayer , AIA
Deputy State Historic
Preservation Officer

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-10



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

RECEIVED
AUG 21 2020
Preservation Services

Lake County
Waukegan
Waukegan National Airport
Runway Improvements
IDOT Sequence # 19504A
SHPO Log #001061615

August 21, 2020

IHPA REVIEW
H/A _____
AC _____
AR _____
File _____

FEDERAL – SECTION 106 PROJECT

Historic Architectural Resources

Concur
NHPA in APE
RB 8/31/2020

Ms. Carol J. Wallace
Cultural Resources Coordinator
Illinois State Historic Preservation Office
Illinois Department of Natural Resources
1 Old State Capitol Plaza
Springfield, Illinois 62701

Dear Ms. Wallace:

In ongoing consultation with your office for the above referenced undertaking, the Illinois Department of Transportation (IDOT) in coordination with the Federal Aviation Administration (FAA) plans to extend runways and runway protection zones at the Waukegan National Airport. The undertaking with preliminary plans was initially reviewed by your office in 2015 with a finding of No Historic Properties Affected. On May 22, 2020, your office concurred that the undertaking would have No Adverse Effect to archaeological resources, provided that field surveys are completed for parcels at six localities and the results are coordinated with your office.

The identification and evaluation of architectural resources has been completed by IDOT Architectural Historian, Elizabeth L. Roman. The definition and justification of the Area of Potential Effects (APE), methodology, and results are provided in the enclosed memorandum with attached photo logs and maps. No architectural resources in the APE are eligible for listing on the National Register of Historic Places (NRHP) due to a lack of integrity, historically significant associations, and/or architectural significance.

In coordination with the FAA, IDOT requests the concurrence of the State Historic Preservation Officer in our determination that the architectural resources in the APE are Not Eligible for NRHP listing, and thus, please concur with our finding of No Historic Properties Affected regarding architectural resources.

In accordance with 36 CFR Part 800.3(c)(4), the FAA and IDOT will proceed to the next step in the Section 106 process if we do not receive a written response from your office within 30 days.

Sincerely,

Brad H. Koldehoff
Cultural Resources Unit Chief
Bureau of Design & Environment

BK:br

CONCUR

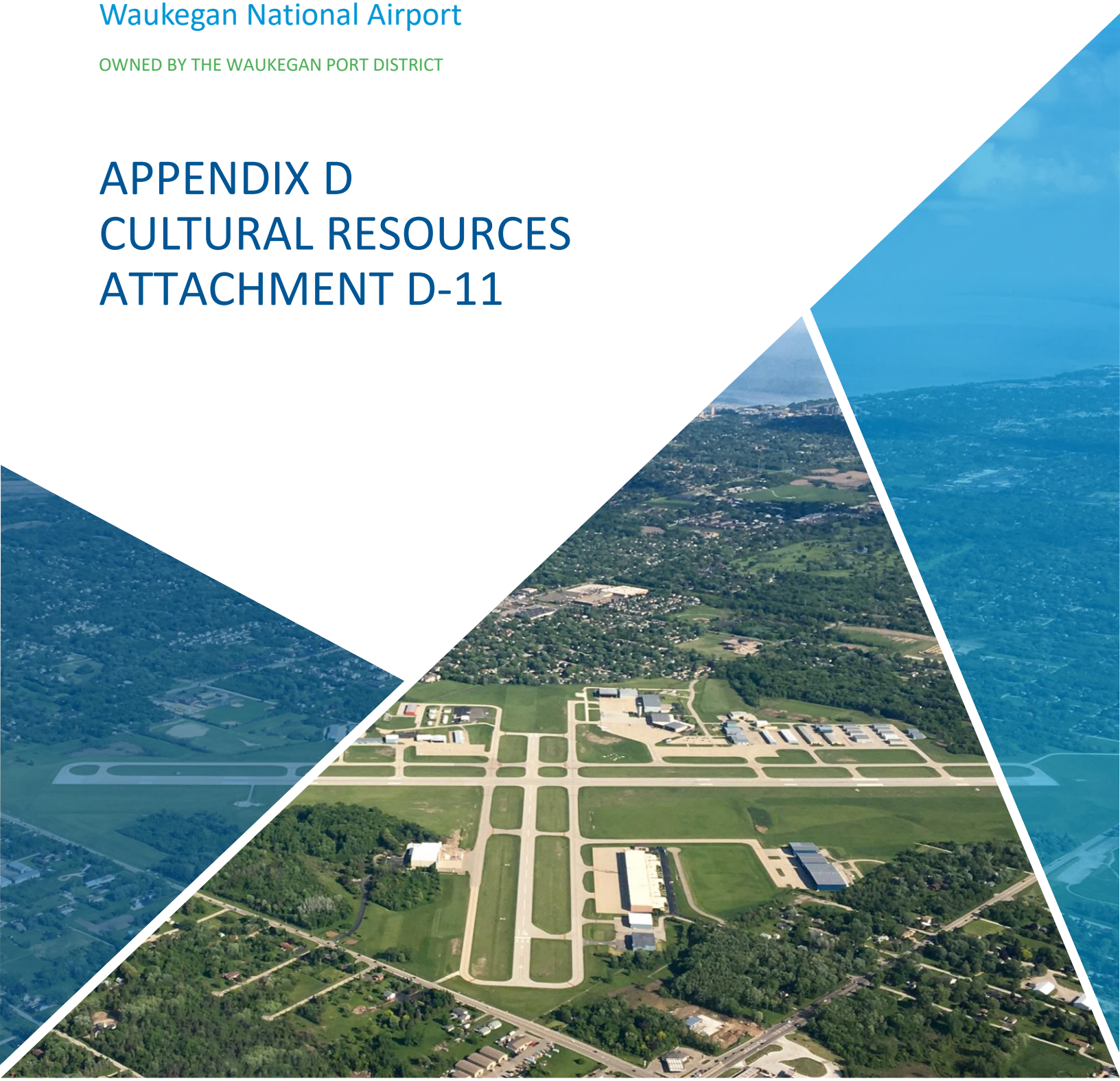
By: Robert Appleman
Deputy State Historic Preservation Officer

Date: 8/31/2020

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-11



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

From: info@isas.illinois.edu
To: Koldehoff, Brad H.; scatter1@illinois.edu; mgfarkas@illinois.edu
Subject: [External] New Comment for Sequence# 19504 A, Log# 19130
Date: Tuesday, January 7, 2020 10:26:38 AM

---

dhunter@miamination.com has left the following comment:

January 7, 2020

Re: Log # 19130, Sequence # 19504 A, located in Waukegan and Beach Park, replacing Runway 5/23 at Waukegan National Airport – Comments of the Miami Tribe of Oklahoma

Greetings:

Aya, kikwehsitoole – I show you respect. My name is Diane Hunter, and I am the Tribal Historic Preservation Officer for the Federally Recognized Miami Tribe of Oklahoma. In this capacity, I am the Miami Tribe's point of contact for all Section 106 issues.

The Miami Tribe offers no objection to the above-mentioned project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to the project site. However, as this site is within the aboriginal homelands of the Miami Tribe, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case, please contact me at 918-541-8966 or by email at dhunter@miamination.com to initiate consultation.

The Miami Tribe accepts the invitation to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer I am the point of contact for consultation.

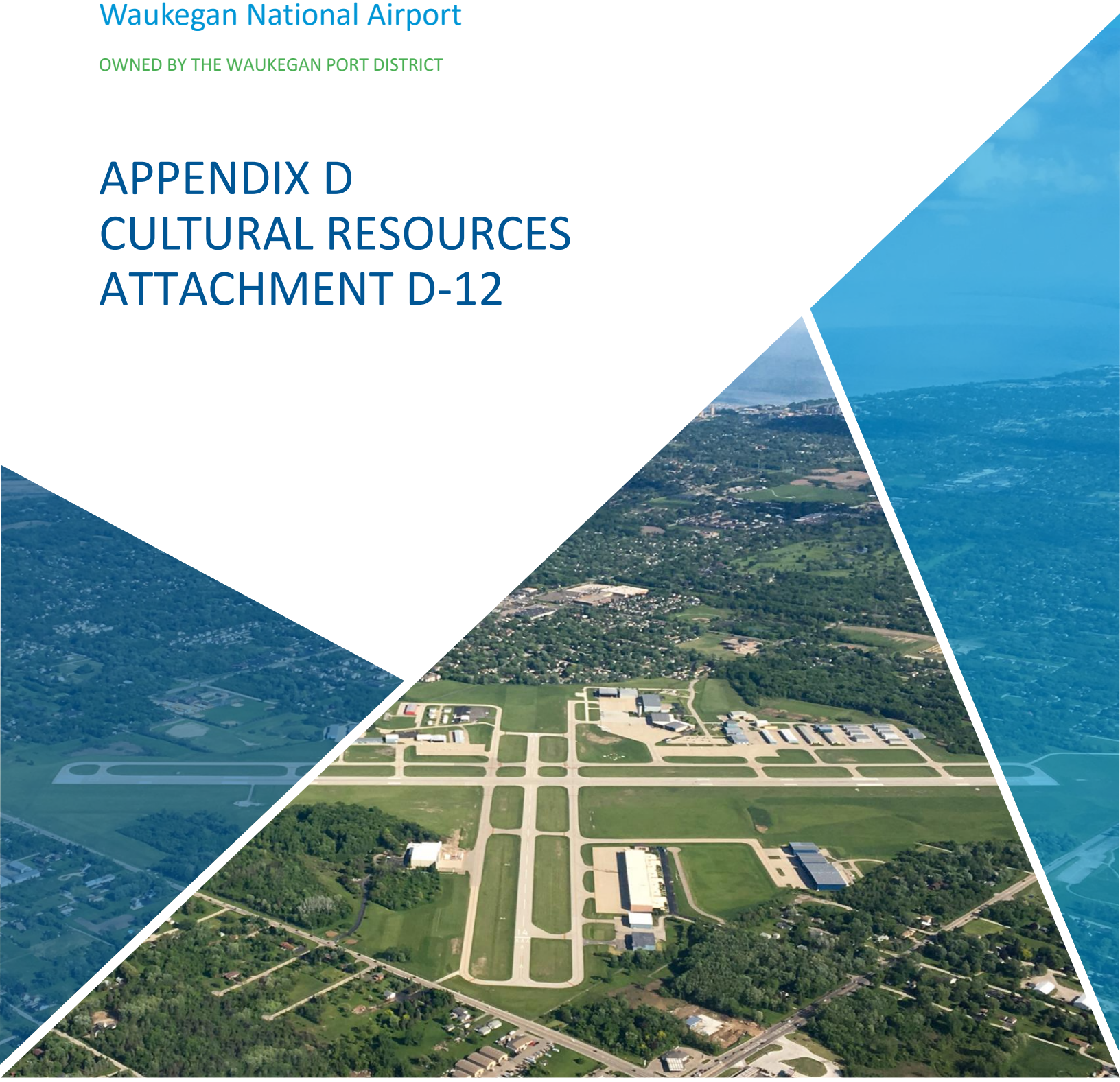
Respectfully,

Diane Hunter
Tribal Historic Preservation Officer
Miami Tribe of Oklahoma
P.O. Box 1326
Miami, OK 74355

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX D
CULTURAL RESOURCES
ATTACHMENT D-12



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

U.S. Department
of Transportation
Federal Aviation Administration

Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018
Phone: (847) 294-7336
Fax: (847) 294-7046

December 19, 2025

State Historic Preservation Officer
Illinois Department of Natural Resources
IDNR – One Natural Resources Way
Springfield, IL 62702

RE: Historic, Archaeological, and Cultural Resources Study for proposed Land Acquisition for the relocation of a runway at Waukegan National Airport in Waukegan, IL.

To Whom it May Concern:

The Waukegan Port District is proposing to build a replacement runway to the existing Runway 5/23 at Waukegan National Airport (UGN) in Waukegan, Illinois. The proposed work would involve acquiring parcels of land to expand the airport boundaries for the new runway. The need for the runway relocation is to correct non-standard airfield facilities of the existing runway. The Federal Aviation Administration (FAA) has approval authority over the project, and the Waukegan Port District may seek federal funding for the project, which requires an Environmental Review of the project.

The Illinois State Historic Preservation Office (SHPO) has previously reviewed and rendered a determination of the project in the past (SHPO LOG: 001061615). That determination included the property at 12832 Suddard Street, Beach Park, IL 60087. At the time of the determination, the building on this property was not over 50 years old but has since aged over 50 years. FAA is seeking SHPOs concurrence that the determination of no affect to historic properties remains valid considering the potential eligibility of the 12832 Suddard Street property.

The Waukegan Port District has authorized Crawford, Murphy, & Tilly to prepare environmental documentation needed for our review of the proposed action. Please work with the Waukegan Port District, as the sponsor of UGN, and their agents, on any Section 106 historic preservation review needed for proposed action. Once SHPO has reached a conclusion on the new information, please direct official correspondence to the FAA, as the leading Federal Agency.

If you have any questions or need additional information, please contact me at 847-294-7354 or craig.k.pullins@faa.gov.

Sincerely,

CRAIG KENNETH PULLINS

Digitally signed by CRAIG KENNETH PULLINS
Date: 2025.12.19 15:09:35 -06'00'

Craig Pullins
Environmental Protection Specialist
Chicago Airports District Office

Illinois Department of Natural Resources
JB Pritzker, Governor • Natalie Phelps Finnie, Director
One Natural Resources Way • Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Lake County
Waukegan
Sections: 29, 31, 32-Township:46N-Range:12E
Section:1-Township:45N-Range:11E,
Section:6-Township:45N-Range:12E,
Site: 11L967, Sections:29, 31-Township:46N-Range:12E,
Waukegan National Airport - 3550 N. McAree Rd.
12832 Suddard St.
FAA, IDOT Seq #-19504A, IDOT/ISAS#-19130,
Land Acquisition, Runway Lengthening & Relocation,
Taxiway Bridge and Roadway Tunnel Construction,
Connector Taxiways and Relocation

PLEASE REFER TO: SHPO LOG #001061615

January 15, 2026

Craig Pullins
Federal Aviation Administration
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018

We have reviewed the documentation submitted for the referenced project in accordance with 36 CFR Part 800.4. Based upon the information provided, no historic properties will be affected. We, therefore, have no objection to the undertaking proceeding as planned.

Please retain this letter in your files as evidence of compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. This approval remains in effect for two (2) years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Remains Protection Act (20 ILCS 3440).

If you are an applicant, please submit a copy of this letter to the state or federal agency from which you obtain any permit, license, grant, or other assistance. If further assistance is needed contact Jeff Kruchten, Principal Archaeologist, at 217/785-1279 or jeff.kruchten@illinois.gov.

Sincerely,

Carey L. Mayer

Carey L. Mayer, AIA
Deputy State Historic Preservation Officer

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX E FORECAST WORKING PAPER



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

U.S. Department
of Transportation
**Federal Aviation
Administration**

Chicago Airports District Office
2300 Devon Avenue
Des Plaines, Illinois 60018

August 12, 2025

Mr. Skip Goss
General Manager
Waukegan National Airport
2601 Plane Rest Drive
Waukegan, IL 60087

RE: Waukegan National Airport (UGN) Forecast Approval

Dear Mr. Goss:

The Federal Aviation Administration (FAA) approves the baseline scenario through year 2034 in the UGN Forecast, as presented in the Runway 5/23 Forecast Working Paper for the Waukegan National Airport, submitted in July 2025.

The review included coordination with APP-400 and APO-100 in FAA Headquarters. We found the forecast to be generally consistent with the 2025 TAF. It uses current data and is supported by generally accepted forecasting methodologies. The existing critical aircraft for Runway 5/23 is determined to be the Gulfstream 500/550 family and for Runway 14/32 it has been determined to be the Beechcraft King Air 90. The future critical aircraft is expected to be the Gulfstream 600/650 family for Runway 5/23, and for Runway 14/32 it will remain the Beechcraft King Air 90. The approval of the forecast does not automatically constitute a commitment on the part of the United States to participate in any development recommended in the forecast or shown on the ALP. FAA approval of the baseline scenario in this forecast does not constitute justification for future projects. Justification for future projects will be made based on activity levels at the time the project is requested for development, in accordance with criteria in FAA Orders 5090.5 and 5100.38. Documentation of actual activity levels meeting planning activity levels will be necessary to justify AIP funding for eligible projects. Further, the approved forecast may be subject to additional analyses if the fundamental rationale of the forecast or the critical aircraft changes materially.

Please contact me with any questions.

Regards,

MARTIN ANTHONY SCOTT

Digitally signed by MARTIN ANTHONY SCOTT
Date: 2025.08.12 13:21:23 -05'00'

Martin Scott
Community Planner
Chicago Airports District Office

cc: David Salgado, IDA
Craig Louden, CM&T

Runway 5/23

Forecast Working Paper

For the Waukegan National Airport

Crawford, Murphy & Tilly
July 2025

1.1 Aircraft Total Operations Forecast

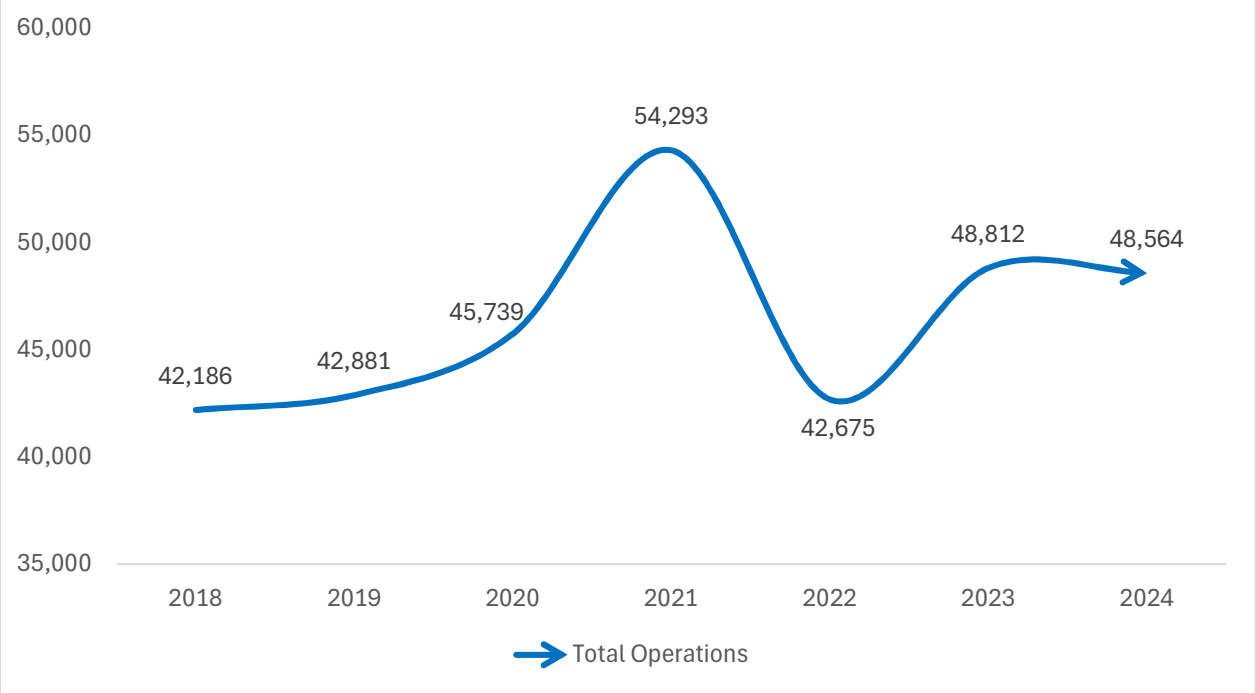
To determine the facility needs of an airport, and more specifically, runway length, it is necessary to analyze and forecast the aircraft operations.

This section will examine the various resources for analyzing and projecting the total aircraft operations at Waukegan National Airport (UGN or the Airport) to help identify runway length and complete the associated environmental action for the project.

Historical Activity

The historical data utilized for this forecast goes back to 2018, when the last locally prepared forecast was completed. The Historical Aircraft Operations at UGN are depicted in Exhibit 1.1-1.

Exhibit 1.1-1 – UGN Historical Aircraft Operations



Source: OPSNET 2024

Since 2018, UGN has seen significant operational growth, even with the onset of the COVID-19 pandemic (COVID-19) in 2020 and continues trending in a positive direction.

The surge in 2021 aircraft operations and subsequent decline in 2022 appear to be related to factors associated with COVID-19. If these two years are considered outliers, the overall trend of increasing operations between 2018 through 2020 and continuing into 2023 through 2024 appears generally consistent.

Proposed Forecast

Per FAA guidance, one baseline scenario for the total operations forecast was developed. This baseline forecast is based upon the latest data available for the 2024 calendar year. This forecast projected a faster growth rate until 2029 and a more moderate rate through the end of the planning period.

Baseline Scenario: Historical Trends and Industry Publications Forecasts

The baseline scenario created is based upon industry publications and historical trends at UGN. Historical data for this scenario was sourced from the FAA Operations Network (OPSNET). FAA OPSNET provides historical data for aircraft operations for all airports. OPSNET is FAA's official source of air traffic operations and delay data. The data collected through OPSNET is used to analyze the performance of the FAA's air traffic control facilities.

Utilizing the FAA OPSNET data, a 2024 base year of 48,564 Total Aircraft Operations was established by combining Itinerant Operations with Local Operations. Itinerant Operations include both VFR and IFR operations.

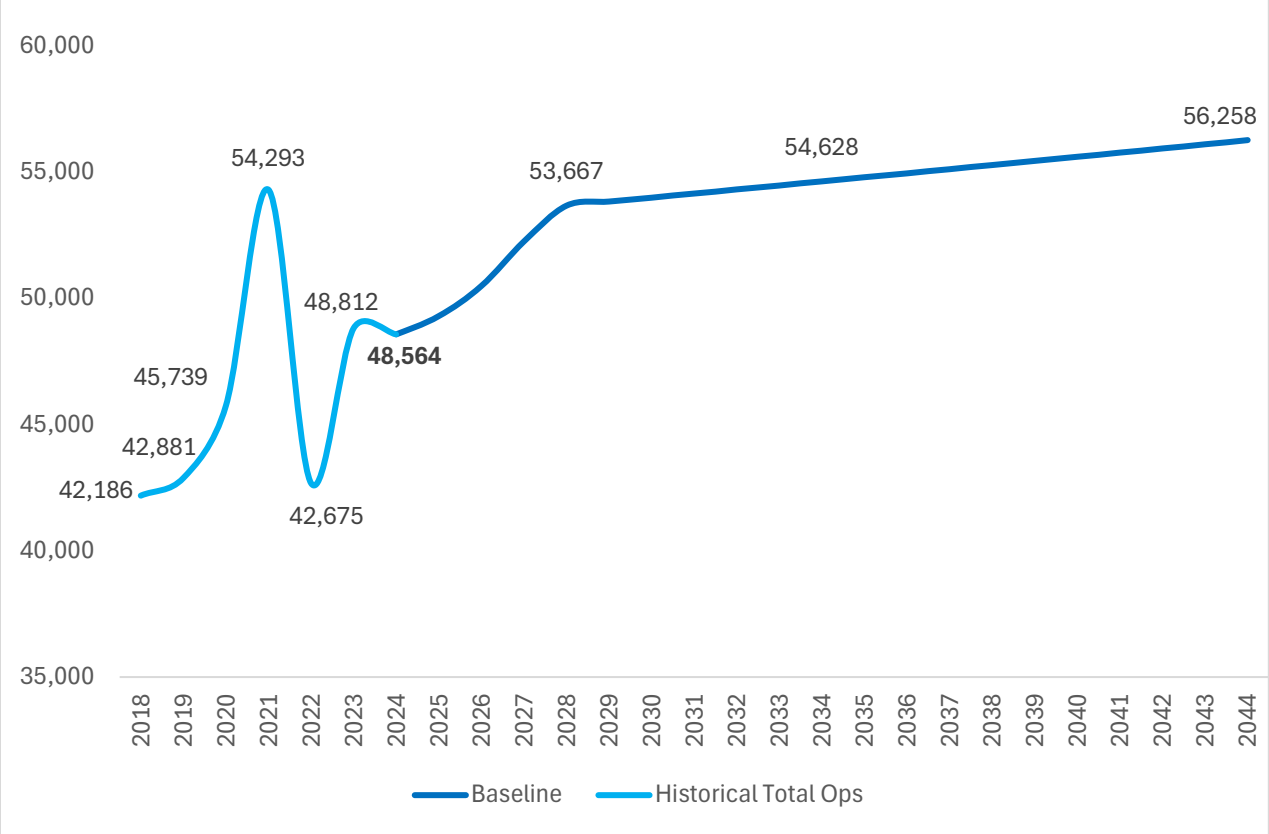
Afterwards, growth rates that are generally consistent with historic trends at UGN, the 2024 FAA TAF and the 2024 Aerospace Forecast were applied to the base year of 48,564 total aircraft operations. It should be noted that a twenty-year baseline scenario was developed for use in the NEPA evaluation. The growth rate applied between 2024 and 2029 was approximately 2.1%, which is generally consistent with UGN's historic operational growth rates between 2018 and 2024 (approximately 1.5%) and 2022 and 2024 (approximately 2.4%). From 2029 to 2044, the growth rate applied was approximately 0.3%, which is generally consistent with long-term growth rates in the 2024 FAA Aerospace Forecast document and the FAA TAF. Overall, this methodology yielded a 0.7% CAGR, resulting in 56,258 projected operations in 2044. These projections are shown in Table 1.1-1 and Exhibit 1.1-2.

Table 1.1-1 – Base Year Scenario Total Aircraft Operations Projections

Planning Horizon	Year	UGN Aircraft Operations Projections
Base Year	2024	48,564
Base + 1	2025	49,286
Base + 5 – Opening Year	2029	53,826
Base + 10 – Opening Year +5	2034	54,628
Base + 15	2039	55,438
Base + 20	2044	56,258
	CAGR	***0.7%***

Source: 2024 FAA TAF, OPSNET, CMT Analysis 2025

Exhibit 1.1-2 – Baseline Scenario Total Aircraft Operations Projections



Source: FAA TAF 2024, FAA OPSNET, CMT Analysis 2024

FAA TAF Comparison

A critical component of any demand forecast is the comparison to the projections made within the most recent FAA Terminal Area Forecast (TAF). The TAF is used for FAA decision-making, associated with key environmental issues, noise compatibility planning and initial financial decisions. FAA requires that forecasts are compared to the most recent TAF to determine if they are consistent. The forecast must meet the following criteria:

- Forecasts differ from the TAF by less than 10 percent in the five-year forecast period.
- Forecasts differ from the TAF by less than 15 percent in the ten-year forecast period.

If the forecast is inconsistent with the TAF, differences must be resolved or accepted by the FAA before forecast approval can be granted.

When UGN's baseline forecast is compared to the 2024 TAF, the results are displayed in Table 1.1-2 below. UGN's baseline forecast is consistent with the TAF in the five, ten and twenty-year periods.

Table 1.1-2 – Baseline Scenario Total Aircraft Operations Projections

Planning Horizon	Year	UGN Aircraft Operations Projections	FAA TAF	TAF % Difference
Base Year	2024	48,564	48,702	-0.3%
Base + 1	2025	49,286	49,426	-0.3%
Base + 5 – Opening Year	2029	53,826	53,979	-0.3%
Base + 10 – Opening Year +5	2034	54,628	54,783	-0.3%
Base + 15	2039	55,438	55,596	-0.3%
Base + 20	2044	56,258	56,418	-0.3%

Source: FAA TAF 2024, CMT Analysis 2025

1.2 Fleet Mix

To evaluate an airport's ability to accommodate traffic, it is critical to understand the types of aircraft that utilize the facility. An airport's "Fleet Mix" refers to the variety and types of aircraft that operate there.

Baseline Activity

The data utilized to determine the baseline condition fleet mix comes from a combination of FAA Traffic Flow Management System Counts (TFMSC) and OPSNET databases, supplemented with FlightAware historical flight records. The data was broken between Propeller (Piston + Turboprop) and Jet operations. The Propeller classification accounts for approximately 84% of the fleet mix at UGN and Jets account for approximately 16%. Table 1.2-1 shows the existing fleet mix for UGN.

Table 1.2-1 – Baseline Operations Fleet Mix

Aircraft Classification	Baseline Operations	% of Fleet Mix
Propeller	40,794	84%
Jet	7,770	16%
Total	48,564	100%

Source: FAA TFMSC, OPSNET, FlightAware, CMT Analysis 2025

Proposed Fleet Mix Forecast

Like the total operations forecast, the fleet mix forecast will only be comprised of a baseline forecast. The Piston and Turboprop categories were combined into one classification of Propeller. A variable growth rate that generally aligned with UGN's Total Aircraft Operations Projections presented previously was then applied. Mirroring nationwide trends, including those discussed in the 2024 FAA Aerospace Forecast, the growth of jet operations at UGN is expected to outpace the growth of propeller operations, although propeller operations will continue to comprise the majority of aircraft operations throughout the forecast period.

Propeller operations are projected to grow between 1% and 2% for the first five forecast years and then growth was projected to slow for the remaining forecast years. This results in a projection of 43,275 propeller operations by 2044 that would account for approximately 77% of the fleet mix at UGN.

Based on the FAA 2024 Aerospace Forecast, the Jet category utilized a 2.6% CAGR that resulted in 12,983 jets by the end of the planning period, growing to account for approximately 23% of the fleet mix. The projected growth rate for Jets is consistent with various FAA long-term forecast documents. Table 1.2-2 displays the future fleet mix for UGN.

Table 1.2-2 – 2044 Operations Fleet Mix

Aircraft Classification	Baseline Operations	% of Fleet Mix
Propeller	43,275	77%
Jet	12,983	23%
Total	56,258	100%

Source: FAA TFMSC, OPSNET, FlightAware, CMT Analysis 2025

1.3 Critical Aircraft

Identifying the critical aircraft is another important aspect in airport planning to aid in the development of airport facilities. FAA Advisory Circular, 150/5000-17 "*Critical Aircraft and Regular Use Determination*," defines critical aircraft and provides guidance for its use in facility planning and airport design. Regular use is defined as 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. An operation is defined as either a takeoff or landing.

For the purposes of identifying a critical aircraft, "similar characteristics" refers to the grouping of aircraft by comparable operational performance and/or physical dimensions. FAA allows the grouping of aircraft as a technique for airfield planning and development instead of requiring a single aircraft type to exceed the regular use threshold alone.

Existing Critical Aircraft

The Airport Layout Plan (ALP) for UGN submitted to FAA in 2020 has identified the Gulfstream 450 as the existing critical aircraft for Runway 5/23. The corresponding Runway Design Code (RDC) for existing Runway 5/23 is C-III-2400. The letter represents the Aircraft Approach Category (AAC), and the roman numeral represents the Airplane Design Group (ADG), which is a combination of an aircraft's tail height and/or wingspan. The final number represents instrument approach visibility minimums expressed by runway visual range values in feet. In this case 2,400 represents approach visibility minimums of less than ¾ statute mile but not lower than ½ statute mile.

To determine if the critical aircraft has remained the same or changed since the submission of the ALP, several steps were taken, including a review of TFMSC historical operational data and discussions with Airport users.

It was determined that there has been a change in UGN's existing critical aircraft. Operations of the Gulfstream 500/550 family of aircraft have remained relatively stable, with approximately 1,100 annual operations historically. Because the Gulfstream 500/550 family has more operations than the Gulfstream 600/650 in 2024, this would be considered the existing critical aircraft. Exhibit 1.3-1 presents the latest historical data of the Gulfstream 500/550 family and the Gulfstream 600/650 family.

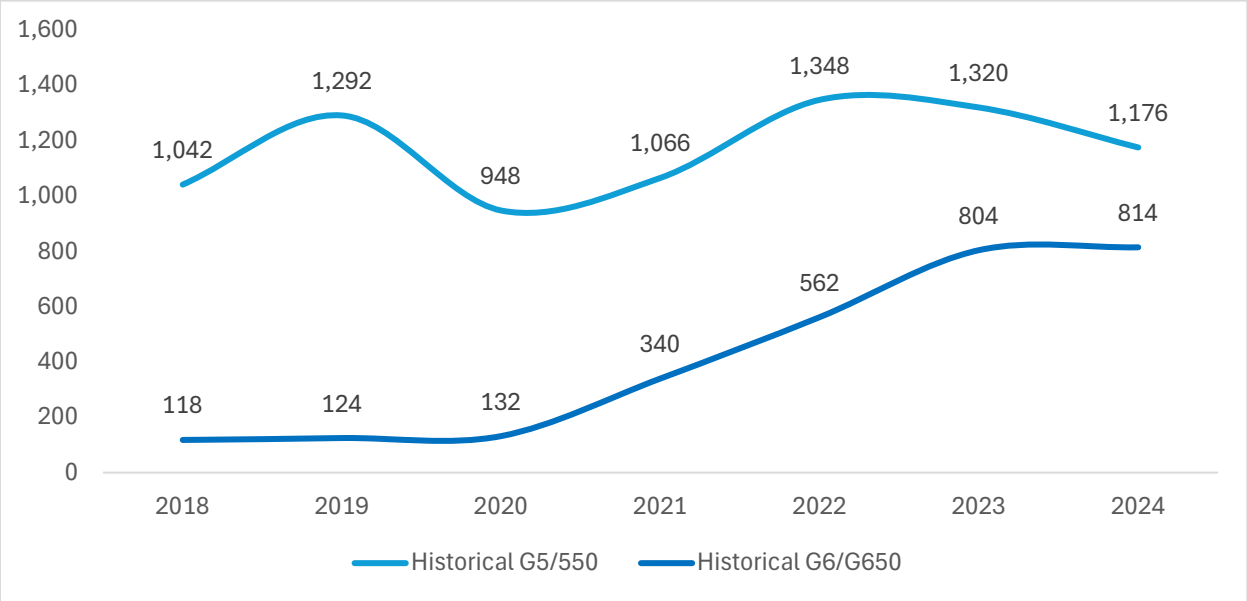
The King Air 90 has been identified on the 2020 ALP as the existing critical aircraft for Runway 14/32. The corresponding RDC for existing Runway 14/32 is B-II Small-5000 (approach visibility minimums not lower than 1 statute mile).

Future Critical Aircraft

Upon identifying the existing critical aircraft, it is necessary to determine the future critical aircraft. For Runway 5/23, while the annual operations of the Gulfstream 500/550 family have been stable since 2018 and meet the criteria for future critical aircraft, there has been a slight decline in operations of this family over the last three years that could warrant a change in the critical aircraft. At the same time, historical data from the past five years has shown a significant increase in annual operations by the Gulfstream 600/650 family of aircraft. Specifically, since 2022, these aircraft have surpassed the 500 annual operations threshold and operations are anticipated to continue increasing throughout the planning horizon, per coordination with key UGN users who frequently operate these aircraft at the Airport.

Based on the historical operational data presented below in Exhibit 1.3-1, it has been determined that the future critical aircraft with greater of 500 operations of "regular use" when combined with a grouping of aircraft of similar characteristics is the family of Gulfstream 600/650.

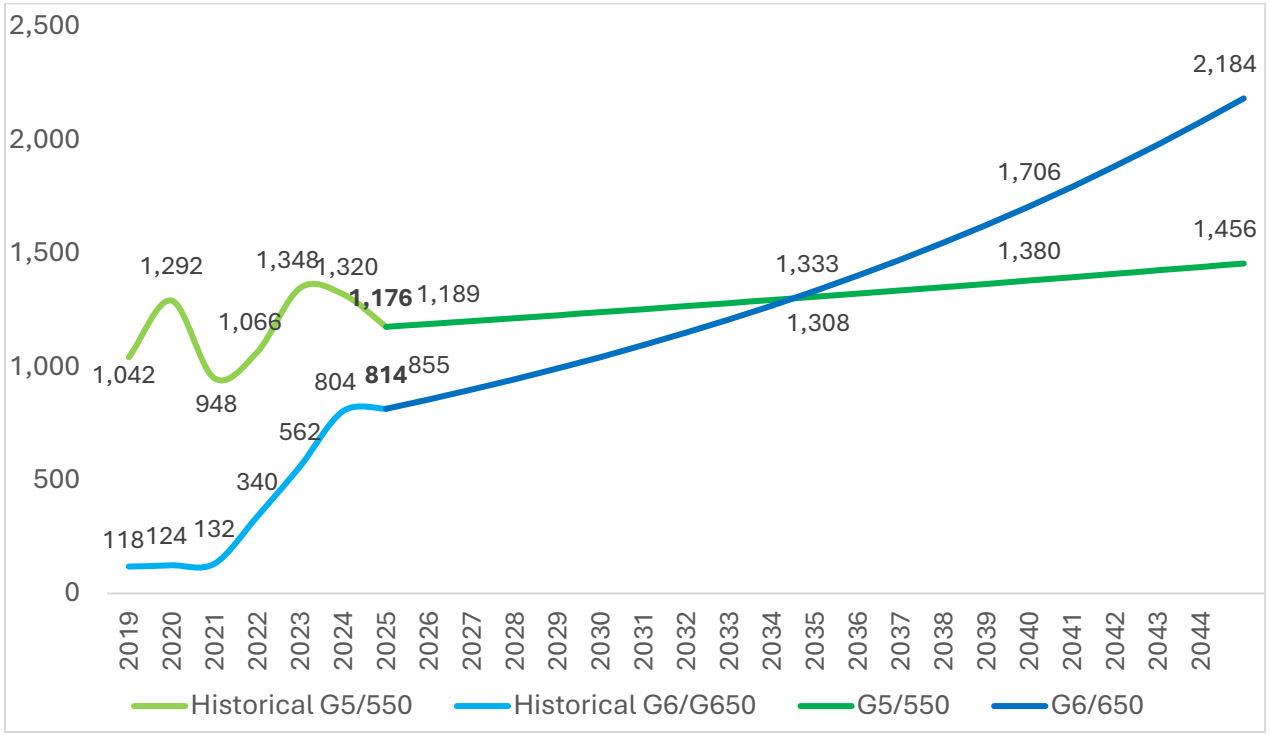
Exhibit 1.3-1 – UGN Existing Critical Aircraft Historical Operations



Source: FAA TFMSC

Utilizing the most recent FAA 2024 Aerospace Forecast, the CAGR for Jets of 2.6% was applied to the baseline of total Gulfstream 500/550 and Gulfstream 600/650 operations to create a forecast. This gave a total of 3,640 combined Gulfstream 500/550 and 600/650 operations by the end of the forecast period. In the base year, of the combined Gulfstream 500/550 and 600/650 operations, approximately 60% were by the 500/550 and 40% by the 600/650. Based on historical data and recent trends, the distribution is expected to shift to approximately 40% 500/550 and 60% 600/650 throughout the planning horizon. Based off historical data and trends at the airport, it was determined the Gulfstream 500/550 family of aircraft will be surpassed by the G600/650 through the planning horizon. As such, the future critical aircraft for UGN would be the family of Gulfstream 600/650. Exhibit 1.3-2 depicts future projections for both families of aircraft.

Exhibit 1.3-2 – UGN Future Critical Aircraft



Source: FAA TFMSC, CMT Analysis 2025

The RDC for Runway 5/23 is expected to remain as C-III-2400.

For Runway 14/32, the future critical aircraft identified on the ALP is the Beechcraft King Air 90. The RDC for Runway 14/32 is expected to remain as B-II Small-5000.

1.4 Runway Utilization

Runway utilization at UGN was determined by analyzing FlightAware data and previous NEPA noise modeling inputs. Jet traffic at UGN predominantly occurs on Runway 5/23. Propeller traffic also primarily uses Runway 5/23 at approximately 80%, with the remaining 20% using crosswind Runway 14/32. Table 1.4-1 shows the existing runway utilization for UGN, which is not expected to change throughout the forecast period.

Table 1.4-1 – Percentage of Runway Utilization

Aircraft Classification	Runway 5	Runway 23	Runway 14	Runway 32
Propeller	34%	45%	10%	11%
Jet	40%	60%	0%	0%

Source: FlightAware, CMT Analysis 2025

1.5 Runway Length Determination

Overview

The current length of Runway 5/23 is 6,000' ft. A Runway Length Determination for Runway 5/23 was completed using advanced aircraft performance assessment methods supported by current FAA Advisory Circular 150/5325-4B "*Runway Length Requirements for Airport Design,*" and to be defined in the upcoming version 150/5325-4C. The advanced methodology involves takeoff performance analyzed under a Monte Carlo simulation and statistical analysis to evaluate the likelihood of various aircraft types being able to support flight operations at all hours of the day, throughout the year.

The assessment included a City Pair analysis that utilizes trip distances to determine aircraft useful load and takeoff weight requirements to determine the runway length calculations. The destinations to complete the City Pair analysis are composed of a representative sample of the distances and directions of flights that either have operated from UGN or could operate with the aircraft types selected for analysis. Each of these data points is used to assess overall aircraft performance capabilities of varying runway lengths.

Additional details about the methodology used for the runway length assessment are provided in a technical memorandum included as Appendix 1 of this report.

Representative Aircraft

The assessment focused on the following representative aircraft types that are 1.) likely to be operated to/from UGN on a regular, 12 month per year, basis; 2.) likely to be operated on all, or most, of the target routes being analyzed through the Monte Carlo process; and 3.) aircraft that the project team had access to for high fidelity takeoff and flight planning performance calculations:

- Cessna Citation 560XLS
- Hawker 800XP
- Bombardier Global Express 6000
- Gulfstream G650ER
- Cessna Citation Latitude 680A
- Bombardier Challenger 350
- Cessna Citation X

Target Markets

Based on information provided by UGN, two sets of target routes were identified for potential non-stop business jet operations from UGN. The first set were selected to represent current and future medium cabin business jet activity for aircraft such as the Cessna 560XLS and the Hawker 800XP. This set includes domestic routes and routes to Central America and the Caribbean.

As previously noted in the discussion of critical aircraft above, UGN also serves some ultra-long-range and large cabin business jets (including the existing and future critical aircraft) on a regular basis. These aircraft are unchallenged on all domestic and North American routes off the existing runway length. As such, additional transoceanic destinations were selected to represent existing and desired destinations for these aircraft and their users. With the existing runway length available, depending on weather conditions, trips to these destinations may require a fuel stop, have payload restrictions or require other advanced trip planning.

Once each of the aircraft/route level analysis had been generated by the Monte Carlo processes, the project team focused on the 90% likelihood of success value to determine the ideal runway length for the new runway.

Runway Length Determination Results

The results of the assessment indicate that the following aircraft operations would benefit from additional runway length at UGN:

- Medium Cabin Business Jets, represented by Hawker 800XP
  - Includes all Hawker derivatives, older Cessna Citations, Lear45/60
  - More than 6,000 ft of runway length is required for destinations in excess of four hours flight time (approximately 1,500 NM)
  - Most aircraft in this category do not have the performance to fly to Hawaii, Alaska, Iceland or the UK
  - Aircraft in this category are still very common both at UGN and throughout the National Airspace System
- Large Cabin Business Jets, represented by both the Bombardier Global 6000 and Gulfstream G650ER
  - Includes all current and upcoming large cabin business jets

- More than 6,000 ft of runway length is required for destinations in excess of ten hours flight time (approximately 4,000 NM)
- Additional runway length would be beneficial, but current airspace limitations over Russia and the Middle East prevent current long range US business jets from achieving their maximum design range from UGN

The following table provides a summary of runway length results for medium and large cabin business jets to achieve a 90% likelihood of success when departing to representative target destinations. Runway lengths for partial (50%) and full (100%) load factors are provided in Exhibit 1.5-1.

Exhibit 1.5-1 – UGN Aircraft that Benefit from Additional Runway Length

50% Load Factor - Medium Cabin			
Aircraft	Destination	Block Time (hr)	90% Distance (ft)
800XP	SAN	4.68	6000
800XP	SEA	4.72	6000
800XP	SJU	4.75	6000
800XP	SFO	5.03	6130
800XP	SJO	5.28	6150
800XP	POS	5.87	6480

100% Load Factor - Medium Cabin			
Aircraft	Destination	Block Time (hr)	90% Distance (ft)
800XP	SAN	4.68	6290
800XP	SEA	4.72	6270
800XP	SJU	4.75	6200
800XP	SFO	5.03	6540
800XP	SJO	5.28	6570
800XP	POS	5.87	>7000

50% Load Factor - Large Cabin			
Aircraft	Destination	Block Time (hr)	90% Distance (ft)
G6000	EZE	10.50	6000
G6000	TLV	11.53	6000
G6000	HND	13.55	>7000
G650ER	EZE	10.50	6020
G650ER	TLV	11.53	6100
G650ER	HND	13.55	>7000

100% Load Factor - Large Cabin			
Aircraft	Destination	Block Time (hr)	90% Distance (ft)
G6000	EZE	10.50	6000
G6000	TLV	11.53	6235
G6000	HND	13.55	>7000
G650ER	EZE	10.50	6160
G650ER	TLV	11.53	6270
G650ER	HND	13.55	>7000

Source: LEAN Analysis 2025

The results of the assessment identified two optimal lengths obtained by first relocating Runway 5/23 at its current length of 6,000' ft and then extending the relocated runway to the southwest as follows:

- Minimum Length: 6,200' ft
  - At a 50% load factor, this length allows small and medium business jets to reach destinations 4 to 5 hours from UGN, and large cabin business jets to reach Europe and South America.
- Recommended Length: 6,550' ft
  - Enables a 100% load factor for the previously mentioned small and medium cabin business jets to all domestic markets in the continental US and most of the Caribbean and Central America.
  - Allows for 100% load factor for large cabin business jets to all available destinations as distant as Tel Aviv and Buenos Aires.

Forecast for Aircraft Benefiting from Additional Runway Length

Based on the City Pair analysis, the number of historical aircraft operations that would benefit from additional runway length was calculated. These operations include nonstop flights with medium cabin aircraft with operating characteristics like the Hawker 800XP (800XP Equivalent) to and from destinations that exceed approximately 1,500 NM from UGN and with large cabin aircraft with operating characteristics like the Gulfstream G650ER (G650 Equivalent) to and from destinations that exceed approximately 4,000 NM from UGN.

Table 1.5-1 – Base Year Scenario Total Historical 800XP and G650 Aircraft Operations

Year	800XP Equivalent Operations > 1,500 NM	G650 Equivalent Operations > 4,000 NM	Total
2022	27	10	37
2023	21	26	47
2024	14	36	50

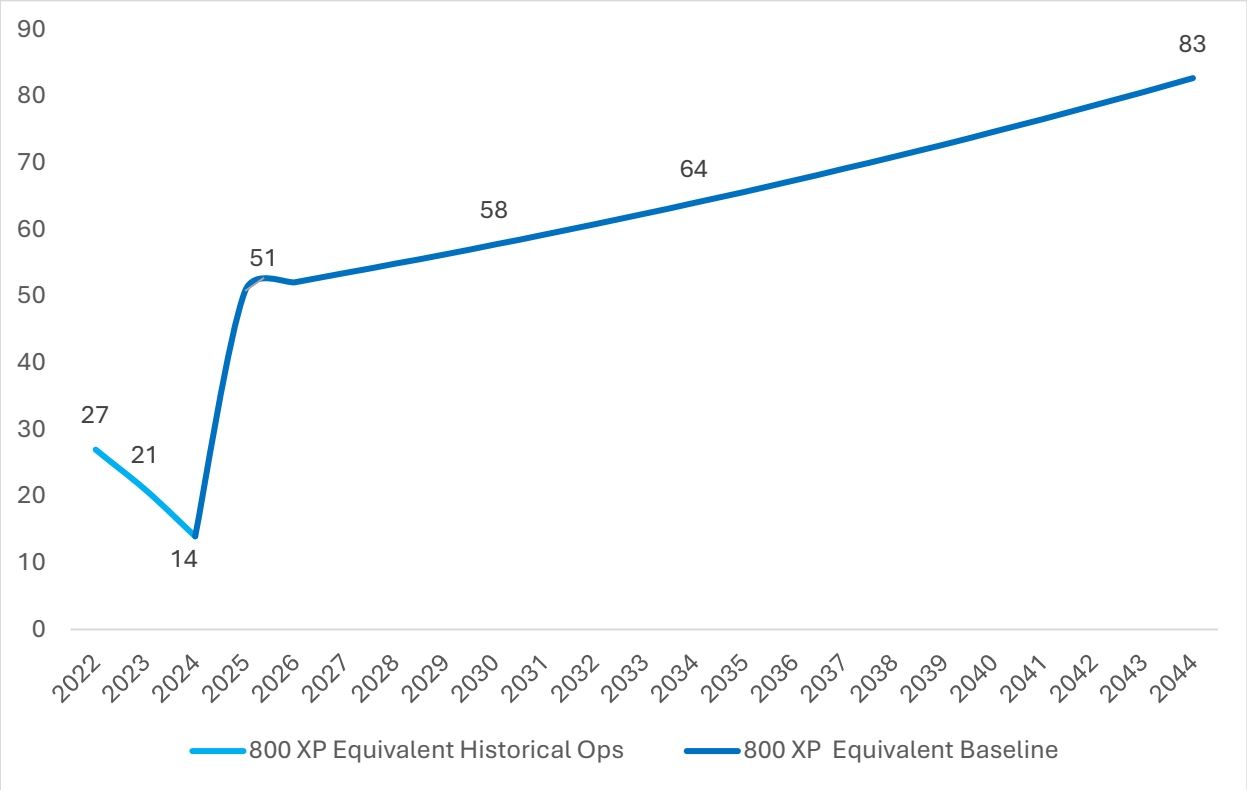
Source: FAA TFMSC, FlightAware Data, CMT Analysis 2025

For the 800XP Equivalent aircraft, the following factors and assumptions were applied to arrive at an operations forecast:

- Of historical 800XP Equivalent operations at UGN, approximately six percent were to and from destinations that exceed approximately 1,500NM.
- If additional runway length were in place, it is anticipated that the percentage of 800XP Equivalent operations to and from destinations that exceed approximately 1,500NM from UGN would increase to approximately 12%.
- After additional runway length is in place, the number of 800XP Equivalent operations to and from destinations that exceed approximately 1,500NM from UGN would increase at a rate similar to overall jet growth anticipated for UGN (approximately 2.6% annually).
- Additional details about the 800XP Equivalent forecast assumptions are available in Appendix 2 (February slide presentation).

Exhibit 1.5-2 depicts the 800XP Equivalent forecast results. For visualization purposes, aircraft operations were assumed to be unconstrained by the existing runway length starting in 2025.

Exhibit 1.5-2 – 800XP Equivalent Aircraft > 1,500NM Stage Length Projection



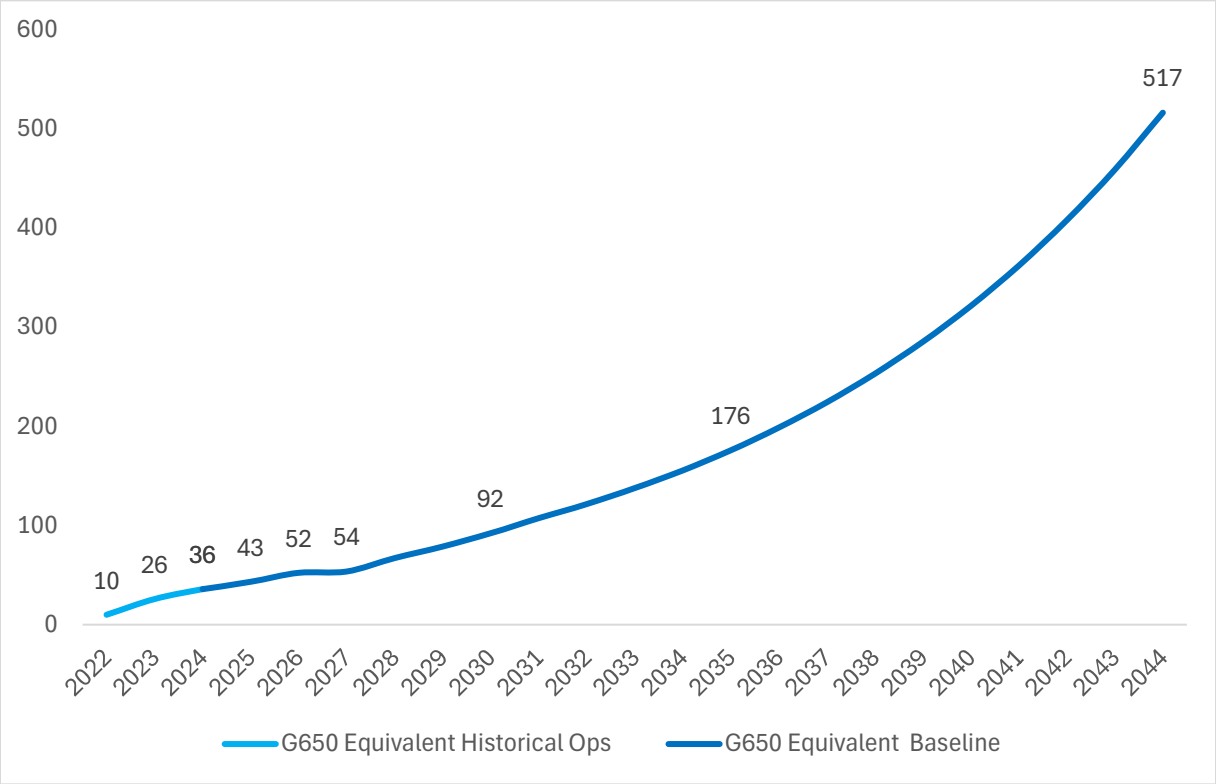
Source: CMT Analysis 2025

For the G650 Equivalent aircraft, the following factors and assumptions were applied to arrive at an operations forecast:

- International operations at UGN would grow at the historical 2018-2024 rate of approximately 10% annually
- The share of international operations at UGN to destinations that exceed 4,000 NM would grow from approximately 23% in 2024 to approximately 50% by 2044.
- Additional details about the G650 Equivalent forecast assumptions are available in Appendix 2 (February slide presentation).

Exhibit 1.5-3 depicts the G650 Equivalent forecast results. For visualization purposes, aircraft operations were assumed to be unconstrained by the existing runway length starting in 2025.

Exhibit 1.5-3 – UGN G650 Equivalent > 4,000 NM Stage Length Projection



Source: CMT Analysis 2025

Table 1.5-2 provides a summary of projected operations for aircraft flights that would benefit from additional runway length at UGN.

Table 1.5-2– Combined 800XP Equivalent > 1,500 NM and G650 Equivalent > 4,000 NM Projections

Planning Horizon	Year	Projected Operations for Aircraft Benefiting from Additional Runway Length at UGN
Base Year	2024	50
Base + 1	2025	94
Base +5	2030	150
Base +10	2035	242
Base +15	2040	397
Base +20	2044	600

Source: CMT Analysis 2025

Forecast Summary

The results of this forecast indicate that, while there is existing and growing future demand for flights that would benefit from additional runway length, the number of annual operations by these aircraft is not likely to exceed the FAA's threshold for regular use (500 annual operations) within the first five years after additional runway length would be completed. Over the long-term planning horizon, however, the number of operations is projected to exceed the regular use threshold if additional runway length is completed.

After reviewing the forecast results, the FAA determined that the operational data justifies retaining the existing 6,000' ft for Runway 5/23 at UGN. As the forecast does not provide a demonstrated need for regular use (more than 500 annual operations) for aircraft operations that would benefit from additional runway length within five years of the improvement at UGN, additional runway length is not considered justified for federal funding participation.

APPENDIX 1

Waukegan National (UGN)

Advanced Runway Length Determination

Prepared By

Tyler Hawkins and Craig Nordstrom, LEAN Technology Corp

Reviewed By

Paul Hannah, LEAN Technology Corp

Submitted To

Craig Louden, CMT

For

Masterplan Update

1 Revision Log

Version	Date	Reviewer(s)	Content Updated
0.0	20JAN25		Initial Internal Release
0.5	04FEB25	Tyler Hawkins	Internal Review and Update
1.0	07FEB25	Paul Hannah	Release to CMT

Table of Contents

1 Revision Log 2
2 Executive Summary 6
3 Objective of This Analysis 7
4 Data Restrictions 7
5 Overview of This Document 8
6 Aeronautical and Geospatial Information 8
6.1 Baseline Information for the Existing Runway 5-23 8
6.1.1 Runways 9
6.1.2 Obstacle and Terrain Sources 11
6.2 Relocation and Extension of Runway 5-23 14
6.2.1 Runway Threshold Locations 14
6.2.2 Obstacle and Terrain Considerations: Takeoff from Relocated Runway 5 15
6.2.3 Geospatial Deconfliction for Departures from Runway 5 16
6.2.4 Obstacle and Terrain Considerations: Takeoff from a Relocated Runway 23 16
6.2.5 Geospatial Deconfliction for Departures from Runway 23 18
7 Historical Weather Data 19
7.1 Terminal Weather Data 19
7.1.1 Source and Methods for Terminal Weather Data Processing 20
7.1.2 Temperature 21
7.1.3 Pressure 23
7.1.4 Runway Condition 24
7.1.5 Icing 25
7.1.6 Winds and Runway Usage 27
7.2 Enroute Weather Data 31
7.2.1 Enroute Temperature 31
7.2.2 Application of Enroute Temperature to Advanced Runway Length Analysis (Monte Carlo Only) 31
7.2.3 Enroute Icing 32
7.2.4 Application of Enroute Icing to Advanced Runway Length Analysis (Monte Carlo Only) 32
7.2.5 Enroute Winds 32
7.2.6 Application of Enroute Winds to Advanced Runway Length Analysis 32

7.3 Summary 33
8 Flight Operations....33
8.1 Aircraft Selection 33
8.2 Aircraft Configuration 34
8.2.1 Aircraft Structural Weight and Engine Types Used in Monte Carlo Analysis .35
8.2.2 Fixed Aircraft Configuration Values in the Monte Carlo Analysis 37
8.2.3 Variable Payload Values in the Monte Carlo Analysis 38
8.3 Destinations and Routes of Flight 39
8.3.1 Routes and Time of Departure 39
8.3.2 Route and Time of Departure Inputs to Monte Carlo Analysis 43
8.4 Flight Planning....44
8.4.1 Flight Planning Performance Data....44
8.4.2 Flight Planning Methods Used 44
8.4.3 Flight Planning Inputs to Monte Carlo Analysis....46
8.4.4 Distribution of Flight Planning Performance for Monte Carlo Analysis 46
8.5 Takeoff Performance....47
8.5.1 Takeoff Performance Methods Used 47
8.5.2 Obstacle Accountability Areas....50
8.5.3 Takeoff Performance Inputs to Monte Carlo 51
8.6 Landing Performance 52
8.6.1 Certificated Landing....52
8.6.2 Operational Landing....53
8.6.3 Landing Performance Analysis....53
9 Determining Ideal Runway Length for UGN 54
9.1 Monte Carlo Modeling Methodology 54
9.2 Cumulative Likelihood and Operations....56
9.3 Aircraft Specific Results on Selected Routes 58
9.3.1 Hawker 800XP Results 59
9.3.2 Aircraft with Similar Runway Length Requirements to the 800XP 60
9.3.3 Global 6000 / G650ER Results 61
9.4 Aircraft with Similar Runway Length Requirements to the G6000/G650ER 62
9.5 Determining Ideal Runway Length 62
10 Summary....65

2 Executive Summary

The analysis performed to determine the optimum runway length for runway 5-23 at the Waukegan National Airport (UGN) utilized advanced aircraft performance assessment methods supported by current FAA AC-150-5325-4B and to be defined in the upcoming AC-150-5325-4C. The advanced methodology involves takeoff performance analyzed under a Monte Carlo simulation and statistical analysis to evaluate the likelihood of various aircraft types being able to support flight operations at all hours of the day, throughout the year. This data was compliant with 14 CFR parts 23, 25, 91, 91-K, and 135 certificated aircraft performance requirements. The analysis considered takeoff distances, one engine inoperative (OEI) obstacle clearance, and landing performance under different conditions.

The results of the analysis identified two optimal lengths obtained by first relocating runway 5/23 at its current length of 6,000ft and then extending the relocated runway to the southwest as follows:

- **Minimum Length: 6,200 feet** – At a 50% load factor, this length allows small and medium business jets to reach destinations 4 to 5 hours from UGN, and large cabin business jets to reach Europe and South America.
- **Recommended Length: 6,550 feet** – Enables a 100% load factor for the previously mentioned small and medium cabin business jets to all domestic markets in the continental US and most the Caribbean and Central America. Allows for 100% load factor for large cabin business jets to all available destinations as distant as Tel Aviv and Buenos Aires.

50% Load Factor - Medium Cabin

Aircraft	Destination	Block Time (hr)	90% Distance (ft)
800XP	SAN	4.68	6000
800XP	SEA	4.72	6000
800XP	SJU	4.75	6000
800XP	SFO	5.03	6130
800XP	SJO	5.28	6150
800XP	POS	5.87	6480

100% Load Factor - Medium Cabin

Aircraft	Destination	Block Time (hr)	90% Distance (ft)
800XP	SAN	4.68	6290
800XP	SEA	4.72	6270
800XP	SJU	4.75	6200
800XP	SFO	5.03	6540
800XP	SJO	5.28	6570
800XP	POS	5.87	>7000

50% Load Factor - Large Cabin

Aircraft	Destination	Block Time (hr)	90% Distance (ft)
G6000	EZE	10.50	6000
G6000	TLV	11.53	6000
G6000	HND	13.55	>7000
G650ER	EZE	10.50	6020
G650ER	TLV	11.53	6100
G650ER	HND	13.55	>7000

100% Load Factor - Large Cabin

Aircraft	Destination	Block Time (hr)	90% Distance (ft)
G6000	EZE	10.50	6000
G6000	TLV	11.53	6235
G6000	HND	13.55	>7000
G650ER	EZE	10.50	6160
G650ER	TLV	11.53	6270
G650ER	HND	13.55	>7000

Figure 1 Summary figure of the advanced runway length determination results for medium and large cabin business jets.

To achieve destinations beyond those listed above requires a significant change to geopolitical airspace restrictions causing inefficient routing. Should these restrictions be

lifted, the recommended runway length would be sufficient to perform non-stop operations to destinations such as Tokyo (HND) and Dubai (DXB). The study notes that to achieve the full performance benefit for runway extensions beyond 6,400 feet in total length, the powerlines southwest of the runway 23 departure end must be removed or mitigated.

3 Objective of This Analysis

The objective of the analysis described in this document is to determine the optimum runway length for the proposed relocation and extension of runway 5-23 utilizing the current and upcoming advanced aircraft performance assessment method defined in AC-150-5325-4C.

The primary aircraft performance characteristics explored in this analysis involve the use of Monte Carlo simulation and statistical analysis methods to determine the likelihood of different aircraft types being able to support flight operations at any time of the day over a 12-month period. These data are compliant with 14 CFR parts 23, 25, 91, 91-K & 135 certificated aircraft performance requirements. This includes an analysis of the takeoff distances and one engine inoperative obstacle clearance where required by operating rules.

The runway lengths described here are intended to inform a masterplan update but are considered technically sufficient for EA/EIS considerations.

4 Data Restrictions

Monte Carlo methods are regularly used by aircraft performance and flight operations engineers to analyze disparate information into meaningful data for decision making and risk mitigation. Some business jet operators use a Monte Carlo analysis method to assist with complex tasks like forecasting payload availability on a route, establishing fuel forecasts for a period of time, or monitoring changes in aerodynamics and engine performance that are too subtle to identify on an individual flight.

This Monte Carlo analysis uses proprietary takeoff and flight planning performance information either provided by aircraft manufacturers or created by the aircraft operators themselves. This information is meant to be used by certificated aircraft operators with personnel who are trained to ensure that the data is never used for incorrect or unsafe purposes either by their own flight operation or by others who do not have the commercial rights or training to replicate the flight operation. This often means that the aircraft performance information is not publicly available and must be protected when placed into a public setting like FAA airport planning, environmental analysis, or design.

To ensure that any proprietary data shared by an aircraft operator in support of this analysis is kept away from unsafe or unapproved uses, the project team has taken two important steps.

The first step is to ensure that the ultimate results of a runway length analysis, using aircraft performance information, are intentionally obfuscated to achieve the following outcomes:

1. The results cannot be used meaningfully in any flight operation (commercial, private, experimental, or otherwise)
2. The results cannot be meaningfully reverse engineered to reveal detailed aircraft performance characteristics

Thus, low-speed and high-speed performance data obfuscation is achieved by displaying the results of the Monte Carlo analysis in terms of runway lengths necessary to achieve varying likelihoods of a target outcome rather than as a summation of discrete mission planning elements.

The second step is to protect the aircraft performance information provided by an aircraft operator in support of this analysis by only making the data available to FAA and Airport personnel associated with the Master Plan.

5 Overview of This Document

This document contains information about the inputs, methods, results, and limitations associated with the Monte Carlo analysis of aircraft runway length requirements.

Below are several sections describing information that can be used by other stakeholders to consider the accuracy and validity of the methods and results.

Section 6 addresses the aeronautical and geospatial information used to establish baseline aircraft performance and instrument procedure conditions.

Section 7 addresses historical weather information used as inputs to the Monte Carlo runway length analysis.

Section 8 identifies the aircraft flight operations and performance computations used as inputs for the Monte Carlo runway length analysis.

Section 9 discusses the results of the Monte Carlo analysis used to determine potential runway lengths.

Section 10 is the detailed summary of the findings and any limitations.

6 Aeronautical and Geospatial Information

This section contains information about the aeronautical data, obstacles and terrain that was used for both the highspeed and low speed performance calculations in this report.

6.1 Baseline Information for the Existing Runway 5-23

Aeronautical and geospatial information was collected by LEAN through a combination of FAA maintained sources available to the public, and surveyed sources

provided by the project team. The following sections describe the information that was considered for the Monte Carlo performance analysis.

6.1.1 Runways

UGN is a public-use airport owned by the Waukegan Port District and used primarily for GA operations and business jet traffic. UGN is supported by a single FBO located in the southern quadrant of the airfield with multiple GA and corporate ramp and hangar areas east and west of runway 5-23. For detailed information about the runways, and their aeronautical properties, see Table 1 below.



Figure 2 Airfield diagram from FAA Terminal Procedures.

UGN has two nearly perpendicular runways designated 5-23, oriented southwest/northeast, and 14-32, oriented northwest/southeast. Both runways are supported by full-length parallel taxiways, with several 90° entrance and exit taxiways.

Runway 5-23 is listed in FAA eNASR as grooved, while 14-32 is listed as having no surface treatment.

Table 1 Summary of Existing Declared Distances and Runway Properties at UGN

RWY	BR Elev. (feet MSL)	DER Elev. (feet MSL)	TORA (feet)	TODA (feet)	ASDA (feet)	LDA (feet)	Width (feet)	Entry Angle	PCN
5	725.8	723.4	6,000	6,000	6,000	6,000	150	90^0	N/A
23	723.4	725.8							
14	727.9	712.0	3,750	3,750	3,750	3,261	75	90^0	N/A
32	712.0	727.9				3,750			

All information was compiled from FAA eNASR during the 26DEC2024 AIRAC and validated against the latest AC-150-5300-18B VGA survey data collected in 2020. The column titled "BR Elev" refers to the Brake Release point on the runway, which is synonymous with the start of the declared takeoff distances. The DER refers to the departure end of the runway.

For the remainder of this discussion, runway 5-23 will be the sole point of interest.

6.1.1.1 Runway 5-23 Declared Distances

As listed in Table 1, Runway 5-23 does not currently require the use of declared distances to satisfy standard AC-150-5300-13B design criteria.

6.1.1.2 Runway 5-23 Taxiways

Taxiway A is a parallel taxiway to runway 5-23 providing aircraft access to the full length of the runway using a standard 90^0 entry at A1 and A8, each situated at the physical end of the runway. Taxiways A2 through A7 also allow access at 90^0 entries along the length of runway 5-23.

Due to the relatively short length of runway 5-23, there is no anticipated usage of intersection departures for jet aircraft operators. Similarly, there is no expectation for a performance-limited aircraft to come to a full stop landing before either runway end. Therefore, for the purposes of this analysis, only full-length landing and takeoff will be considered as a part of the baseline operational capability assessment.

Various additional taxiways provide access to the hangars and parking locations around the airfield.

6.1.1.3 Runway 5-23 Elevation Profile

The overall elevation profile of runway 5-23 reflects the slope of terrain under the runway which is consistently sloped in one direction with no significant undulations. Runway 5 has a downhill slope of -0.05%, while the reciprocal runway 23 direction shows an uphill slope of 0.05%.

Aircraft performance calculations must account for runway slope. Operators commonly calculate slope between the brake release point (start of TORA/TODA) and the DER (usually the end of the TORA/TODA). This is referred to as a 100%, or full length, slope calculation. In situations where the physical runway profile exhibits significant undulations, or the physical profile dips below the elevation found by using only the starting and finishing elevations, some aircraft operators may use a different slope calculation using a reduced portion of the runway length and elevation. Since the surveys for UGN do not show significant mid-runway elevation changes, this analysis assumes the runway is approximately planar. The project team will therefore utilize the 100% slope calculation and assume that no aircraft operators currently flying into UGN would utilize an alternative slope calculation method.

6.1.1.4 NAVAIDs

The following baseline NAVAIDs, identified in Table 2 were considered for the existing UGN runway 5-23.

Table 2 Existing NAVAIDs Supporting runways 5-23.

NAVAID Ident	Type	RWY Served	Distance from LDG Threshold (feet)	Offset from Rwy CL (feet)	Elevation (feet MSL)
I-UGN	Localizer	23	6,599.3	N/A	724.8

I-UGN	GS	23	1151.1	399.2	711.2

All information in Table 2 was compiled from FAA eNASR during the 26DEC24 AIRAC, and the FAA Flight Inspection Datasheet for the I-UGN ILS. This NAVAID is presumed to be replaced or relocated with the proposed runway 5-23 relocation described in this report.

6.1.1.5 Runway 5-23 Bearing Strength and PCN Limitations

No current pavement classification number (PCN) has been published for runway 5-23. The published weight limitations published in the FAA Chart Supplement for UGN runway 5-23 do not suggest any potential limitations for larger business jet aircraft.

The single-wheel main landing gear limitation of 95,000 pounds is adequate for all anticipated aircraft operations with that landing gear configuration. Similarly, the dual-wheel landing gear limitation of 120,000 pounds will also be adequate for larger business jet aircraft.

6.1.2 Obstacle and Terrain Sources

6.1.2.1 Obstacle Sources

Obstacle information considered in this analysis originated from a combination of FAA and airport/project team sources intended to cover a 50 nautical mile radius surrounding UGN. This included obstacle information specific to UGN and other obstacle information in the vicinity of the airport as seen in Figure 3 below. All pertinent obstructions were within five nautical miles of the airport.

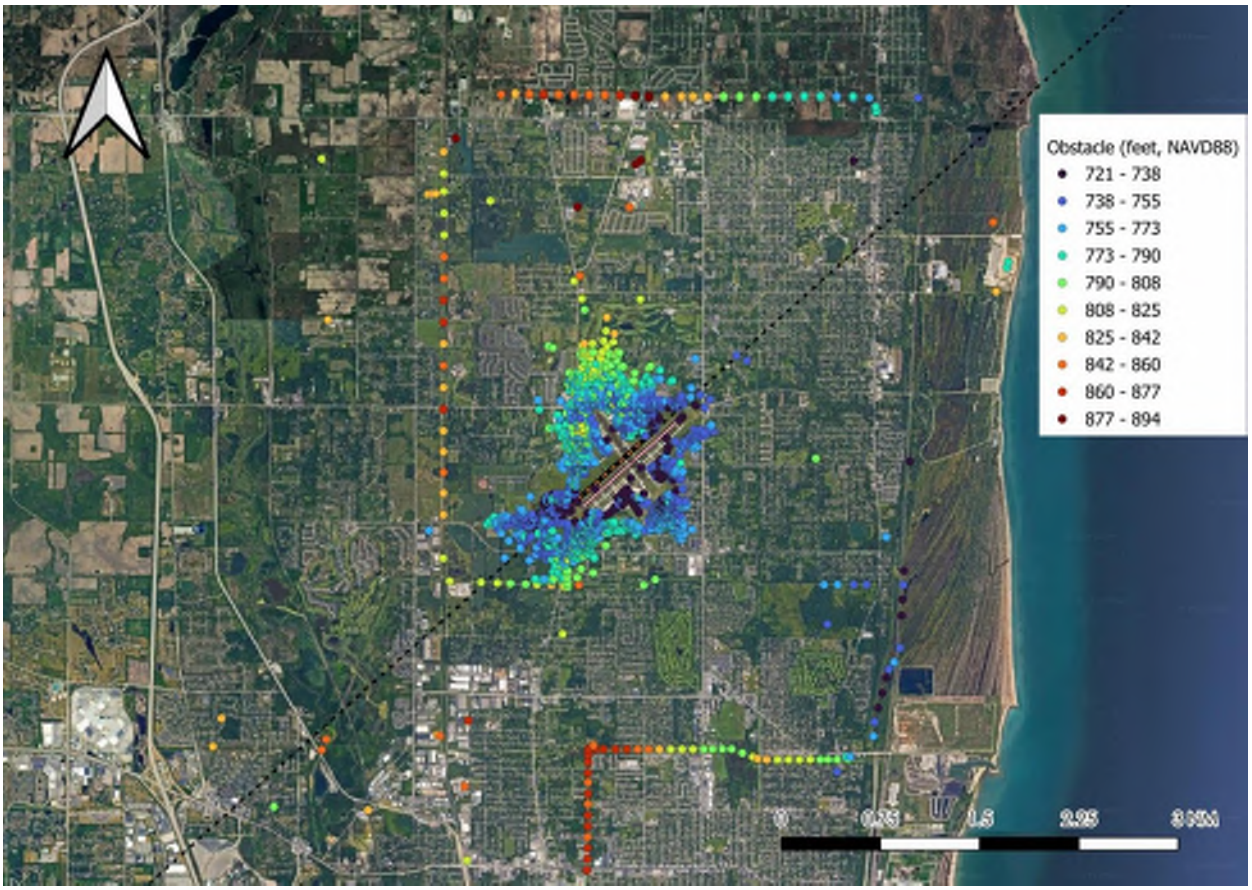


Figure 3 Obstructions Considered for UGN.

The first source used to gather existing obstacle information in the vicinity of the airport was the FAA Obstacle Authoritative Source (OAS), which was accessed via the FAA AIRNAV download available from the Aeronautical Data Information Portal (ADIP). This data was obtained using a radius-based search for obstacles information located within 15 nautical miles of UGN.

Obstacles in AIRNAV represent a combination of previous AC-150-5300-18B compliant obstacle surveys, surveys performed for airport surface clearance and FAA flight inspection obstacles. Obstacles obtained from this source contain FAA assigned accuracy values which introduce a horizontal and vertical uncertainty that translates an obstacle referenced using WGS-84 coordinates to define a point with an elevation, into a 3-dimensional cylindrical shape. The uncertainty associated with the accuracy of cylinder must be considered for instrument procedure design but is often not required (or considered) for airport planning surfaces, airspace protection surfaces, or one engine inoperative calculations performed by 14 CFR 91-K, 121 and 135 aircraft operators.

For aircraft performance calculations, the obstacles available in AIRNAV are considered to be both known to business jet operators, and their 3rd party aircraft

performance suppliers. They are currently considered when determining limiting takeoff weights, ultimately influencing payload range decisions.

The second source used for this project were specific AC-150-5300-18B surveys, the most recent of which was performed following the previous airport/runway enhancements in April of 2020. These were both provided by the project team and downloaded from FAA ADIP and overlaid on top of the AIRNAV obstacles.

The final obstacle source considered in this analysis was the obstacle information available from the FAA Obstacle Evaluation and Airport Airspace Analysis (OEAAA) website. Determined OE cases, which represent proposed structures off the airport, and determined NRA cases, which represent proposed projects and structures on the airport, were collected from 2023 to Q4 2024 and evaluated. Any determined obstacle that would result in a structure which could affect one engine inoperative aircraft performance was considered to exist for the purposes of the runway length determination. The only exceptions were cases where the OE was seen to either be temporary, and did not result in a new structure after the temporary action was completed, or cases where an NRA identified a temporary project on the airfield.

The project team compared the OAS, airport specific surveys and OE to current aerial imagery to determine if any significant discrepancies exist. Vegetative changes, powerlines, cell phone towers, roads and property developments were examined along the one engine inoperative corridors. It is also important to ensure that proposed 7460-OE obstructions are accurately identified by the FAA for performance purposes. For example, most objects that are proposed in areas without instrument procedures are assigned an accuracy code of 4D (50 ft vertical accuracy, 250ft horizontal accuracy). If the object is approved, the FAA and developer are not required to take any further actions to refine the accuracy of the object. In some cases, this results in a large complex structure being represented by a single point while an aircraft operator or 3rd party aircraft performance vendor will likely consider a portion of the object (not identified by the FAA's single point definition) to limit aircraft performance.

When taking all the terrain sources into consideration, UGN experiences mostly close-in obstruction issues with no distant obstacle challenges that would limit one engine inoperative takeoff performance. Significant close-in vegetative growth both northeast and southwest of the airport creates challenges for operators that calculate one engine inoperative takeoff performance with obstacle clearance. However, as will be discussed further in coming sections, most of these close-in obstructions are likely to be mitigated as part of the runway relocation.

The comparison of imagery to existing survey revealed some vegetative discrepancies north of the airport which will be discussed in the next section.

6.1.2.2 Terrain Sources

Terrain information was sourced from USGS 3DEP at a 30m spacing across the 50 nautical mile (nm) area surrounding UGN. A 100 ft. vegetative allowance was applied to all terrain values for aircraft performance considerations.

UGN is located near the western edge of Lake Michigan with low-lying terrain sloping away to the east and gently rising terrain west. The airport is not situated at an unusually high elevation relative to its surroundings, thus no takeoffs encounter any terrain significantly higher than airport elevation. The 3DEP information aligned with the overall topographical and geological understanding of the area with no gaps in coverage or voids due to cloud cover.

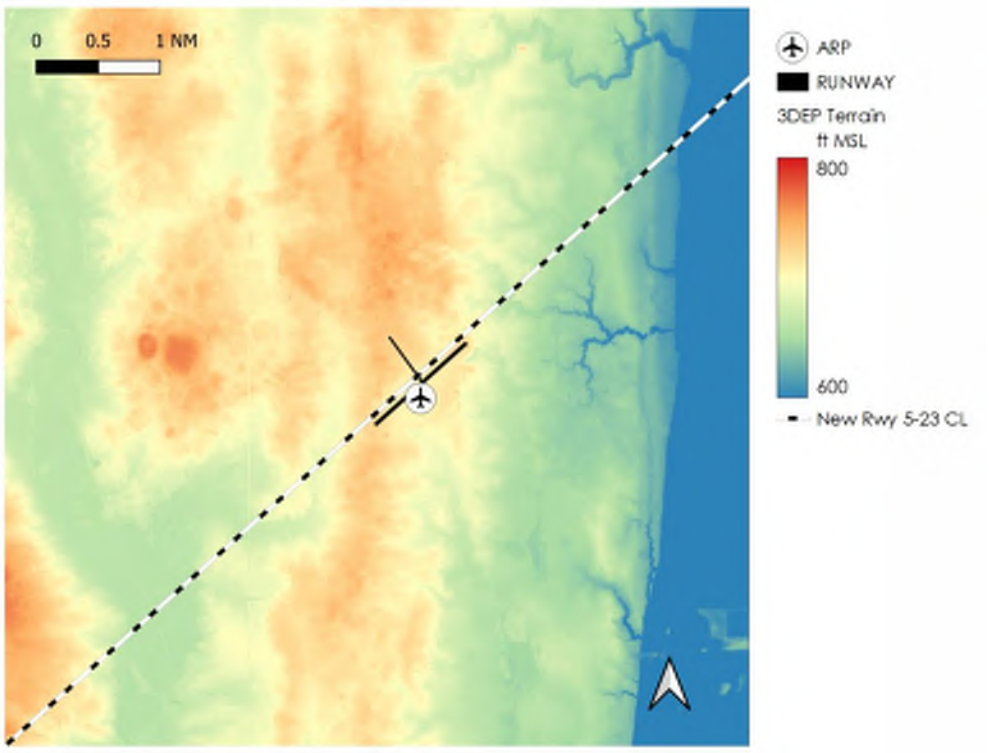


Figure 4. Base terrain in the vicinity of UGN.

6.2 Relocation and Extension of Runway 5-23

To determine the required runway length necessary to satisfy current, and future, aircraft operations at UGN, Lean examined a potential extension to the southwest of the existing runway beyond its current length of 6,000 feet. The offset between the future 5/23 centerline and the current runway 5/23 is 400-foot offset. While the relocated runway is intended to be parallel to the current runway, the thresholds will not be directly adjacent as indicated in Figure 5. The following section describes how a possible runway extension was considered for the purposes of evaluating aircraft performance (for input into the advanced runway length determination).

6.2.1 Runway Threshold Locations

The primary change in the runway considered in this analysis is the construction of a new runway 5-23 northwest of the existing runway on the same alignment. Extensions of the runway from the current 6,000ft are examined by permitting the runway 5 threshold to be extended to the southwest up to a maximum analyzed length of 7,000 feet (a

1,000-foot extension when compared to the existing runway). This would involve moving the runway 23 landing threshold approximately 2,100 feet to the southwest.



Figure 5. Area of Possible Runway Extension Considered for Runway Length Determination (Orange)

A possible layout of the airfield, showing the area of a new runway 5-23 that was considered for extension can be seen in Figure 5. This analysis assumes that any runway extension will maintain the existing slope of the runway for aircraft performance calculation purposes.

The terrain/elevation information available for this analysis was discussed in Section 6.1.2.2 and plays an important role when considering extensions of runway 5-23 to the southwest.

6.2.2 Obstacle and Terrain Considerations: Takeoff from Relocated Runway 5

Figure 6 depicts the obstacles considered for one engine inoperative (OEI) takeoff performance calculations from the relocated runway 5 used in the advanced runway length analysis.

In this scenario, the departure end of the relocated runway 5 (approach end of runway 23) is fixed by a combination of parcel boundaries and runway design constraints. Therefore, all departures from runway 5, regardless of length, use the obstacles depicted below. Obstacles with a red 'X' represent obstacles that currently exist within the OAS but are anticipated to be removed or otherwise mitigated with the runway relocation.

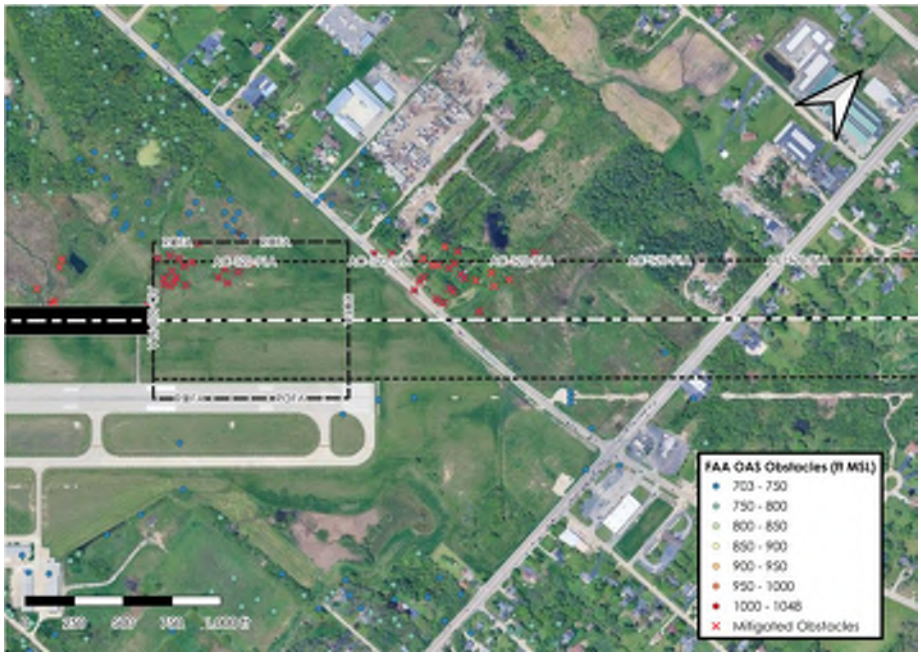


Figure 6 Rwy 5 Close-In OEI Considerations

Obstacles considered for OEI takeoff performance were identified using the FAA AC-120-91A Area Analysis Method. The project team created one engine inoperative departure procedures (OEI DP) which represent the most likely solutions for both current and future aircraft operators. The procedure utilizes the standard method created by all 3rd party aircraft performance providers to business jet operators. The procedure is to climb on the runway heading until reaching an operator determined safe altitude, which is assumed to be 1,500ft AFE (Approximately 2,300ft MSL).

6.2.3 Geospatial Deconfliction for Departures from Runway 5

All vegetative obstacles, either defined by FAA or identified by satellite imagery, that would affect a relocated runway 5 departure appear to be current.

Based on feedback from CMT and UGN, LEAN assumes that all vegetative obstructions within the first 2,000 feet from the departure end of runway 5 will be mitigated as part of the runway relocation. Future mitigations will be performed in accordance with AC-150-5300-13B runway design.

Vehicles along Wadsworth Rd were found to be beneath the proposed DER elevation and were not required for consideration.

Based on the removal of the vegetative obstructions, and lack of any additional obstacles, the OEI runway length calculation for departures in the runway 5 direction considered the departure path to be clear of obstructions.

6.2.4 Obstacle and Terrain Considerations: Takeoff from a Relocated Runway 23

Figure 7 and Figure 8 depict the obstacles that were considered for one engine inoperative takeoff performance calculations from a relocated runway 23 used in the advanced runway length analysis. The two cases depicted below in Figure 7 and Figure 8 reflect close-in obstacles at potential takeoff run/takeoff distances of 6,000 feet and 7,000 feet, respectively. Obstacles with a red 'X' represent obstacles that currently exist within the OAS but are anticipated to be removed or otherwise mitigated with the runway relocation in accordance with AC-150-5300-13B design standards.

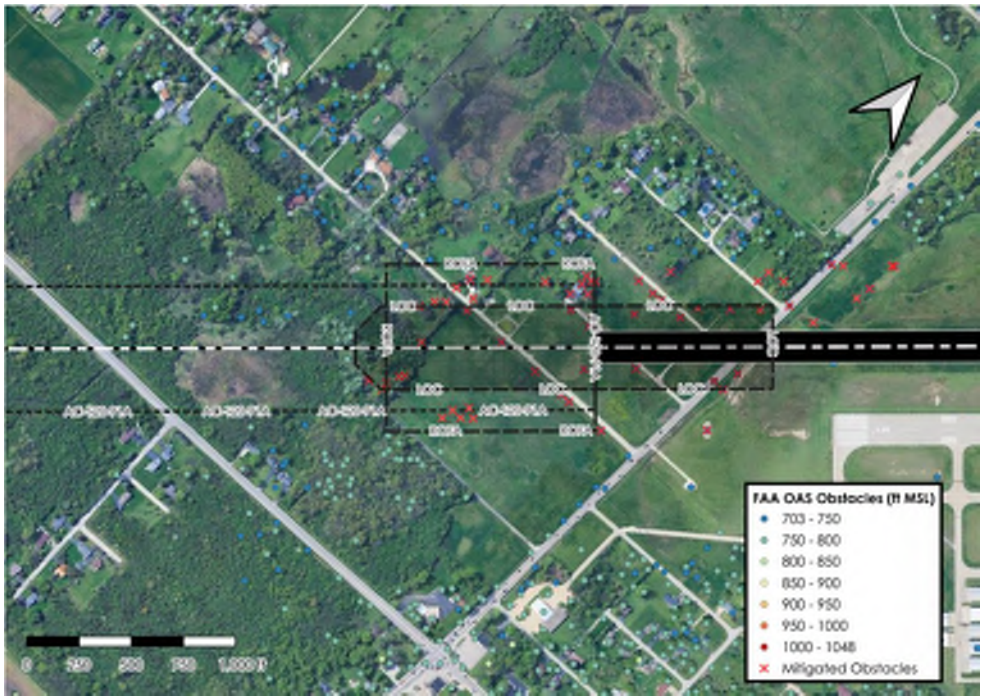


Figure 7 Rwy 23 Close-In OEI Obstacle Considerations, TORA = 6,000 feet.

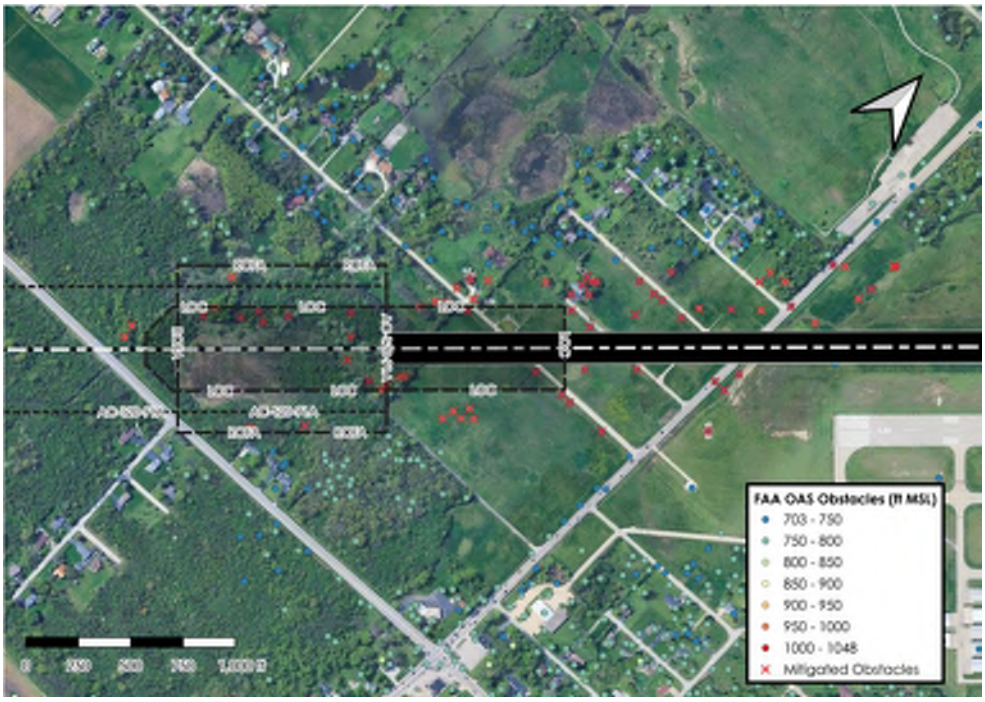


Figure 8 Rwy 23 Close-In OEI Obstacle Considerations, TORA = 7,000 feet.

Obstacles considered for OEI takeoff performance were identified using the FAA AC-120-91A Area Analysis Method. The project team created one engine inoperative departure procedures (OEI DP) which represent the most likely solutions for both current and future aircraft operators. The procedure utilizes the standard method created by

all 3rd party aircraft performance providers to business jet operators. The procedure is to climb on the runway heading until reaching an operator determined safe altitude, which is assumed to be 1,500ft AFE (Approximately 1,600ft MSL).

In accordance with current industry practice, the obstacles identified in the OEI DP were used without the application of any obstacle accuracy. Any terrain values encountered included the application of a 100ft additive to account for the possibility of vegetation or other un-surveyed land cover.

Given that this is a de facto new runway, current definitions for runway safety area (RSA), runway obstacle free areas (ROFA). Furthermore, the project team assumes that runway 23 will continue to be served by a localizer which has a unique critical area which must be cleared. Thus, close-in vegetative obstructions are assumed to have been mitigated for all runway length scenarios examined here.

The current limiting obstacle on a relocated runway 23 is a power line listed at 814 feet MSL, approximately 4,600 feet from the DER, assuming a 6,000-foot TODA, or 3,600 feet from the DER assuming a 7,000-foot TODA.

6.2.5 Geospatial Deconfliction for Departures from Runway 23

The advanced aircraft performance analysis of the expected conditions indicates the most limiting obstruction impacting runway 23 takeoff performance is a power line west of Northwestern Avenue between W Blanchard Road and York House Road, shown in Figure 9 below.

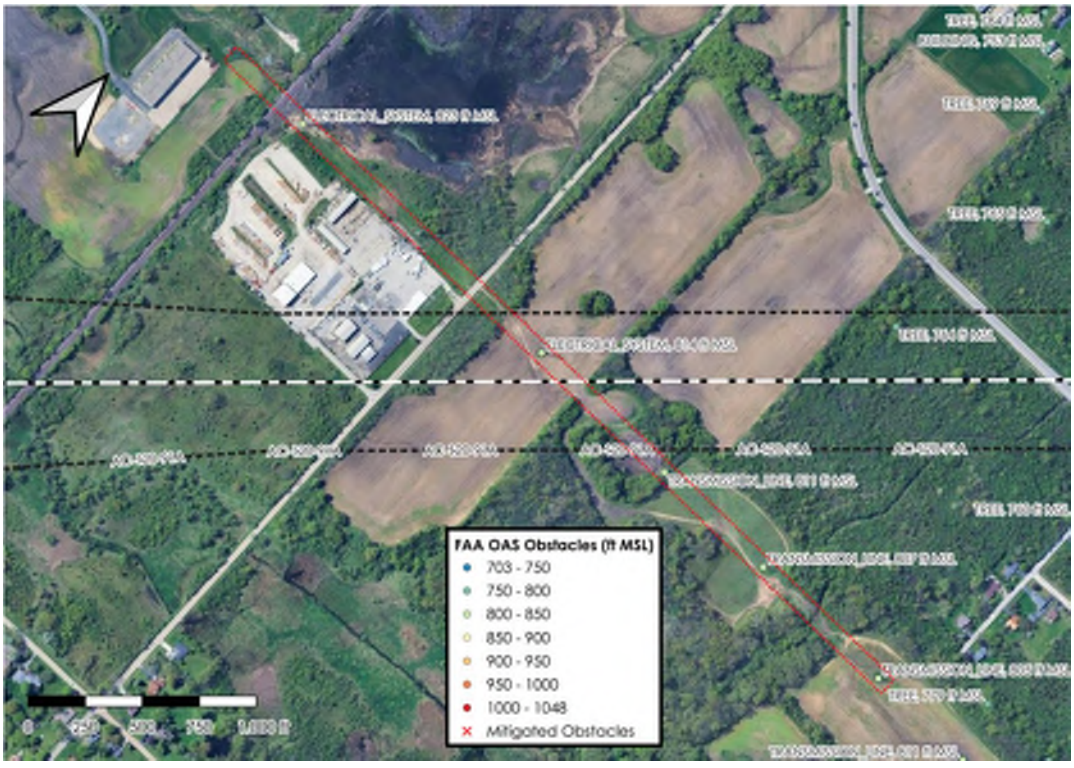


Figure 9. Powerline obstacles published by FAA sources that limit runway 23 takeoff performance.



Figure 10. Google Streetview image of powerlines.

During the geospatial deconfliction process, LEAN used current street view imagery (from Google) to validate the existence of this obstruction. In Figure 10, the image shows the transmission lines and towers that match the FAA OAS and 2010 VGA survey.

As will be discussed later in this report, these obstructions impact aircraft performance and will ultimately limit the effectiveness of a runway extension to the southwest if not mitigated in some fashion prior to an extension to the southwest. For the performance calculations shown in this study the obstructions are assumed to exist and are accounted for unless otherwise explicitly stated.

7 Historical Weather Data

Performing a Monte Carlo analysis in support of the advanced runway length determination requires consideration of both terminal weather data to account for its influence on takeoff performance, and enroute weather to consider its effects on flight planning. This section describes the historical weather data that was collected, the overall properties of key weather data, and which historical weather data was used to create distributions as inputs to the overall runway length analysis.

7.1 Terminal Weather Data

Terminal weather data, like temperature, pressure, runway surface condition and wind direction & speed are required by regulations when operators determine takeoff and landing limits. For a specific flight operation, this data is usually taken from METARs or D-ATIS information and is supplemented by pilot or air traffic controller observations. Additional information about the runway surface condition can be obtained by Field Condition NOTAMs (FICONs) which are published by the airport and indicate whether the runway is dry, wet, or contaminated by snow/slush/ice. FICONs are divided into 1/3rds of the runway and updated by airport personnel and published during events when the runway is predicted, or discovered, to be less than dry. FICON data was not made available to the project team for the purposes of this study.

When using terminal weather data to inform a forward-looking aircraft performance calculation, like runway length determination, it is important to balance the selection of weather-related inputs with statistically significant reliability. The goal of this selection is to ensure that a variable modeled as an input can be both a plausible expectation of

future weather conditions and not an inadvertent statistical outlier that creates an unintentional bias in the results.

This section describes how terminal weather information was collected, which inputs were selected for use with takeoff performance computations and how the information was converted into distributions for use with the Monte Carlo modeling.

7.1.1 Source and Methods for Terminal Weather Data Processing

Terminal historical weather information was collected from the National Climactic Data Center (NCDC) Climate Data Online (CDO) servers for UGN over a 10-year historical period. UGN has on-airport weather data collection via an FAA ASOS. Data was originally reported from the in the form of METARs consisting of both routine, hourly, observations and special conditions, off hour, weather observations resulting from nearly 130,000 observations.

To express historical weather observations in a format usable either directly or indirectly as an input for a Monte Carlo analysis, a process of time weighting must be accomplished over the source data. Typically, weather observations are made on an hourly schedule. When a significant change in weather occurs for wind, ceiling, or precipitation due to a storm or turbulent wind conditions, these observations may be made more frequently. The process of time-weighting accounts for these "brief" weather observations that only occur during some portion of an hour, without exerting an excess influence relative to the typical hourly observations. The mathematical steps used to achieve time weighting are not expressed in this report but can be described in more detail by the project team upon request.

Increasing data fidelity to time increments of less than an hour has been found to yield no statistical difference to the results constructed over a one-hour increment. However, accounting for monthly variations in data is essential to ensure the accuracy of any normalization in a data distribution used as an input.

Once the time weighting process has been applied to the source data, all historical weather properties are available for direct application with aircraft performance calculations. From this dataset, the project team can decide whether to use either generalized distribution models or discrete empirical inputs. These discrete selections do not permit additional modification of historical weather but do provide Monte Carlo level analysis to more accurately sample data from variables which could be difficult to accurately express through any regression analysis.

The choice of using a selected distribution (often achieved through curve fitting) for a particular variable can be used directly or modified to reflect future states at the airport. This method is typically limited only to temperature and pressure information.

For the purposes of this analysis, none of the terminal weather data inputs used in the Monte Carlo analysis were modified from the time weighted values derived over the previous 10-year period (no climate change effects are applied). This unmodified data

was chosen in an attempt to align the results of this analysis with other accepted FAA methodologies regarding simplified applications of Average Daily Maximum values.

7.1.2 Temperature

The effect of temperature on aircraft performance is significant to engine thrust, lift, altitude correction and absolute operating limitations.

10-year historical temperature information for UGN, presented in Fahrenheit for the convenience of the reader, is presented in Table 3 and Table 4 for the 50% and 85% confidence intervals.

Table 3 10-Year Median Historical Outside Air Temperature at UGN expressed in degrees Fahrenheit.

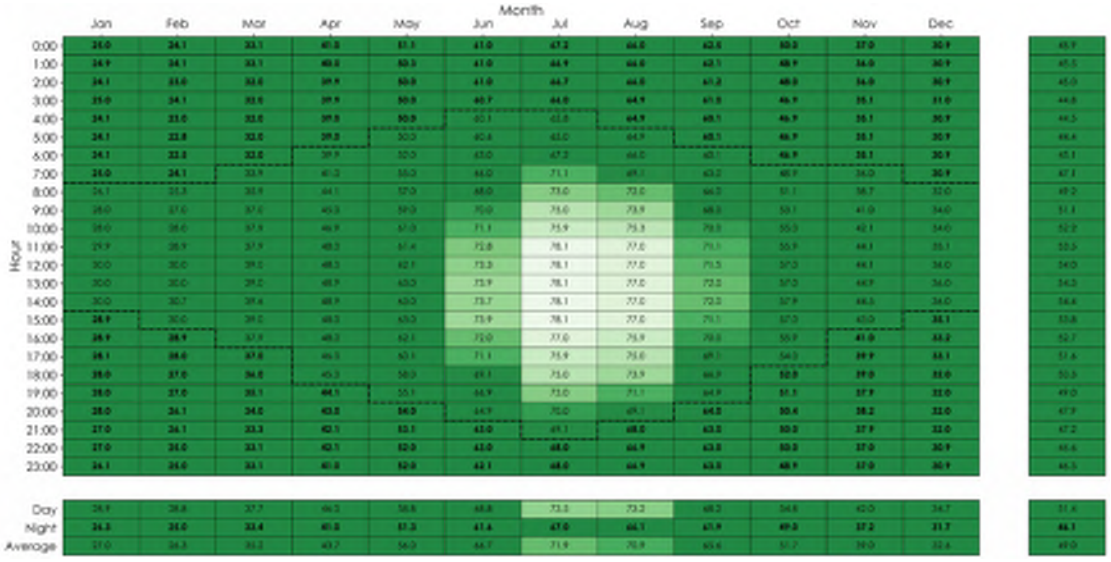
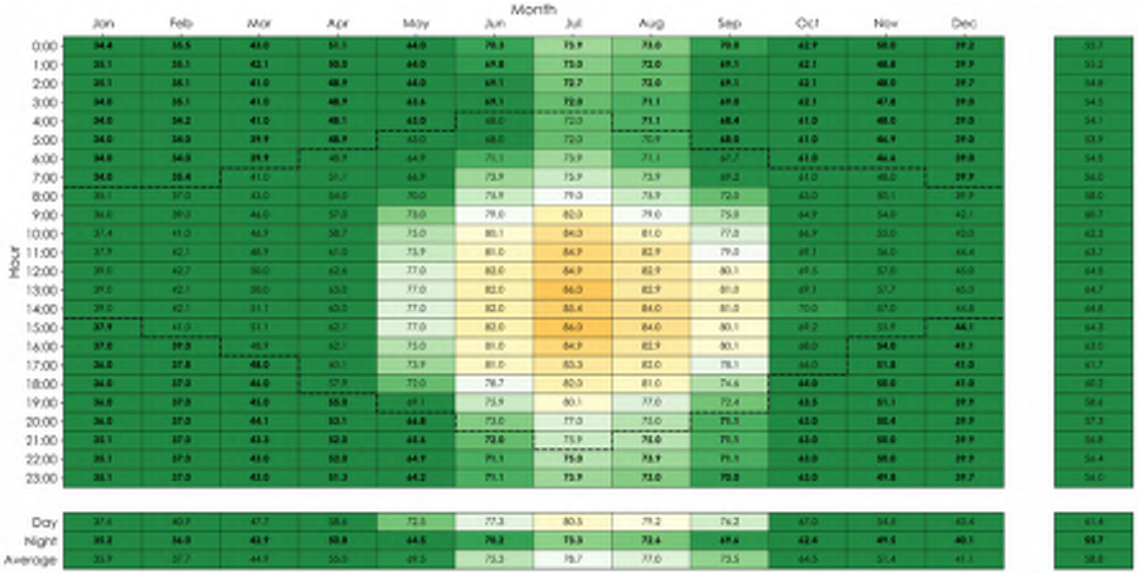


Table 4 10-Year 85% Confidence Interval Historical Outside Air Temperature at UGN.



Cells in the tables are color coded to visualize which hours of the day, and months of the year, are expected to experience temperatures which may adversely impact aircraft (yellow). Green or white cells have negligible temperature effects on aircraft performance. This breakdown was determined by the project team based on typical thrust break temperatures for the aircraft selected and seeks to generally identify hours of the day when runway length results may be longer than those anticipated under standard day conditions.

The 85% confidence interval value represents a direct application of the standard deviation for the weather data calculated across the entire year (all 12 months, all hours) for a 2-sided normalized distribution. This application approximates the Average Daily Maximum and is a commonly used value by most airlines when considering payload forecasting for a market. For perspective, the highest observed temperature from the dataset was 100.0F and the coldest temperature was -23.0F.

From this analysis, UGN experiences its temperatures from June to September which may impact aircraft performance. However, the high temperature distribution is narrow, due to the airports proximity to Lake Michigan, and the airport rarely experiences severely penalizing high temperatures that can be experienced by Chicago Area airports 15-20 miles further west.

None of the temperature observations over the past 10 years exceeded certificated operating limits which could have precluded takeoff or landing operations from occurring. Therefore, pseudo random sampling of all months and hours of temperature data can be considered for the aircraft performance analysis.

7.1.2.1 Temperature Application in the Advanced Runway Length Analysis

To implement the anticipated range of temperatures that would be most applicable to assess operational capabilities using the Monte Carlo advanced runway length analysis, the project team elected to utilize a normal distribution to represent the temperature for a given month across any hour of the day rather than a normal distribution spread across the entire year. This was selected in part, because a normal distribution model can be adapted to match a specific month's worth of historical temperature information without needing to consider bi-modality or skew.

The decision to use monthly distributions was also chosen because the Monte Carlo analysis did not focus on either a single hour, or a limited range of hours for possible operations. This means that the temperature used in the Monte Carlo analysis can be applicable to any hour in a given month as a starting point for a single permutation in the Monte Carlo process.

The result of creating 12 independent normal distributions of historical temperature means that the Monte Carlo outcomes run over all 12 months will not reveal a distribution of temperature values that reflects an annual normal distribution. This will ensure that the specific climate effects that UGN experiences will be accurately represented in the overall results.

7.1.3 Pressure

The local pressure at an airport is often different than the values anticipated under standard atmospheric conditions. Flight crews must consider these nonstandard conditions to ensure that the pressure-based altimeter onboard the aircraft is accurately adjusted and that any non-standard aircraft performance effects are taken into consideration.

10-year historical pressure information for UGN, presented in QNH for inHg, is presented in Table 5 and Table 6 for the 15% and 50% confidence intervals.

Table 5 10-Year 50% Confidence Interval Historical Altimeter Setting (QNH inHg) at UGN.

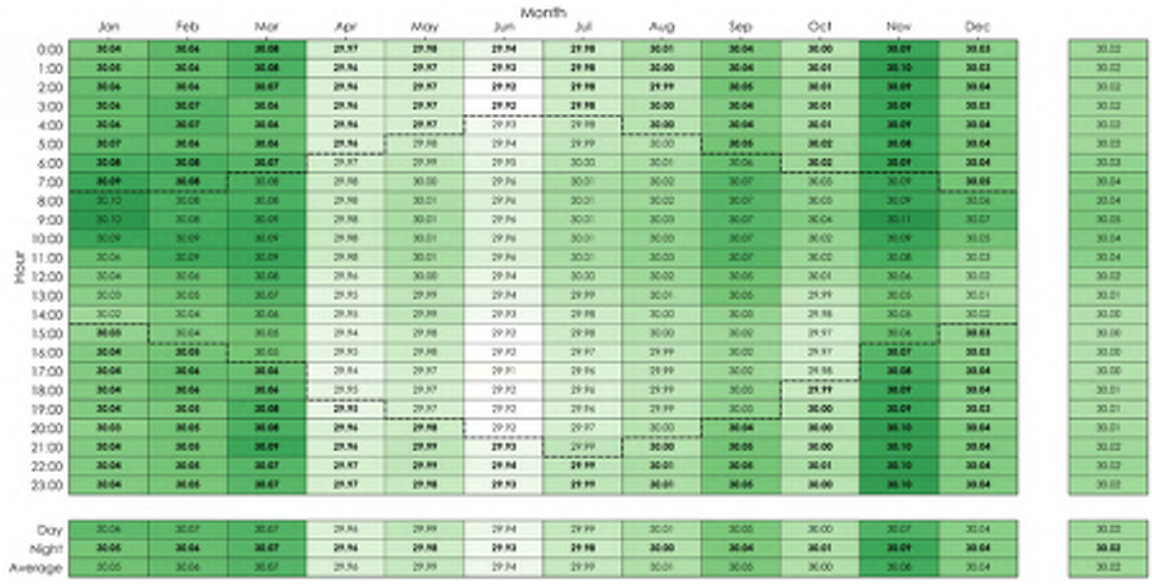
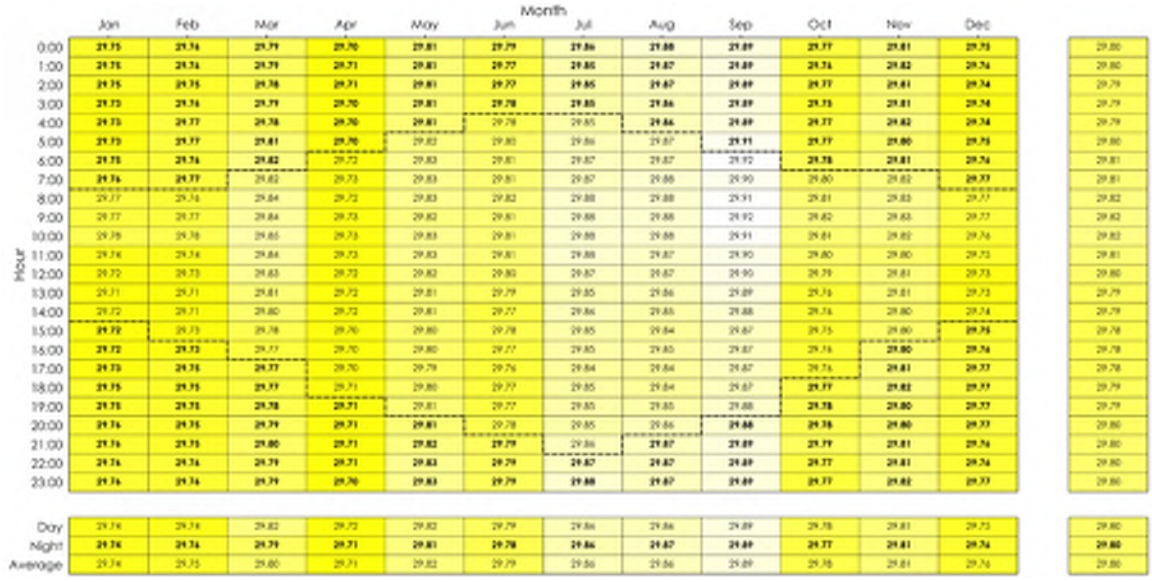


Table 6 10-Year 15% Confidence Interval Historical Altimeter Setting (QNH inHg) at UGN



Cells in the table are color coded to help visualize which hours of the day, and months of the year, are expected to experience pressure conditions which are beneficial to aircraft performance (green), adverse to aircraft performance (yellow), or neutral (white). This breakdown was determined by the project team based on sensitivity to non-standard pressure conditions for the aircraft selected and seeks to generally identify hours of the day when runway length results may be longer than those anticipated under standard day conditions.

The 15% confidence interval value represents a direct application of the standard deviation for the weather data calculated across the entire year (all 12 months, all hours) for a 2-sided normalized distribution. This application approximates a commonly used value by many airlines when considering whether non-standard pressure conditions should be considered in payload forecasting for a market.

From the results shown in Table 5, the average pressure measurements experienced at UGN are nominal to aircraft performance conditions. Furthermore, any non-standard pressure conditions are relatively minor and thus have an insignificant effect on aircraft performance and subsequent runway length determinations, especially at the airport's benign altitude.

7.1.3.1 Pressure Application in the Advanced Runway Length Analysis

Due to the limited periods of time when non-standard pressure application is expected to influence aircraft performance at UGN, the project team elected not to apply non-standard pressure to any of the Monte Carlo analysis or alternative methods for directly calculating takeoff and landing performance.

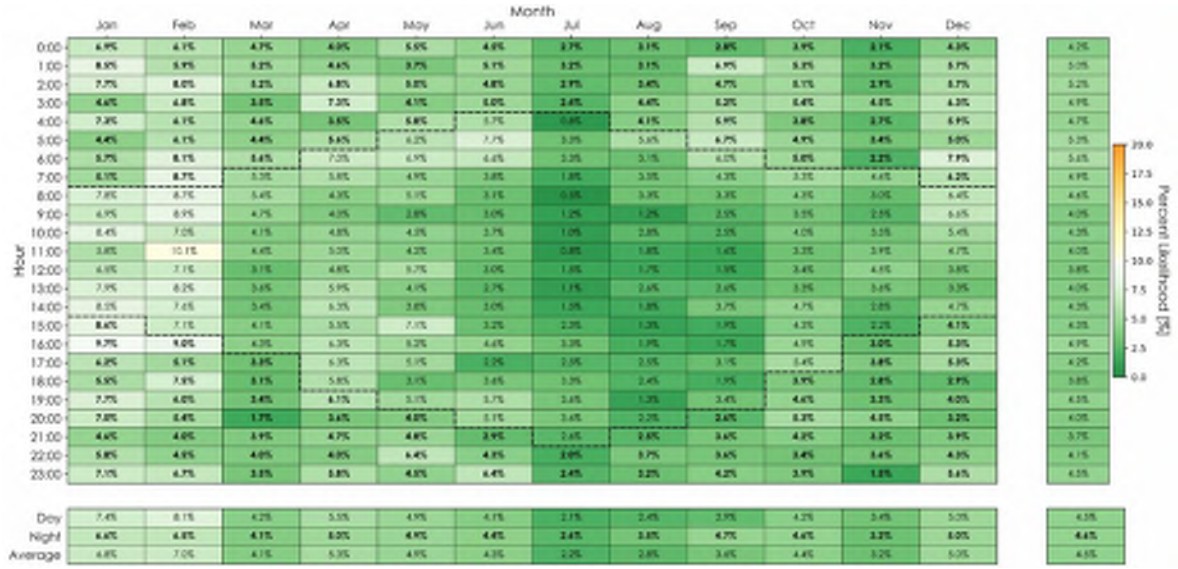
7.1.4 Runway Condition

In the current aircraft operating environment, flight crews are presented with varying runway conditions that must be considered for both takeoff and landing. This includes information about whether the runway surface is dry, wet, or contaminated by other temporary conditions like ice, snow, standing water, and slush. Any non-dry runway will create a takeoff and landing performance impact on an aircraft's ability to remain centered on the runway and bring the aircraft to a complete stop within the available accelerate-stop distance or landing distance due to a decrease in friction between airplane tires and the runway surface. For conditions worse than just wet, a contaminated runway will further degrade takeoff performance as the aircraft must push through the contaminant during acceleration for takeoff.

The project team utilized active precipitation (rain, snow, sleet), fog, and precipitation during the previous period data from the METAR to approximate the likelihood that the runway surface would be wet for a given month or hour.

10-year historical wet runway conditions information is shown in Table 7 expressed as a percentage likelihood of occurrence for a given hour/month.

Table 7 10-Year Historical Likelihood of Operating on a Wet Runway Surface



The cells in this table are color coded to reflect aircraft operator decision making about periods when a runway is expected to be wet (yellow) or dry (green) from the perspective of payload forecasting only.

From this chart it becomes apparent that wet runway conditions can be expected year-round at UGN. The peak periods of the year for wet runway conditions are the spring and winter months. While the springtime afternoon rains appear to be heavy at times, there is no evidence from NOTAMs or other sources that standing water (RCC < 5) is a regular occurrence. Based on the combination of temperature and wet runway readings and discussions with project and airport stakeholders, there is little evidence that suggests the airport experiences significant periods of operation in contaminated runway conditions.

7.1.4.1 Runway Surface Application in the Advanced Runway Length Analysis

Based on interaction and feedback from FAA regarding advanced runway length analysis methods, the project team has ***not*** utilized wet or contaminated runway conditions in any of the takeoff length calculations and all runway condition inputs are dry. In many cases, especially for smaller aircraft, the wet and dry OEI takeoff calculations result in similar runway lengths, so the project team considers the results of the takeoff length analysis representative of aircraft performance despite the use of dry-only runway condition.

It would be prudent to examine wet runway conditions for landing length assessments, but this was not part of the current scope of this project.

7.1.5 Icing

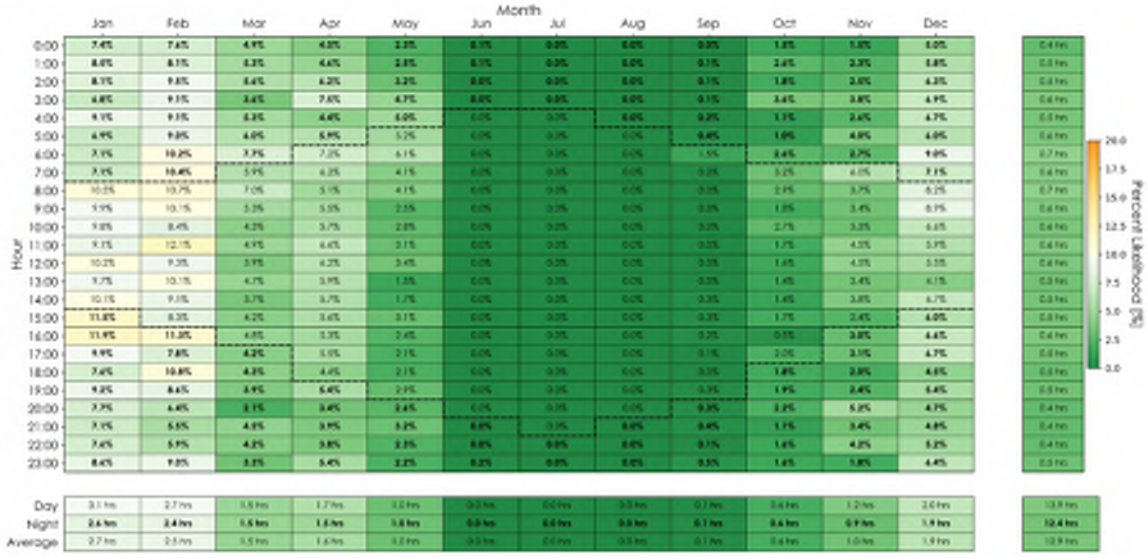
Aircraft operating in icing conditions can have an impact on both takeoff and landing performance due to the use of anti-ice engine bleeds which may degrade available engine thrust.

Icing conditions are considered to occur when the outside air temperature is at or below 10 degrees C (50 F) and visible moisture is present. While there are no direct sources available to flight crews that report the rate, amount, or likelihood of icing, most flight crews and airlines consider the need to apply anti-icing performance information taken from METARs and onboard aircraft sensors.

For the purposes of modeling aircraft performance, the combination of wet or contaminated runway surface conditions (which includes the likelihood of visible moisture close to the runway), low visibility and ceilings (which indicate additional possible sources of visible moisture in the form of clouds), and outside air temperature forms that basis of evaluating the likelihood of an aircraft operating needing to apply anti-ice engine bleeds.

10-year historical icing condition information is shown in Table 8, expressed as a percentage likelihood of occurrence for a given hour/month.

Table 8 10-Year Historical Likelihood of Operating in Icing Conditions



In Table 8, cells which have been shaded in green are periods where an operator would not base a payload forecast on anti-ice aircraft performance considerations, whereas the white and yellow cells represent hours and months where the likelihood of considering aircraft performance impacts from icing increase.

From this figure the likelihood of experiencing icing conditions is probable at UGN from mid-autumn through mid-spring.

7.1.5.1 Icing Application in the Advanced Runway Length Analysis

While there are periods of the year at UGN where aircraft anti-ice application may occur, the project team elected not to consider the effects of icing in the Monte Carlo analysis due to the low prevalence during a majority of anticipated flight operations hours.

7.1.6 Winds and Runway Usage

Runway selection is a critical variable in the determination of overall runway length requirements, especially when comparing existing or proposed runways to other runways that may be advantageously oriented in such a way to enhance overall wind coverage. A runway, or more specifically a runway direction, is preferred for operational use when that direction experiences no tailwind and has limited crosswind. For a typical airport with multiple runways covering a large portion of possible wind directions, the preferred threshold for winds is for a runway to have 0 knots of tailwind and less than 20 knots of crosswind.

The analysis of which runway direction that might be used the project team considered historical wind direction and intensity modeled together using the same METAR information as the previous weather elements.

Table 9 and Table 10 show the historical likelihood that Runways 5 and 23 would have been preferred for use based on these wind criteria. Ceiling and visibility are not considered in this discussion.

Table 9 10-Year Historical Likelihood of Rwy 5 Being Preferred for Operation Based on Wind Data

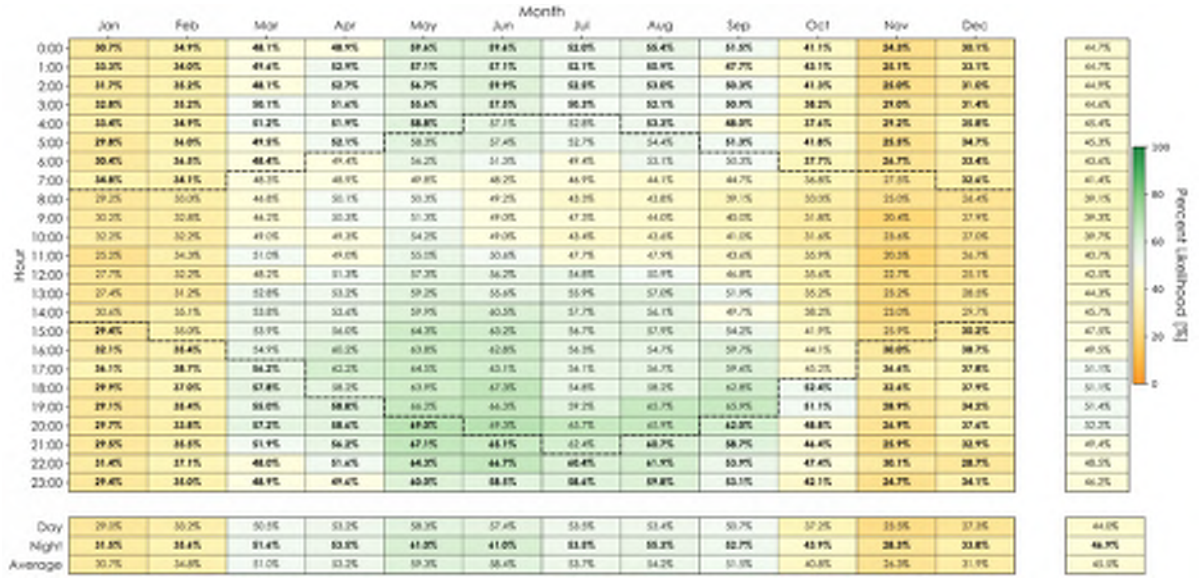
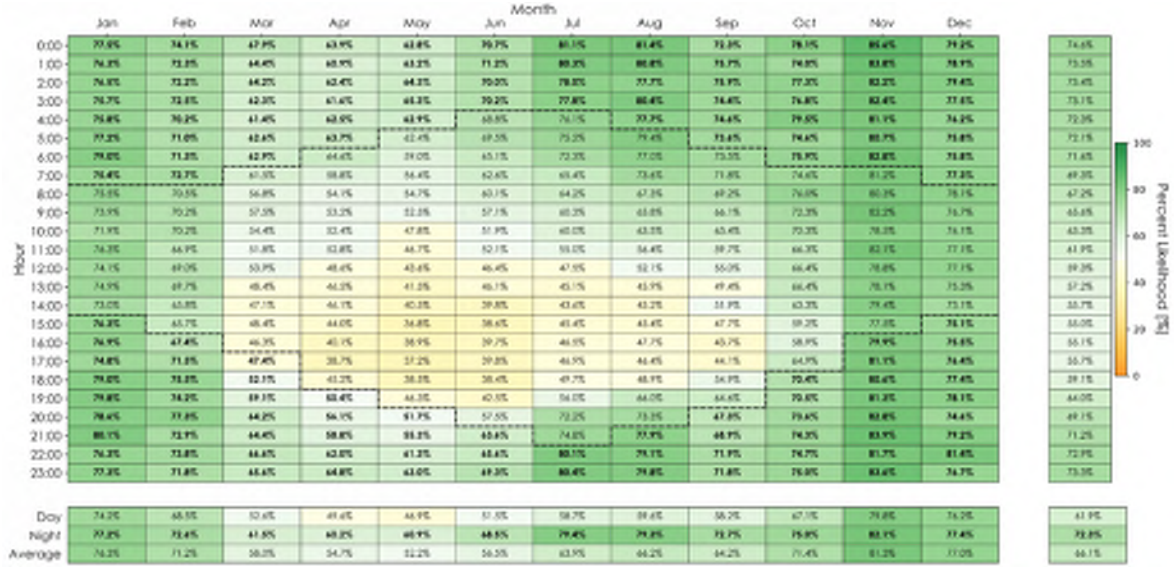


Table 10 10-Year Historical Likelihood of Rwy 23 Being Preferred for Operation Based on Wind Data



Hours and months containing values in green indicate periods when the runway would be preferred for use by an aircraft operator (assuming no other terrain, convective activity, or ATC restrictions). Hours in white represent an hour and month when the runway use is neutral, while hours and months in yellow represent periods when the runway is less likely to be used.

Similar to runway preference, the wind data was also examined to assess whether a runway could be used. A runway is considered to be capable of supporting operations up to a much higher tailwind and crosswind limit compared to the previous analysis of runway preference. In the case of UGN, no more than a 10-knot tailwind and a crosswind of up to 20 knots. Comparing both the likelihood of runway preference and runway capability provides a more complete picture regarding whether there are hours of months when a runway is rarely considered for usage or whether there are conditions when crosswinds or adverse wind conditions are so severe a runway (or runways) become unsuitable for aircraft operations, up to and including the entire airport.

Table 11 and Table 12 represent the runway capability analysis based on 10 years of historical wind data for runways 5 and 23, respectively. As before, ceiling and visibility are not considered in this segment of the analysis.

Table 11 10-Year Historical Likelihood of Rwy 5 Being Capable of Supporting Operations Based on Wind Data

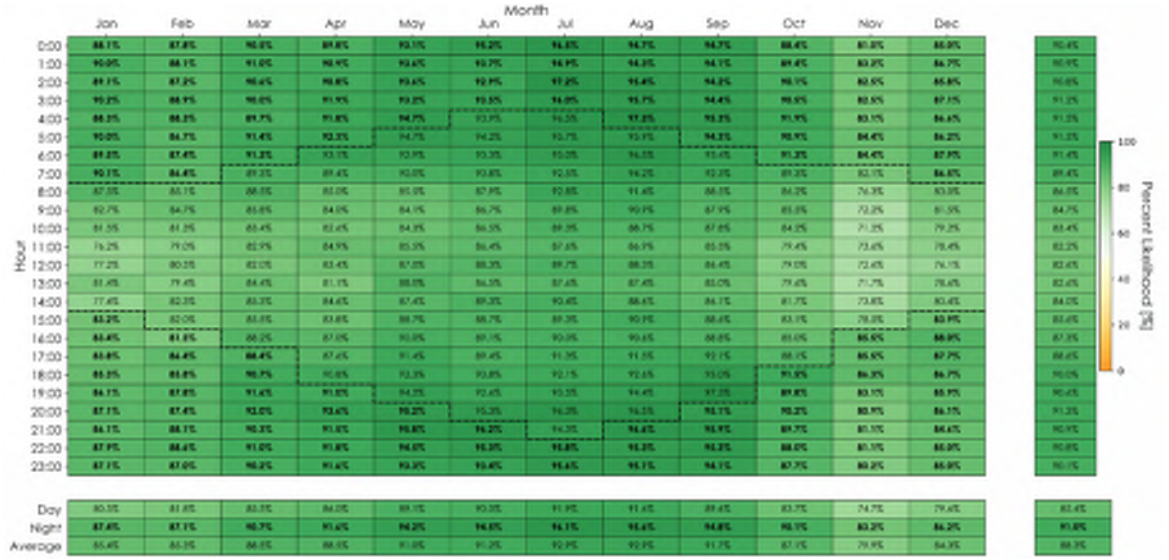
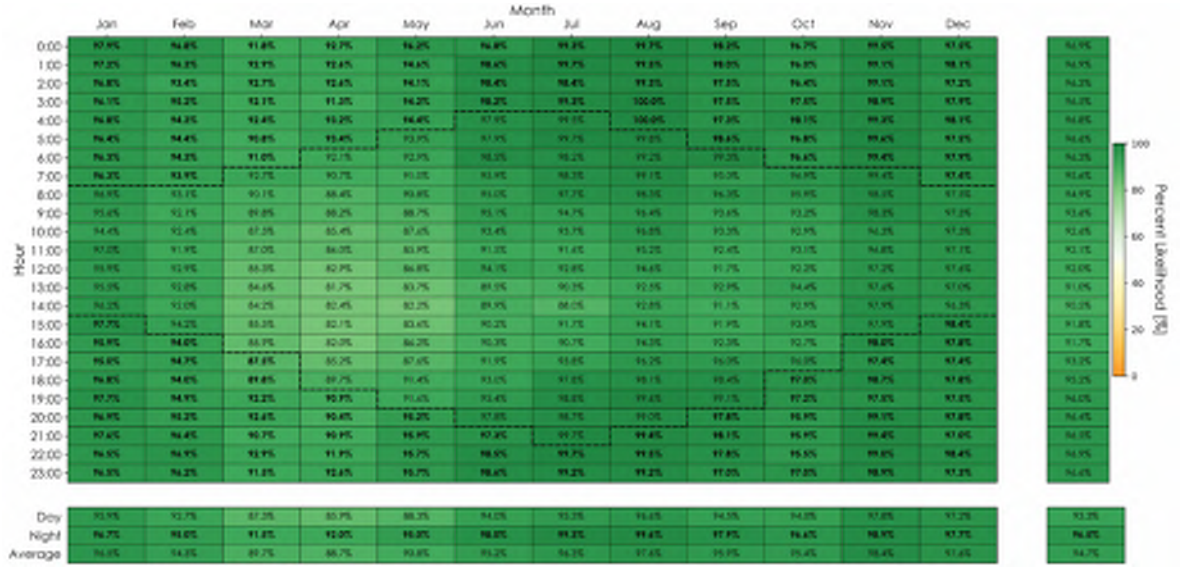


Table 12 10-Year Historical Likelihood of Rwy 23 Being Capable of Supporting Operations Based on Wind Data



The color selection in the cells for the runway capable likelihoods are the same used for the runway preference likelihoods.

This analysis shows that both runway directions are capable of supporting operations from a wind perspective. Consequently, the runway preference tables may yield a more accurate picture of likely runway selection. The data suggests that runway preference modestly leans in favor of runway 23 year-round with some periods of spring and early summer being approximately evenly split.

7.1.6.1 Wind and Runway Usage Limitations

There are three limitations from this type of wind and runway usage analysis that should be noted. The first is that when comparing a specific likelihood value for a particular hour and month across all the runways, the sum of likelihoods will most likely yield a value over 100%. This is primarily because calm wind conditions will be treated as allowing each runway to be equally likely of usage.

The second limitation to note is that wind gusts were considered as steady state wind conditions without any further manipulation (e.g., multiplying gusts by 1.5). This can result in time periods where the likelihood of a runway direction is neither preferred nor capable. Because gusting wind conditions typically do not last for prolonged periods of time, the application of time weighting minimizes the overall impact of high gusting wind conditions over a given period. However, gust application against the established crosswind and tailwind limitations can limit the overall usability of a runway.

The third limitation is that this level of runway usage analysis is not based on any historical air traffic utilization information. While this information is valuable in verifying that the historical weather analysis is a close match to commonly experienced airfield conditions, the project team has verified these findings with the airport and found them to be generally consistent with historical aircraft operations.

7.1.6.2 Wind Application in the Advanced Runway Length Analysis

The project team has chosen to use calm wind conditions for the advanced runway length analysis.

The analysis described to this point has focused on using thresholds of tailwinds and crosswinds to identify when a runway may be preferred or capable of supporting aircraft operations.

However, part 91, 91-K, 125 and 135 aircraft performance calculations require consideration of tailwinds on takeoff analysis, which can penalize aircraft performance. For the purposes of the Monte Carlo Analysis, the adverse effect of tailwind is mitigated by assuming that an operator would choose not to takeoff or land with a known tailwind condition, thus avoiding a potential performance degradation that could increase the required runway length.

Headwind is not considered for this analysis because most operators do not take advantage of beneficial headwind in takeoff performance computations except under unusual situations as a matter of company policy.

Some aircraft can experience performance limitations resulting from crosswinds. This is common for approach and landing operations but should not result in any increased runway length requirements for runway 5-23. For takeoff purposes a crosswind can create a performance limitation under contaminated runway conditions are worse than wet (RCC < 5). In these situations, operators may need to restrict the flap settings, thrust values, or increase control speeds of the aircraft to protect against the possibility of drifting off the runway centerline. These limitations are generally only applicable to

Part 25 aircraft on runways less than 148ft wide. Since contaminated runway conditions are not being considered as a part of the takeoff analysis, these restrictions are not applied.

7.1.6.3 Runway Usage Application in the Advanced Runway Length Analysis

The runway preference was selected on an empirical discrete basis for the selection of which runway direction to use for a particular Monte Carlo iteration based on all historical observations in a given month. This means that for an annual time period, with no specific hour or group of hours, the likelihood of a particular runway direction will be selected for the target month based on a pseudo random selection from time weighted runway preference results. Utilizing this methodology, runway preference is divided approximately 60% to 40% in favor of runway 23 over the 12-month period but varies between approximately 80% and 50% preference for runway 23 depending on time of year.

7.2 Enroute Weather Data

Enroute weather information is used to determine the time, distance, and fuel necessary for a given payload to be carried between city pairs. Traditional enroute weather conditions that are considered include winds, temperature, and icing. Less common considerations such as ozone concentrations, ionospheric interruption, turbulence, convective activity, and volcanic activity are not considered in this analysis. For the purposes of ensuring accurate runway length determinations in a Monte Carlo model, several enroute weather variables can be simplified through other flight operational assumptions like route efficiency metrics (see section 8.3). Therefore, this section will only describe the consideration made by the project team regarding enroute winds, temperatures, and icing conditions.

7.2.1 Enroute Temperature

Historical enroute temperature data was taken from PACELab Mission Suite Enroute Temperature Database covering the previous 30-year period from 1994 – 2024. The temperature information is calculated along two known points on earth for any altitude and direction of flight. The temperature has been normalized by PACE and is provided to the user based on a selected confidence interval outcome for a given time period.

7.2.2 Application of Enroute Temperature to Advanced Runway Length Analysis (Monte Carlo Only)

Enroute temperature variations were not considered by the project team for Monte Carlo analysis. This is because most modern aircraft do not experience significant changes to high-speed performance characteristics unless the upper atmosphere temperatures exceed ISA+15. While this condition can occur, it is uncommon for aircraft operating on the routes being analyzed from UGN and will therefore be disregarded from the Monte Carlo analysis as a random variable. All temperatures will therefore follow ISA+0.

7.2.3 Enroute Icing

Historical enroute icing data is not a widely available information set, is notoriously difficult to obtain from publicly available weather sources and is difficult to accurately apply across generalized routes of flight over long distances. Thus, most airlines do not consider historical icing application when making payload range forecasts in favor of taking icing performance impacts into consideration during real-time flight planning.

7.2.4 Application of Enroute Icing to Advanced Runway Length Analysis (Monte Carlo Only)

Enroute icing variations were not considered by the project team for Monte Carlo analysis.

7.2.5 Enroute Winds

Historical enroute winds aloft data was taken from PACELab Mission Suite Enroute Winds Database covering the previous 30-year period from 1994 – 2024. The winds aloft information are calculated along two known points on earth for any altitude and direction of flight. The winds aloft have been normalized by PACE and are provided to the user based on a selected confidence interval outcome for a given time period.

Enroute wind data for flights originating from UGN follows a general trend across all 12 months whereby:

- Flights departing to destinations located to the northwest, west and southwest of UGN encounter headwinds
- Flights departing to destinations located to the northeast, east, southeast and south encounter tailwinds

7.2.6 Application of Enroute Winds to Advanced Runway Length Analysis

Enroute winds were used to pre-calculate flight planning fuel requirements for each month using the 5%, 15%, 50%, 85% and 95% confidence interval wind values from PACELab Mission Enroute database. The flight planning performance calculation module used for this analysis, PACELAB Mission, enables varying flight level consideration of the historical wind results based on the direction of flight and step climbs iterations. This ensures that instead of a single wind value being applied across the entire route, several historical wind levels (consistent with the selected confidence interval) would be considered.

Historical wind values were modified for the initial climb and final descent portions using a fixed ratio of 85% of the last utilized flight level. For example, if the cruise wind was 50kts, then the wind anticipated to affect the climb or descent would be 50kts * 0.85 = 42.5kts.

The pseudo-random selection of wind adjusted flight performance was achieved by considering a standard normal distribution allowing interpolation between the 5 pre-determined confidence intervals. However, no extrapolation was permitted to cover historical enroute wind situations that exceeded the 5% and 95% selections. This has the

effect of reducing extreme flight conditions that might have resulted in unusual flight planning decisions and, consequently, unusual runway length requirements.

7.3 Summary

Historical weather data was used as the basis for modeling anticipated weather conditions for consideration with takeoff, landing and flight planning aircraft performance calculations. 10 years' worth of historical data was used for terminal weather information while 30 years of historical weather data was used for enroute weather information.

While the terminal weather source data was formatted to enable monthly and hourly analysis, the calculations used by the project team resulted in monthly data distributions that were compiled across the Monte Carlo runs to present runway length analysis applicable to annual operations.

The following values were used for terminal weather inputs:

- Temperature
- Runway Usage (based on Wind Preference)
- Runway Surface Condition (Dry or Wet) Landing Only

Enroute weather inputs only considered historical wind information.

Based on a review of the historical weather data, the project team anticipates a limited range of temperature related impacts on aircraft performance with runway preference varying throughout the year.

8 Flight Operations

This section describes the aircraft that were considered for the advanced runway length determination along with the certification and operating rules that were applied, routes of flight considered and weight and balance assumptions.

8.1 Aircraft Selection

A variety of aircraft currently operate at UGN on both domestic and transoceanic routes including small to large cabin business jets along with a variety of propeller and turboprop aircraft. At the time that this analysis was conducted, there was no scheduled aircraft service to UGN.

The following section describes the aircraft that were selected for analysis, the parameters and methods used to calculate both the low speed (takeoff/landing) and high speed (flight planning) performance as well as which portions of this information were made available throughout the advanced runway length and Monte Carlo simulations and for the simplified takeoff/landing performance calculations.

The following are a list of aircraft that were originally considered by the project team for analysis in the Monte Carlo Runway Length analysis:

Aircraft:

- Phenom 300
- 560XLS
- Latitude 680A
- 800XP
- Challenger 350
- Citation X
- G550
- Falcon 900EX
- Falcon 2000EX
- Global 6000
- G650ER

This comprehensive list of aircraft was reduced to a representative group that had the following characteristics:

1. Aircraft that were likely to be operated to/from UGN on a regular, 12 month per year, basis
2. Aircraft that were likely to be operated on all, or most, of the target routes being analyzed through the Monte Carlo process
3. Aircraft that the project team had access to for high fidelity takeoff and flight planning performance calculations

When considering these three factors, the comprehensive list was reduced to the following three aircraft types:

- 560XLS
- Hawker 800XP
- Global 6000
- G650ER
- Latitude 680A
- Challenger 350
- Citation X

8.2 Aircraft Configuration

Just as runway length and historical weather values can influence the takeoff and flight planning performance of an aircraft, so too can properties related to the configuration of an aircraft. Of particular interest to this exercise are factors that influence the amount of fuel that can be carried and used, factors that influence payload capacity, and operator decisions that influence the overall weight of the aircraft.

These variables require careful examination for their impacts on overall runway length requirements and include structural weight limitations, engine types, seating configuration, passenger weight, baggage weight, cargo, load factor and aircraft empty weight.

8.2.1 Aircraft Structural Weight and Engine Types Used in Monte Carlo Analysis

The following section describes the aircraft that were considered, and the fixed values selected, across multiple configurations in operations today. Each aircraft contains a description of the following aircraft characteristics:

- Powerplant: The engines that were assumed to be installed and analyzed for takeoff and flight planning performance.
- MRMP: The certified maximum ramp weight, which is the heaviest that an aircraft can be at any time during the ground operation (e.g. taxiing).
- MTOW: The certified maximum takeoff weight, which is the heaviest that an aircraft can be at the beginning of the takeoff roll. This may be further limited by operational requirements (e.g., field length).
- MLW: The certified maximum landing weight, which is the heaviest that an aircraft can be at the point where a landing will be attempted under normal (non-emergency) operating circumstances. This may be further limited by operational requirements (e.g., field length).
- MZFW: The certified maximum zero fuel weight, which is the heaviest that an aircraft can be without any fuel onboard.
- Fuel Capacity: The usable fuel capacity, measured in liters. The density of fuel considered in this analysis was fixed at 6.76 lbs./gal.
- OEW: The operating empty weight of the aircraft to include seating, catering, flight crew and other service items that will be onboard the aircraft during the flight. A nominal value is used for this analysis. Considerable variation can occur due to operator preferences and aircraft weighing programs.

8.2.1.1 Cessna Citation 560XLS

- Powerplant: PW545B
- MRMP: 20,400 lbs.
- MTOW: 20,200 lbs.
- MLW: 18,700 lbs.
- MZFW: 15,100 lbs.
- Fuel Capacity: 1,013 gal.
- OEW: 12,220 lbs



Figure 11 Cessna Citation 560XLS.

8.2.1.2 Hawker 800XP

- Powerplant: TFE 731-5BR
- MRMP: 28,120 pounds.
- MTOW: 28,000 pounds
- MLW: 23,350 pounds
- MZFW: 18,450 pounds
- Fuel Capacity: 10,000 pounds.
- OEW: 16,200 pounds



Figure 12 Hawker 800XP.

8.2.1.3 Global Express 6000

- Powerplant: BR710-A2
- MRMP: 99,750 pounds
- MTOW: 99,500 pounds
- MLW: 78,600 pounds
- MZFW: 58,000 pounds
- Fuel Capacity: 6,646 gallons.
- OEW: 51,400 pounds



Figure 13 Bombardier Global 5000/6000

8.2.1.4 Challenger 350

- Powerplant: HTF7350
- MRMP: 40,750 pounds
- MTOW: 40,600 pounds
- MLW: 34,150 pounds
- MZFW: 28,200 pounds
- Fuel Capacity: 2,121 gallons.
- OEW: 24,800 pounds



Figure 14 Bombardier Challenger

8.2.1.5 Latitude 680A

- Powerplant: PW306D1
- MRMP: 30,950 pounds
- MTOW: 30,800 pounds
- MLW: 27,575 pounds
- MZFW: 21,200 pounds
- Fuel Capacity: 1,708 gallons.
- OEW: 18,655 pounds



Figure 15 Cessna Citation Latitude 680A.

8.2.1.6 Citation X

- Powerplant: AE 3007C2
- MRMP: 35,900 pounds
- MTOW: 35,700 pounds
- MLW: 31,800 pounds
- MZFW: 24,400 pounds
- Fuel Capacity: 1,938 gallons.
- OEW: 22,455 pounds



Figure 16 Cessna Citation X

8.2.1.7 G650ER

- Powerplant: BR725
- MRMP: 104,000 pounds
- MTOW: 103,600 pounds
- MLW: 78,600 pounds
- MZFW: 58,000 pounds
- Fuel Capacity: 7,226 gallons.
- OEW: 51,400 pounds



Figure 17 Gulfstream G650ER

8.2.2 Fixed Aircraft Configuration Values in the Monte Carlo Analysis

Business jets and turboprops offer a substantial number of variations in cabin configuration and passenger seating. These aircraft are regularly operated at less than full capacity.

To ensure that the Monte Carlo runway length analysis represents both realistic operational results and broadly applicable results, the project team was tasked with evaluating two scenarios for each aircraft, a 50% load factor, and 90% load factor.

As will be discussed in later sections, a successful Monte Carlo run is one that could support 50% or 90% of the target passengers (and their baggage) with no additional cargo beyond the passengers' bags.

For this analysis, the target cargo level identified is 0% meaning that the only items intended to be placed into the cargo hold would be those items directly related to passengers boarding the aircraft.

8.2.3 Variable Payload Values in the Monte Carlo Analysis

Even though our analysis considers a single passenger seating configuration for each airplane type, with target load factors, variations in the weight of passengers and their baggage are considered throughout the Monte Carlo analysis. By considering variations in the weight of passengers and bags, the overall takeoff, and flight planning performance calculations reflect a range of different methodologies used to estimate the weight of non-tare payload on their aircraft.

8.2.3.1 Average Passenger Weight Variation in the Monte Carlo Analysis

The average passenger weight considered in this analysis accounts for the weight of the person, their clothing and any personal items and carry-on items they may bring onboard the airplane. The value also takes into consideration a statistical blend of gender and age. Most airlines use an average passenger weight in daily operations, but businessjet operators frequently rely either on asked weights or, in some rare cases, estimated.

For the past several years, the average passenger weight used by US air carriers is 190 lbs. in the summer and 195 lbs. in the winter. This has tracked relatively closely to the average weight values that businessjet operators use for planning purposes only.

Variations in passenger weight are a critical consideration. New guidance from the FAA (Advisory Circular 120-27F) directs airlines to continuously survey passenger weights. This is anticipated to potentially increase average passenger weights by 5 to 10 lbs.

With these considerations in place, the Monte Carlo analysis considers passenger weights ranging from 195lbs to 205 lbs. The passenger weight selected by pseudo random methods, with equal probability, between 195 and 205 lbs., at a 5-lb. increment. The selected passenger weight is then multiplied by the total number of seats and becomes a required portion of the total payload considered as part of the takeoff weight for the route of flight being analyzed.

8.2.3.2 Average Baggage Weight Variation in the Monte Carlo Analysis

The average baggage weight considered in this analysis is the predicted weight of baggage that each passenger will bring with them to the business jet. Businessjet operators will estimate a market-dependent (domestic & international) weight for each piece, and a number of pieces per passenger. For example, each domestic (say, UGN-

BOS) bag is assumed to weigh 30 pounds, with a quantity of .75 bags/pax, while each international bag (say, UGN-BOS-CDG) is assumed to weigh 40 pounds with a quantity of 1.2 bags/pax.

Similar to variable passenger weight, variable baggage weight is also significant to the Monte Carlo analysis. For the purposes of this analysis, the average baggage weight per person varies from 30 lbs. up to 40 lbs. The bag weight selected by pseudo random methods with equal probability of weights between 30 and 40 lbs., at a 5-lb. increment, is then multiplied by the total number of seats and included as part of the aggregate payload that must be considered as part of the takeoff weight for the route of flight being analyzed. In addition, the total baggage weight was subtracted from the total cargo carrying capacity of the aircraft ensuring that any supplemental cargo request did not inadvertently create an overload situation in the cargo section of the aircraft.

8.3 Destinations and Routes of Flight

Using a Monte Carlo analysis to determine the effectiveness of a given runway length is dependent upon the destinations that are likely to be targeted by operators flying to or from UGN. While the purpose of this analysis is not to suggest the economic feasibility or desirability of any specific city pair, several potential destinations were taken from the Master Plan Analysis to determine distances representing plausible markets not currently served by operators at UGN.

8.3.1 Routes and Time of Departure

Based on information provided by the UGN project team, two sets of target routes identified for potential non-stop business jet operations from UGN. The first set is selected to represent current and future mid-cabin business jet activity for aircraft such as the Cessna 560XLS and the Hawker 800XP. This set includes domestic routes and routes to Central America and the Caribbean:

PHX (Phoenix, AZ)

LAX (Los Angeles, CA)

SEA (Seattle, WA)

SFO (San Francisco, CA)

POS (Trinidad and Tobago)

SJO (San Jose, Costa Rica)

SJU (San Juan, PR)

SAN (San Diego, CA)

CUN (Cancun, Mexico)



Figure 18 Map of range rings based on consistent flight times at 1 hour increments away from UGN. Ranges presented are based on historical winds. Routes considered for the advanced runway length assessment are shown as white arcs along the great circle path.

These destinations were selected as being representative of the distances and directions of flight that either have been operated from UGN or could be operated with the selected aircraft. Each of these data points is used to assess overall aircraft performance capabilities off of varying runway lengths.

The destinations analyzed are indicated in Figure 18 as airplane symbols and include a combination of city pairs examined and other destinations of significance included. Each ring on the map represents 1, 2, 3, 4 or 5 hours of flight time in any direction from UGN. These rings are adjusted for winds and help to identify other possible destinations that could be served. For example, the green ring indicating 3 hours of flight time away from UGN (3rd ring beyond UGN) has a green airplane symbol over Dallas and Houston indicating that the current runway is sufficient to support these operations. Other destinations in proximity to this green ring are also valid, even though they do not have a published symbol on the chart, like New Orleans to the southeast or Rapid City to the North. White airplane symbols on the map represent destinations that were examined for non-stop availability following the runway relocation.

UGN also serves some ultra-long-range, large cabin business jets on a regular basis. These aircraft are unchallenged on all domestic and North American routes off the existing runway length. As such, additional transoceanic destinations were selected to represent existing and desired destinations for these aircraft and their users. With the existing runway length available, depending on weather conditions, trips to these destinations may require a fuel stop, payload restrictions or other advanced trip planning.

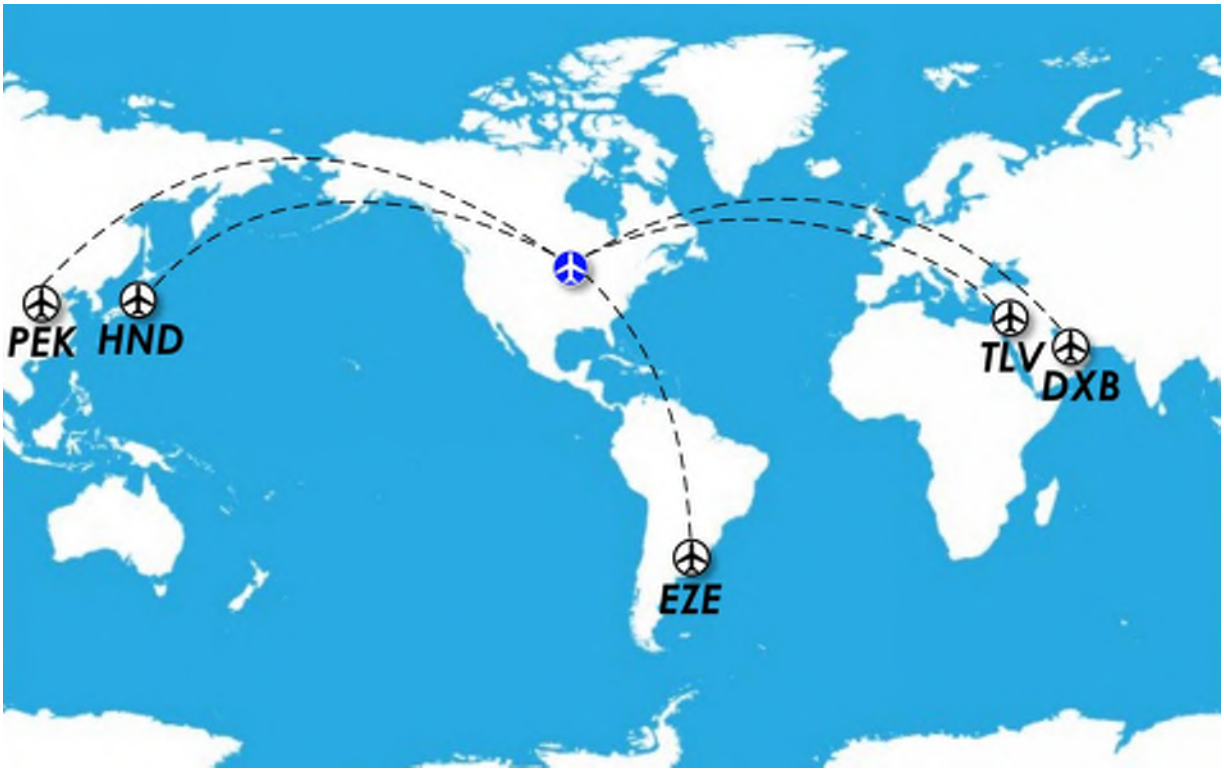


Figure 19. International destinations considered for large cabin business jets.

To increase the accuracy of high-speed aircraft performance calculations along the route of flight, the great circle distance between UGN and the destination was adjusted to reflect increased distances resulting from "route efficiency."

Route efficiency is a percentage increase in distance that the aircraft is expected to travel on top of the great circle distance resulting in a new airway distance using the formula:

Airway Distance = (1 + Route Efficiency) * Great Circle Distance

The route efficiency is used to account for the difference between the great circle distance and required airway distances used in modern air navigation; this is similar to "as the crow flies" versus street distance.

Table 13 List of Destinations and Airway Destinations Considered in The Monte Carlo Analysis

Destination (IATA)	Destination (City)	Great Circle Distance (NMi)	Airway Distance 1 (NMi) | (Likelihood)		Airway Distance 2 (NMi) | (Likelihood)		Airway Distance 3 (NMi) | (Likelihood)		Aircraft Applicability
PHX	Phoenix, AZ	1260	1273	40%	1298	40%	1323	20%	Small / Mid Cabin

LAX	Los Angeles, CA	1522	1537	40%	1568	40%	1598	20%	Small- / Mid-Cabin
SEA	Seattle, WA	1486	1501	40%	1531	40%	1560	20%	Small / Mid Cabin
SFO	San Francisco, CA	1605	1621	40%	1653	40%	1685	20%	Small / Mid Cabin
POS	Port of Spain, TT	2359	2383	40%	2430	40%	2477	20%	Small / Mid Cabin
SJO	San Jose, CR	1950	1970	40%	2009	40%	2048	20%	Small / Mid Cabin
SJU	San Juan, PR	1818	1836	40%	1873	40%	1909	20%	Small / Mid Cabin
SAN	San Diego, CA	1505	1520	40%	1550	40%	1580	20%	Small / Mid Cabin
CUN	Cancun, MX	1281	1294	40%	1319	40%	1345	20%	Small / Mid Cabin
PEK	Beijing, CN	6551	N/A	N/A	6879	50%	7075	50%	Large Cabin only
HND	Tokyo, JP	5459	N/A	N/A	5623	50%	5732	50%	Large Cabin only
EZE	Buenos Aires, AR	4892	4941	40%	5039	40%	5137	20%	Large Cabin only
TLV	Tel Aviv, IS	5350	N/A	N/A	5511	50%	5618	50%	Large Cabin only
DXB	Dubai, UAE	6274	N/A	N/A	6776	50%	6964	50%	Large Cabin only

Each of the route efficiencies listed above are not considered equally likely to occur either in the real world or in the Monte Carlo simulation. While the likelihood of each route varies significantly, the overall likelihood of each route being considered in the Monte Carlo Analysis is listed as a percentage value immediately to the right of the Airway Distance Values shown above.

This route efficiency measure is particularly impactful for the transoceanic routes considered for the G650ER and the Global 6000. Current geopolitical circumstances prevent overflight of several countries for US operators. These restricted airspaces require the use of non-optimal routes which deviate significantly from the great circle distance.

For westerly routes to destinations such as Tokyo South Korea and China, prohibition of flight over Russia requires the aircraft to travel on a more southerly routing and then east. This can result in a route efficiency of 1.05 to 1.08 or greater. For the easterly routes to Middle Eastern destinations, the flight plans must follow the North Atlantic Tracks and then, after crossing through western Europe, avoid restricted airspaces in eastern Europe and the Middle East, causing flights to travel farther south than is

optimal followed by a turn almost directly east to reach destinations like Doha and Dubai.

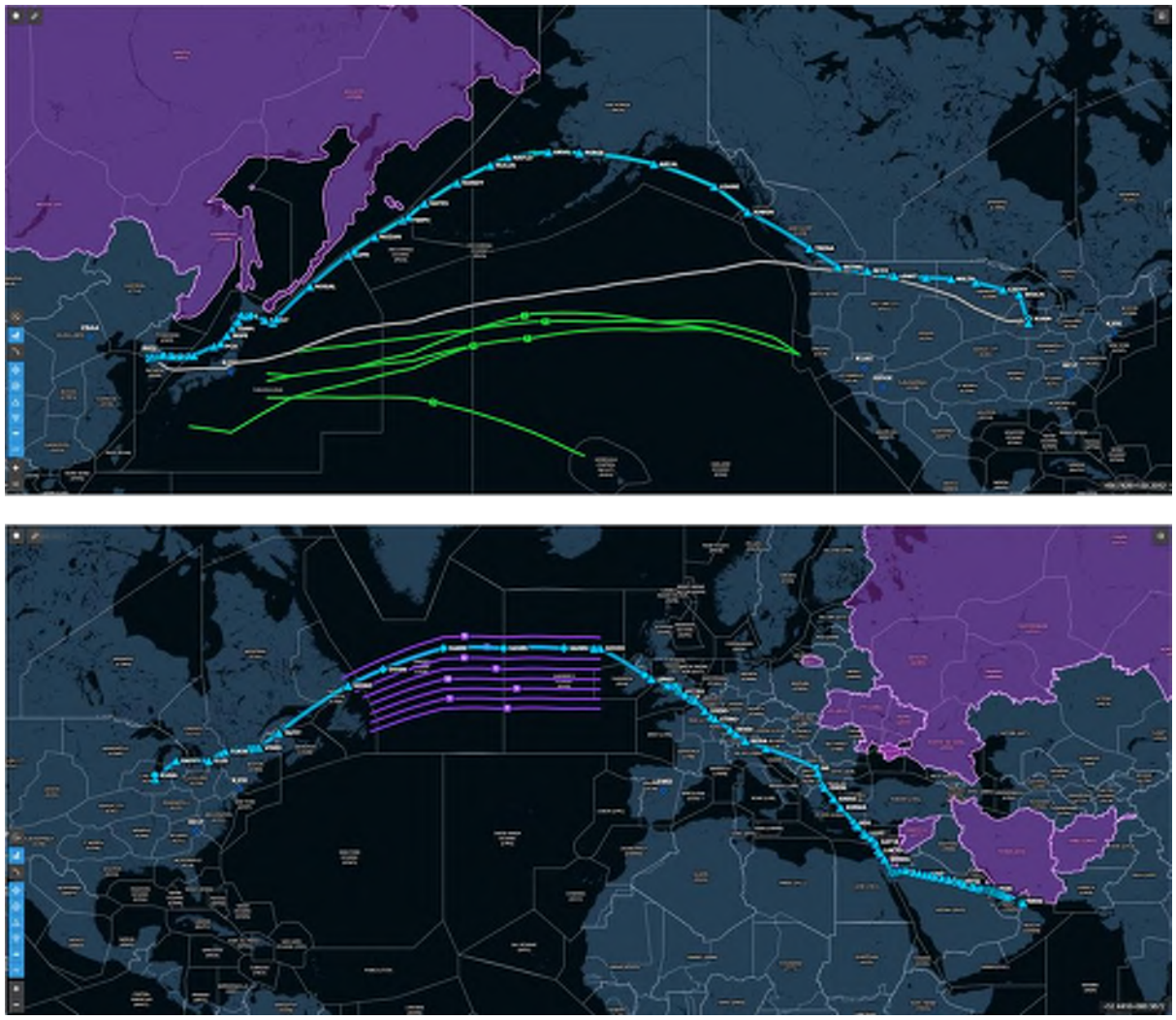


Figure 20. Examples of international routes impacted by overflight restrictions.

This analysis does not account for any specific time-of-day departure influences. We assume equal likelihood of a flight operating in any of the 12 months of a year, at any time of day. The team believes this is reasonable given the relative lack of performance-impacting hot temperatures at UGN.

8.3.2 Route and Time of Departure Inputs to Monte Carlo Analysis

Each destination identified in Table 13 were used to pre-calculate flight planning performance results that had a likelihood of selection specified in the table. As an example, for the route from UGN – SFO, there was a 40% chance that the airway distance from takeoff to touchdown to be analyzed was 882 Nmi, a 40% chance that the route was 899 Nmi, and a 20% chance that the route was 917 Nmi. These likelihoods were applied across each of the 12 months independent from any other historical weather parameters.

8.4 Flight Planning

The role of flight planning calculations in the Monte Carlo analysis focused on exploring the effectiveness of an existing runway length is to determine an accurate aircraft takeoff weight and significantly, the fuel load for each operation. Each calculation considers the month of operation, the payload being carried, the aircraft, the route of flight and the enroute weather conditions specific to operations to and from UGN.

Each flight planning calculation utilizes regulatory-compliant methods particular to the host country and the airline operator to determine the amount of fuel required to plan for contingencies encountered while enroute to the destination or an alternate airport. A specialized set of high-speed aircraft performance data, supplied by aircraft manufacturers and refined by operator experience with the aircraft, is used with flight planning calculation engines to determine a mission-specific takeoff weight which can then be compared against the maximum possible takeoff weight available for a given runway length.

By directly calculating flight planning aircraft performance results using monthly enroute weather conditions along specific routes of flight, the accuracy of the overall Monte Carlo results is increased to ensure that the runway extension results have the highest likelihood of being sufficient for flight operations following a potential extension.

This section describes the flight planning data and methods used to calculate the planned takeoff weights for an aircraft, route, and payload. This section also describes which aspects of the flight planning performance calculation are carried forward into the Monte Carlo analysis and provides some initial insight on the overall flight planning performance results.

8.4.1 Flight Planning Performance Data

Each flight planning performance calculation requires several different sets of high-speed aircraft performance information. This includes climb, cruise, descent, approach, missed approach and holding performance information.

The high-speed performance data used in this analysis is created through a combination of high-speed performance data taken from aircraft manufacturer provided data and tools. These data were imported and applied to routes using PACELab Mission software (PLMS).

8.4.2 Flight Planning Methods Used

The project team utilized the PLMS toolset to calculate flight plan aircraft performance results with the goal of preserving the target passenger load factor first, followed by the cargo load factor second for any takeoff weight up to the structural limited value.

Fuel calculations were calculated by applying NBAA flight planning recommendations and the following conditions:

EN-ROUTE

- TAXI: 10.2 min

- TAKEOFF AND CLIMB TO 1,500 FT AGL, distance not credited
- CLIMB TO OPTIMUM ALTITUDE: Main Speed Schedule defined by OEM
- STEP CRUISE: Main Speed Schedule defined by OEM, No minimum cruise length
- DESCENT TO LANDING: Main Speed Schedule defined by OEM
- HOLDING AT 5,000FT AMSL: Main Speed Scheduled defined by OEM for 5 Min

DIVERSION (starts after approach)

- OVERSHOOT TO 1,500 FT AGL: 80 % T/O-performance
- HOLDING AT 5,000FT AMSL: Diversion Speed Schedule defined by OEM for 5 Min
- CLIMB TO 35,000 FT: Diversion Speed Schedule defined in Aircraft
- STEP CRUISE: Diversion Speed Schedule defined in Aircraft
- DESCENT TO LANDING: Diversion Speed Schedule defined in Aircraft
- HOLDING AT 5,000ft AMSL: Diversion Speed Schedule defined by OEM for 30 Min
- APPROACH AND LANDING FROM 1,500 FT AGL: distance not credited

Reserve is defined as the sum of:

- Diversion fuel

Alternate airports were considered to be located between 50 - 100 nmi away from the destination airport and additional fuel was considered relative to Equal Time Point (ETP) considerations for overwater operations with alternate airport coverage.

All aircraft were assumed to operate at Long Range Cruise (LRC) speed. LRC is unique to each aircraft and represents an operational speed which favors minimizing fuel over flight time. This will have the effect of reducing the overall runway length required for a route of flight compared to faster speeds that may be used by business jet operators. LRC also represents a standard operational speed that can be consistently applied to all aircraft.

No takeoff or landing weight limitations were applied to PLMS flight planning performance analysis beyond the certified limitations. This enables each of the flight planning performance permutations to reflect the required takeoff weight which can then be compared to the takeoff weight available for each runway length/obstacle combination.

8.4.2.1 Insight from Flight Planning Results

All PLMS and ForeFlight Flight Planning performance runs were performed "in advance" of the Monte Carlo pseudo random selection methods, enabling the project team to review the overall characteristics of gross takeoff weight and load factors that were expected to meet the criteria.

All target aircraft were used to generate flight planning results; however, the 560XLS aircraft was unable to operate under most payload carrying conditions on routes beyond 3.5 hours and the Hawker 800XP aircraft was limited to routes less than 5 hours.

8.4.2.2 When Flight Planning Results Did Not Succeed

There is one situation in which PLMS and/or ForeFlight was known to fail to generate a takeoff weight for use with the overall Monte Carlo Analysis.

The situation arises when the aircraft fuel capacity was insufficient to perform the route under the historical wind conditions and airway distance. In this situation, PLMS or ForeFlight would return an error indicating that the combination of inputs could not succeed given the requirement to carry a minimum payload of 100% passenger capacity.

8.4.3 Flight Planning Inputs to Monte Carlo Analysis

PLMS studies were utilized to generate thousands of different flight plan aircraft performance results that included independent inputs for the following combinations:

- Every month (x12)
- Each aircraft (x4)
- Each route (departing UGN to the destination)
- Each passenger weight (x3)
- Each baggage weight (x2)
- Each airway distance (x2 or x3)
- The 5 primary historical wind likelihoods (x5)

Each flight planning performance calculation was stored with data indexes created to enable rapid referencing of the inputs used - whether the flight plan succeeded for the inputs, the load factors achieved, and the takeoff weight required by the analysis.

8.4.4 Distribution of Flight Planning Performance for Monte Carlo Analysis

An individual flight planning calculation was performed for each aircraft, route, weather condition, airway distance and range of payload targets. This resulted in flight planning performance results that related the target takeoff weight required for the route of flight to the intended month of operation from UGN.

There are two important limitations to identify related to the distribution of takeoff weights used in the Monte Carlo Analysis.

The first limitation to note is that no flight planning performance was calculated for routes beyond the destinations identified in Section 8.3. This means that in cases where a midsize business jet operator may consider destinations from UGN beyond LAX or SEA, additional calculations would be required to assess required takeoff weights. This is particularly important as aircraft operating over increasingly longer ranges eventually

will need to reduce payload to carry enough fuel for a given route. This fuel capacity limitation can lead to failure cases for aircraft unable to achieve the desired Load Factor.

The second limitation to note is that the calculated distribution of flight planning performance results is based only on the destinations listed in Table 13.

This is not expected to have a significant impact on the overall Monte Carlo results because the target takeoff weight determined by the flight planning performance is used as a direct input into the runway length calculation. No interpolation of results from the flight planning performance is required to enable the next phase of the Monte Carlo runway length analysis.

8.5 Takeoff Performance

Calculation of takeoff performance requirements for an airport like UGN requires a careful understanding of the types of aircraft, and operating rules, which will likely depart from runway 5-23. These include Part 23 certificated aircraft, operated under Part 91 or 135, which do not have a requirement to consider one engine inoperative obstacle accountability. It also includes Part 25 certificated aircraft, operated under Part 135, which must take both declared distances and OEI obstacle accountability into consideration. In Table 14, different combinations of all engines operating (AEO), and one engine inoperative (OEI) field length and obstacle accountability are listed.

Table 14 Table of different aircraft certification and operating regulations considered for takeoff performance calculations including the level of one engine inoperative obstacle clearance analysis that must be performed.

Phase of Flight	Distinction	FAR Part 91	FAR Part 91-K DAAP	FAR Part 135 EOD	FAR Part 135
Takeoff Performance	Part 23	AEO Takeoff to 50ft No Obstacle Accountability		AEO Takeoff to 50ft OEI Obstacle Accountability recommended if available	
	Part 25	AEO and OEI Takeoff to 35/50ft, OEI Obstacle Accountability Recommended		AEO and OEI Takeoff to 35/50ft, OEI Obstacle Accountability Required	

The advanced method for runway length determination focuses primarily on Part 25 certificated aircraft. Most operators of Part 25 aircraft, which choose to apply FAR Part 91-K for the flight, will use some level of OEI obstacle accountability.

8.5.1 Takeoff Performance Methods Used

Parts 25 and 135 require consideration of the following factors when determining the limiting takeoff weight for a runway length, obstacle definition and other environmental inputs:

- One-Engine Inoperative (OEI) Accelerate Go (25.113)
- One-Engine Inoperative Accelerate Stop (25.109)
- All-Engines Operating (AEO) Accelerate Go (25.113)

- All-Engines Operating Accelerate Stop (25.109)
- Brake Energy Limitations (25.735)
- Tire Speed Limitations (25.733)
- One Engine Inoperative Climb Limitations (25.121)
- One Engine Inoperative Obstacle Clearance Limitations (135.379)
- Temperature and Pressure Altitude Limitations (135.379)
- Gust, Crosswind and Other Runway Surface Limitations (Identified by the OEM during certification)

These limiting factors are determined using the FAA Approved Airplane Flight Manual (AFM) for each airplane type. Operationally, each OEM provides aircraft performance calculation software that optimizes variations with airplane configuration, takeoff safety speeds, climb speeds and other parameters to achieve the greatest possible takeoff weight in compliance with all regulatory limitations.

The primary mechanism for optimizing a takeoff performance calculation is to ensure that the minimum amount of runway, or declared distances, is utilized by the aircraft under normal conditions (all engines operating) and during an emergency loss of one engine at the most safety critical point on the runway. In Figure 21, the three primary calculations are depicted showing a normal takeoff (Accelerate Go (AEO), a normal or abnormal aborted takeoff (Accelerate Stop (AEO or OEI)) and an abnormal takeoff (Accelerate Go (OEI)).

Under each of these scenarios the aircraft is required to begin the takeoff roll with all engines operating. For the OEI scenarios, an engine failure occurs only at the most critical point of the takeoff. At that point, the OEI requirements must be met whether the takeoff is aborted or continued.

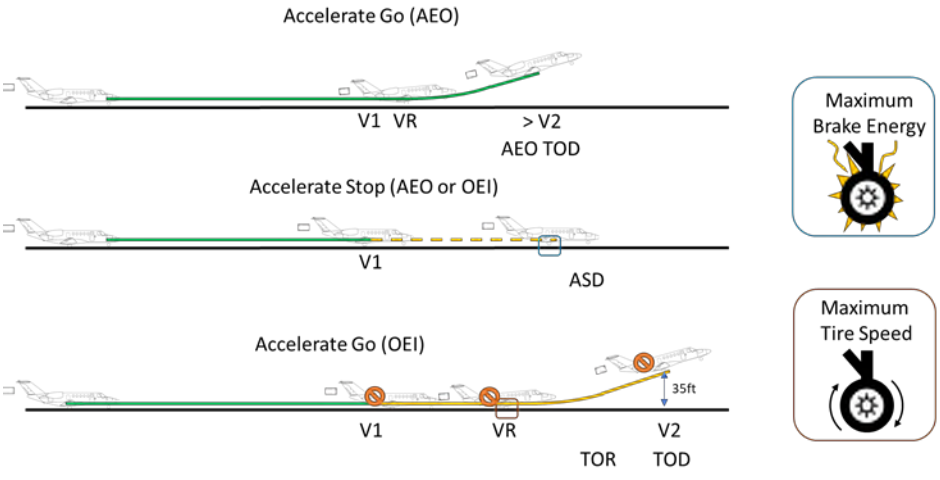


Figure 21 Primary Takeoff Performance Calculation Considerations for FAR 25/135 Operations

In each situation depicted, the performance calculation methods attempt to optimize the aircraft within the distances available so that the aircraft:

1. Reaches 35 ft. above the end of the runway (15 ft. under wet and or contaminated conditions)
2. Comes to a complete stop prior to reaching the end of the ASDA

Scenario 1. must be accomplished within the reported Takeoff Distance Available (TODA) and scenario 2 must be accomplished within the reported accelerate stop distance available (ASDA) both of which are part of the declared distances for a runway direction. The last of the three takeoff declared distances, Takeoff Run Available (TORA), is typically the published runway length. Most commonly, but not necessarily, these three distances are equal.

The performance calculation will optimize the use of the available distances attain the greatest weight possible.

The ability of the performance calculation to optimize takeoff distances also directly relates to the obstacles clearance requirements that the aircraft must also consider during the OEI takeoff maneuver.

Takeoff obstacle clearance requirements stipulate that the aircraft to continue the climb from the 35 ft. point (15 ft. under wet or contaminated conditions) and clear all remaining obstacles identified in the One Engine Inoperative OAA (described in Section 8.5.2) by both 35 ft. and an increasing margin based on distance to each obstacle. The margin is 0.8% of distance for 2-engine aircraft (25.115).

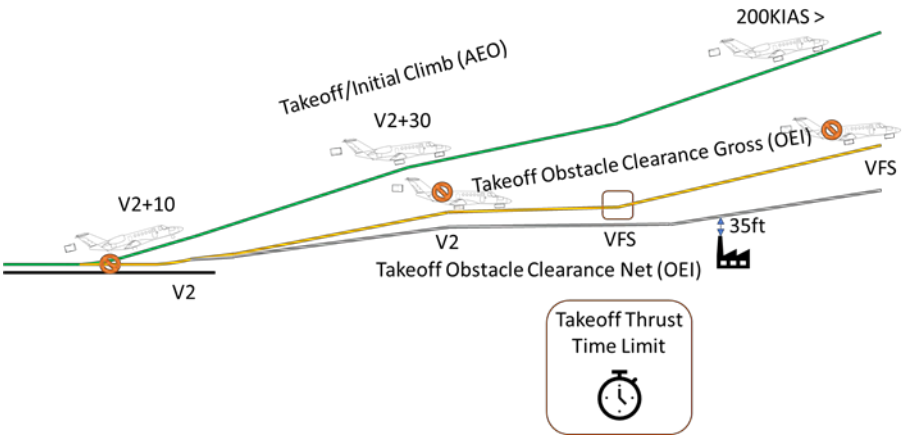


Figure 22 Overall Depiction of All Engines Operating and One Engine Inoperative Obstacle Clearance Considerations for FAR 25/135

The extent to which a takeoff weight is limited by obstacle clearance depends on three things:

1. Position of obstacles relative to the start of the takeoff
2. Length and slope of the runway

3. Climb capability

Position of obstacles may be an obvious consideration when determining an obstacle limited takeoff weight, but even a small obstacle close to the end of a runway may be enough to change the overall takeoff performance optimization, consequently rendering portions of the runway effectively unusable.

The second element related to the length and slope of the runway is also important, especially on runways with a downhill (negative) slope. These runways may appear to have many objects that will be required for obstacle clearance, but takeoff performance computations are aware of the starting point of the aircraft as it begins the takeoff roll. Therefore, optimized takeoff performance may enable an aircraft to become airborne prior to the end of the runway, essentially increasing distance to clear any obstacles.

The final element, climb capability, is directly tied to the weather conditions and the regulatory requirement of an aircraft to maintain a generic climb capability following the loss of thrust in one engine. This is influenced by the pressure altitude, outside air temperature, flap selection, and initial climb speed. While climb capability can be an issue at high-temperature and/or high-altitude airports, climb capability at UGN is not considered to be a significant limitation.

8.5.2 Obstacle Accountability Areas

Part 135 and 125 aircraft operators are required to consider one engine inoperative obstacle clearance for any objects, or terrain, detected inside an Obstacle Accountability Area (OAA).

Aircraft operators in the US utilize an OAA based method specified within FAA Advisory Circular 120-91A. This AC defines two methods based on whether an operator chooses either to use navigational methods to narrow the OAA, or to rely on a more generic Area Analysis method.

The OAA defined in the AC expands as a function of distance from the end of the runway. The initial width begins at 300 ft. on either side of the centerline (approximately 90m). This width is fixed until 4,800 ft. from the end of the runway. At that point, each outer boundary of the OAA grows at a rate of 16:1 until the maximum OEA half width of 2,000 ft. is reached (3000 ft. for turning departures).

While US operators can choose to use AC 120-91A methods, some operators may use a more conservative OAA are a result of an operator's policy decision or due to regulatory requirements (non-US operators).

AC 120-91A allows US operators to use a narrower initial OAA half-width of 200 ft. "within the airport boundaries". However, this method of analysis was not modeled in the Monte Carlo analysis.

For UGN, the project team focused its aircraft performance calculations only on AC 120-91A OAA methods.

8.5.3 Takeoff Performance Inputs to Monte Carlo

The primary goal of incorporating takeoff performance into the Monte Carlo analysis is to be able to determine whether the airport has sufficient runway length to achieve current and future payload range capabilities for target aircraft. Since all takeoff performance computations are calculated for a single runway direction, and obstacle profile, to determine a limiting takeoff weight, then is of paramount importance to calculate all limiting takeoff weights for each runway direction and obstacle combination that could be reasonably considered.

Pre-calculated takeoff performance results must therefore be divided into those with fixed inputs, either as inputs, outputs or both, and those which will be fed into pseudo random distributions based on historical weather inputs identified in Section 7.1.

8.5.3.1 Fixed Values for Takeoff Performance Calculations

All takeoff performance calculations were permitted to achieve optimized results using the following methods:

- Optimized decision speed (determination of V1 and application of declared distance considerations)
- Optimized takeoff safety speed (varying V2 for minimum climb or obstacle clearance)

All takeoff performance calculations considered the following values as established inputs that would not vary.

- One obstacle definition per runway direction and length
- 5-minute or 10-minute engine inoperative takeoff thrust time limitations
- Thrust reversers were not considered for any performance calculations
- No headwind, tailwind or crosswind values were considered
- Only dry or wet runway surface conditions were considered
- Anti-Ice bleeds were set to off or Engine Only
- No inoperative, MEL or CDL items were considered
- No thrust degradation was applied beyond the values already considered for certification of takeoff performance
    - No fixed derated thrust application
    - No assumed temperature thrust reduction

Flap and slat configurations were each run independently using the parameters identified above to determine the greatest possible weights for each condition to carry forward into the Monte Carlo Analysis. In other words, if a given aircraft type has three takeoff configurations, the takeoff performance results would be run for all three

settings; the configuration resulting in the greatest weight from the three would be selected for the Monte Carlo analysis, and the other results would be set aside. This means that for any combination of inputs, including temperature, runway, obstacle, a different flap setting may be considered.

All optimization techniques, flap settings, and other fixed inputs align with known operational practices of the business jet operators and aircraft identified in this analysis.

8.5.3.2 Distributions for Takeoff Performance Calculations in the Monte Carlo Analysis

An individual takeoff performance calculation was performed for each runway, obstacle definition, weather condition and flap/slat setting. These takeoff performance results relate the maximum takeoff weight permitted by the runway and environmental conditions to a runway length.

The current limitation of this analysis is that no takeoff performance was calculated for a runway length of more than 7,000 ft. This means that in cases where a takeoff weight required a length greater than 7,000 ft. to complete a mission with no loss of passenger load factor, the Monte Carlo sample run will only indicate that insufficient weight was generated, and it will not attempt to extrapolate runway length results beyond 7,000 ft.

8.6 Landing Performance

Contemporary landing performance now consists of two complementary requirements, a traditional time-of-dispatch determination, and a newer time-of-arrival determination.

8.6.1 Certificated Landing

As with takeoff, dispatch landing performance is driven by 14CFR Parts 25 & 135 as part of the required flight planning process.

- Required Landing Distance (25.125)
- All-Engines Operating Climb Limitations (25.119)
- Engine Inoperative Climb Limitations (25.121)
- Temperature and Pressure Altitude Limitations (135.385)
- Gust, Crosswind and Other Runway Surface Limitations (Identified by the OEM during certification)

Notably, certificated landing data does not account for either temperature or runway slope, however the flight-test verified distances are conservatively factored to account for those conditions and other factors that may occur in typical operations. Unlike takeoff, there is no capability to determine landing performance on contaminated runways, only dry or wet conditions are considered.

These limiting factors are determined using the FAA Approved Airplane Flight Manual (AFM) for each airplane type. Operationally, each OEM provides aircraft performance calculation software that optimizes variations with airplane configuration, approach, and landing speeds, missed approach and go-around climb speeds and other

parameters to achieve the greatest possible landing weight in compliance with all regulatory limitations.

8.6.2 Operational Landing

Operational landing assessments are intended to be done by flight crews closer to the actual time of arrival with the understanding that conditions may have changed since the time of dispatch. These determinations are driven by a 2005 runway excursion that resulted in FAA Safety Alert for Operators (SAFO) 06012, now superseded by SAFO 19001. While these assessments do not currently fall within the Code of Federal Regulations, FAA Certificate Management Offices do expect operators to adhere to the SAFO recommendations.

Operational landing does consider more specific information regarding ambient conditions. Runway braking action due to contaminants, and the use of auto-braking systems, are considered for operational landing. Temperature and slope effects are also considered, all differing from the current regulatory requirements.

The intent of operational landing assessments is to inform flight crew decision-making in line operations. However, some operators also use this information as part of dispatch process in addition to the normal dispatch flight planning requirement to provide some accountability for runway conditions. This can result in over-conservative results, including weight restrictions and flight cancellation.

As this information is not regulatory, it does not reside in the FAA Approved AFM. This data is provided to operators by the OEM in their Flight Crew Operating Manual (FCOM) or various software packages.

Landing performance, and runway length required to accommodate landing, was not explicitly considered as a part of the Monte Carlo Runway Effectiveness analysis.

8.6.3 Landing Performance Analysis

Landing performance, and runway length required to accommodate landing, was not explicitly considered as a part of the Monte Carlo Runway Effectiveness analysis. Instead, the team analyzed the Certified and Operational landing performance capabilities for all the aircraft considered in the Monte Carlo Analysis on an individual basis.

Landing performance was determined based on the anticipated FAR operating regulation with significant differences between FAR Part 91, 91-K and 135. These differences are highlighted below in Table 15.

Table 15 Comparison of FAA Operating Regulations vs Landing Distance Requirements

Phase of Flight	Distinction	FAR Part 91	FAR Part 91-K DAAP	FAR Part 135 EOD	FAR Part 135
Landing Performance	Pre-Takeoff Dry	Calculated distance <= 100% of Available	Calculate distance <= 80% of Available		Calculate distance <= 60% of Available
	Pre-Takeoff Wet		Calculated distance * 1.15 <= 80% of Available		Calculated distance * 1.15 <= 60% of Available
	In-Flight	Calculated distance for conditions at top of descent + 15% <= Runway Length			

Each aircraft was evaluated for the payload that would be available for an aircraft to arrive at UGN with NBAA fuel reserves + enough fuel to travel to an alternate and execute a full stop landing.

The landing performance calculations evaluated both wet and dry conditions. No consideration for contaminated runway events was applied based on feedback from the airport and planning teams indicating snow and contaminants are quickly removed from the runways by the Airport and standing water is not an issue at the airport. The analysis of both wet and dry landing indicated that there was no performance restrictions based on the current runway length of 6,000 feet for the types of aircraft currently operating and those expected to operate at UGN in the future. Should the weather patterns significantly change or the ability of the airport to clear snow and contaminants be diminished, landing distance analysis should be revisited to determine the impact of runway contamination on landing performance.

9 Determining Ideal Runway Length for UGN

This section describes the methods used to determine the effectiveness of the current runway length resulting from a Markov Chain Monte Carlo methodology.

9.1 Monte Carlo Modeling Methodology

The project team used a simplified Markov Chain Monte Carlo methodology utilizing pseudo-random selections of predetermined variable distributions with two decision steps relating the flight planning takeoff weight, required to operate the aircraft on the desired route, to the takeoff weight resulting from the aircraft choosing to use a runway and obstacle definition.

Figure 23 illustrates the Markov Chain steps taken during each sample iteration enroute to achieving a Monte Carlo sampled distribution expressing the cumulative likelihood of an aircraft operating on a specific route for varying directions of the target runway.

A single aircraft and route served as the starting point for an independent Monte Carlo simulation resulting in a sample set that was specific to both. Thus, an independent Monte Carlo simulation was performed for each of the six aircraft across each of the target routes.

The first group of pseudo-random selection occurred to inform the Flight Planning, or "High Speed Performance" blue box described in Section 8.4. The selected inputs from

the payload, enroute weather and flight planning considerations were used to identify the pre-calculated flight planning performance set for further evaluation.

In the event that the randomly selected flight planning performance run was unable to converge, meaning that it was unsuccessful for the aircraft to operate the route regardless of runway availability at UGN, then the result was considered to be a failure, and the sample run was documented as such with information about where the failure occurred and for what reason. The sample run then restarted with another series of randomly selected input variables from the flight planning performance process generating a new gross takeoff weight necessary to operate with the target payload.

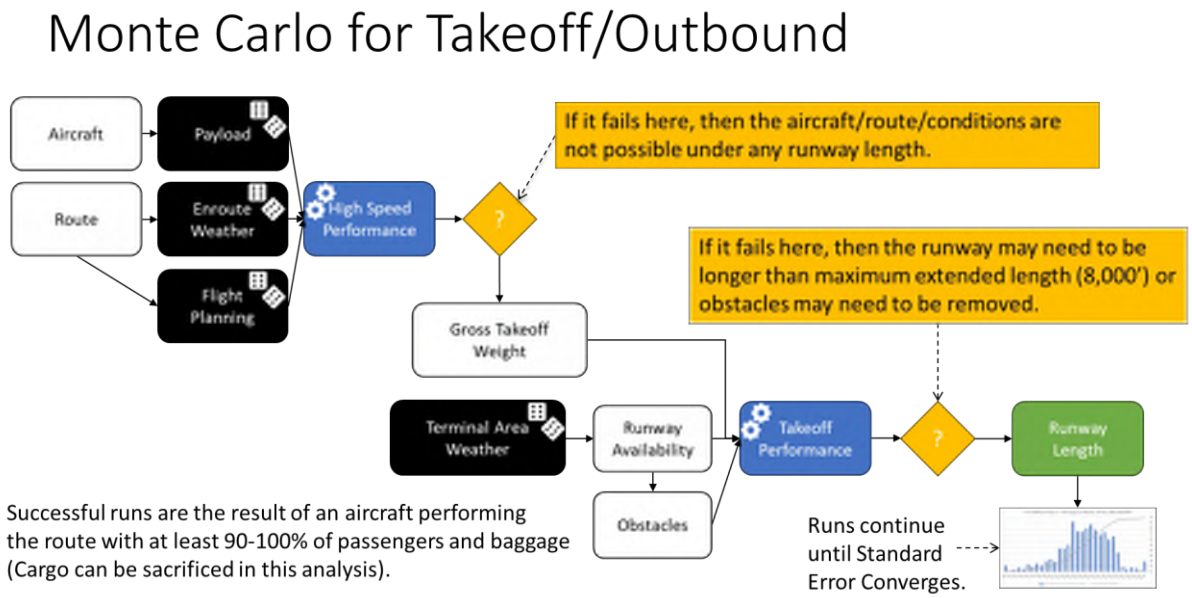


Figure 23 Flowchart Depicting Simplified Markov Chain Based Monte Carlo Analysis Process (not specific to UGN)

The month and aircraft considered form the flight planning calculation were carried forward to the takeoff performance calculation process, ensuring that the pseudo-random selection of terminal weather inputs matched the time period used for the flight planning calculation. At this juncture, a pseudo-random selection of weather-related inputs was generated revealing the most likely direction of runway in use. The inputs were then fed into the takeoff performance generation tool.

In the situation where the flight planning takeoff weight matched a takeoff weight supported by an existing, or extended, runway length (and obstacle set) then this runway length value was carried forward as a successful sample run and the process repeated itself.

In the scenario where the takeoff weight identified by the flight planning performance calculation was less than a value available for the existing runway length on the runway, then the Monte Carlo sample run was assumed to be successful at the existing runway length.

If the target takeoff weight identified by the flight planning process was greater than the takeoff weight calculated using the randomly selected terminal weather inputs, then the sample run is considered to have failed due to not having enough runway length available. In this specific analysis, because no takeoff weights were generated for a runway extension that would result in runway 5-23 being longer than 7,000 ft., then it was known that a longer runway was still required, and the sample run was recorded as needing more than 7,000 ft. without providing a specific answer on the exact amount.

The Monte Carlo process is repeated to build up a statistically significant sample set for each aircraft and route. The process produced samples until either 2,000 runs were calculated (including both successful and failed runs from the payload comparison steps), or until such time that the standard error of the 95% cumulative likelihood converged.

The resulting sample set for each aircraft and a route was then expressed in terms of the cumulative likelihood of operations, or cumulative distribution function, for consideration by the project team.

9.2 Cumulative Likelihood and Operations

The tendency for a business jet operator to target on-time operations can be expressed in terms of the cumulative likelihood calculated from the Monte Carlo process described in the preceding section.

The concept of using cumulative likelihood approximates the operational decision making and payload forecasting techniques demonstrated by business jets operating on domestic and international operations to and from US airports over the past 20 years.

Runway lengths that support operations near the 100% cumulative likelihood values are likely to operate every day, at any time, without the need to alter the payload or significantly alter the time of flight. To put it another way, no delays would be expected and no denied passenger boardings would be anticipated because of challenges to takeoff performance.

Airports serving as hubs to major carriers frequently have one or more runways that achieve this 100% cumulative likelihood for all aircraft and routes. At the other extreme, airports in challenging environments may experience cumulative likelihoods for a runway that may be near 50% for any time throughout a year. In these situations, operators may still choose to fly the route, with the aircraft, from the runway in question. To mitigate the operational risks, an operator may limit the number of operations or limit the time of operation to one that results in a different cumulative likelihood (specific to the hour of operation) rather than one based on an annual analysis.

This information has been synthesized by the Project Team and can be categorized into the following ranges of likelihood and the kinds of operations that can be expected for a year-round operation from UGN, with no pre-determined time of departure:

95% - 100% Likelihood:

- Annual scheduled service
- No payload restrictions or
- No delays waiting for environmental conditions to improve

90% - 95% Likelihood:

- Annual scheduled service
- No payload restrictions
- Either an occasional delay or reduction in cargo

85% - 90% Likelihood:

- Annual scheduled service
- **Some payload restrictions**
- **Regular business jet operations**
- **Targeted times of operation or potential seasonal service**

50% - 85% Likelihood:

- Seasonal or charter service only
- Possibility of payload restrictions

<50% Likelihood:

- The route will not likely be attempted except under extraordinary circumstances

As there are currently no plans to support scheduled airline service within this planning period, the team has considered 50% and 100% passenger load factors to be representative of typical business jet operations and flight planning. More typically, for analyses involving scheduled airline service a higher load factor is considered as the economic model for operating these flights is much different than that of a business jet operation. This is an important distinction because a runway length that supports a 90 – 95% cumulative likelihood result will still result in the eventual outcome that a flight operation will not have enough runway length to operate without some takeoff performance related impact.

Though starting with a lower load factor, the impacts experienced by a business jet operator from the existing runway will likely not result in unfavorable operational decisions. It may require the operator to consider using a different equipment type or to plan on an additional fuel stop that makes the airport seem less desirable when other options in the same area may be present that do not possess the same restrictions. The ability of a runway length to achieve higher and higher cumulative likelihood outcomes

will ensure that operators consider the airport as their first choice when the customer, owner or clients make their decision on where to fly with their business jet or turboprop.

9.3 Aircraft Specific Results on Selected Routes

The Monte Carlo analysis revealed the cumulative likelihood of scheduled operations for each aircraft, on each route, expressed against ultimate length of Runway 5-23 extended to the southwest to a length greater than its existing 6,000 feet.

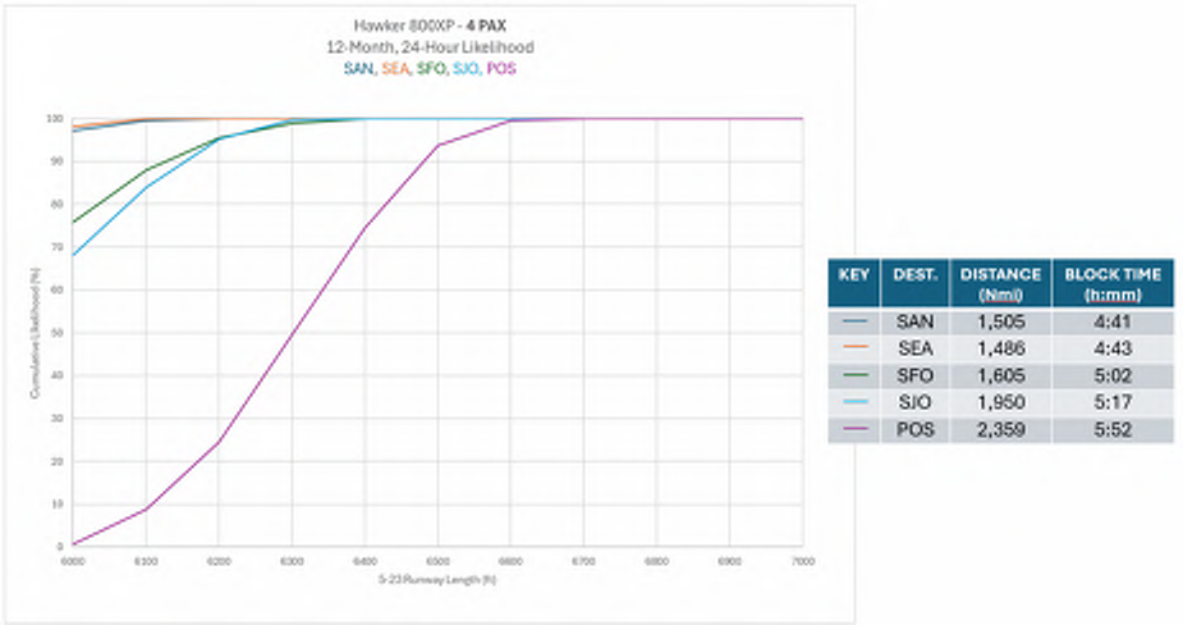
The following figures show a selection of aircraft cumulative likelihoods across runway length extensions for the Hawker 800XP, Global 6000 and G650ER to varying routes demonstrating the outputs of the Monte Carlo Analysis. Additional tables can be made available upon request via the airport to the project team. Additional aircraft were analyzed as discussed in Sections 8.1 and 8.2.

In general, aircraft results not presented in this section did not see a significant benefit to runway extension beyond the existing 6,000 feet. This is due to the central location of UGN within the US and high performance capabilities (short runway requirements) to achieve the reduced range. This central location allows most medium to large cabin jets (Citation X, Latitude and Challenger 350) to easily reach both coasts of the continental US with relatively low takeoff weights but puts more distant destinations such as Hawaii or Western Europe out of reach regardless of runway length due to range limitations. As such, a runway extension does provide additional takeoff weight to other high performing aircraft not listed here, but the additional weight does not necessarily provide improved access to any likely destinations for the aircraft operator.

The figures depicted below present the ultimate runway length of Runway 5-23 extended from 6,000 feet to a maximum analyzed length of 7,000 feet to the south (see Section 6.2 for more details). The lines in each of the figures represent the cumulative likelihood for the aircraft and route at the specified Load Factor and reference the vertical axis on the left-hand side of the graphic.

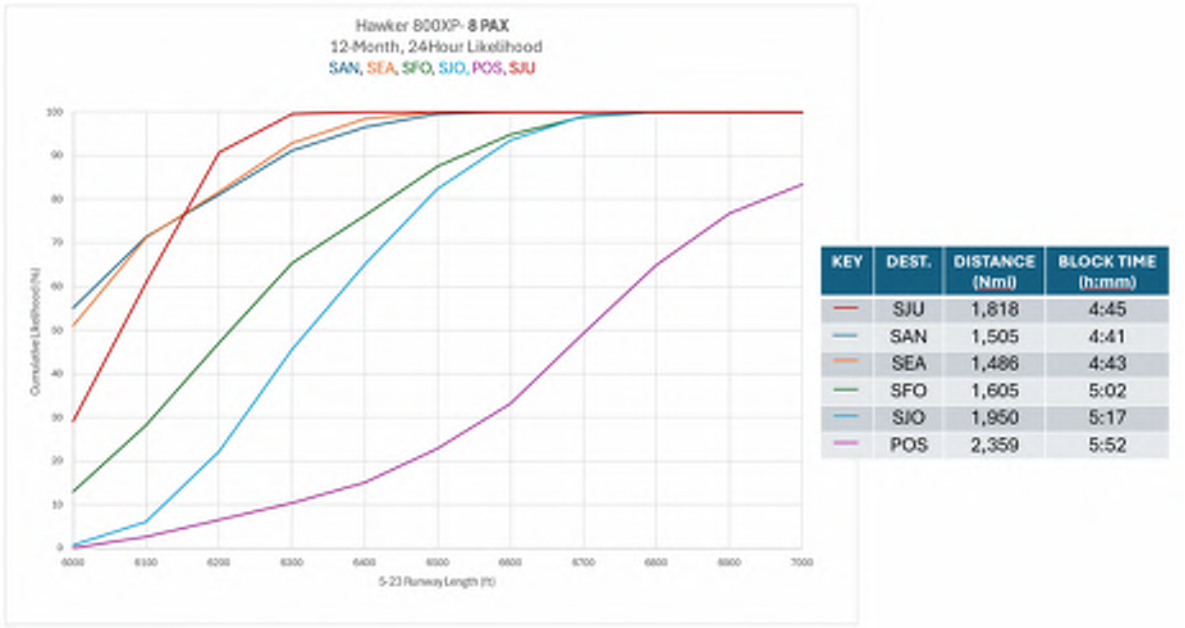
The results from these figures reveal that the distribution of runway lengths matches the overall expectations from fixed and variable inputs described in the previous sections.

9.3.1 Hawker 800XP Results



KEY	DEST.	DISTANCE (Nmi)	BLOCK TIME (h:mm)
	SAN	1,505	4:41
	SEA	1,486	4:43
	SFO	1,605	5:02
	SJO	1,950	5:17
	POS	2,359	5:52

Figure 24.UGN – SAN/SEA/SFO/SJO/POS, Hawker 800XP, 50% LF.



KEY	DEST.	DISTANCE (Nmi)	BLOCK TIME (h:mm)
	SJU	1,818	4:45
	SAN	1,505	4:41
	SEA	1,486	4:43
	SFO	1,605	5:02
	SJO	1,950	5:17
	POS	2,359	5:52

Figure 25. UGN – SAN/SEA/SFO/SJO/POS/SJU, Hawker 800XP, 100% LF

Figure 24 and Figure 25 show the likelihood of a Hawker 800XP successfully carrying 50 percent (4 PAX) and 100 percent (8 PAX) loads, respectively, to SAN, SEA, SFO, SJO, POS, and SJU. Figure 24 indicates that at 50% load factor, the 800XP is capable off of the existing 6,000 feet, achieving greater than 95% likelihood of success to both SAN and SEA. However, the aircraft is shown to require approximately 200 feet of additional runway to achieve a 90%+ likelihood of success to markets like SFO and SJO. At the furthest extents of its range (POS) the results show that additional runway up to 6,600

feet provides performance benefit to the aircraft, making the route possible with 50% load factor.

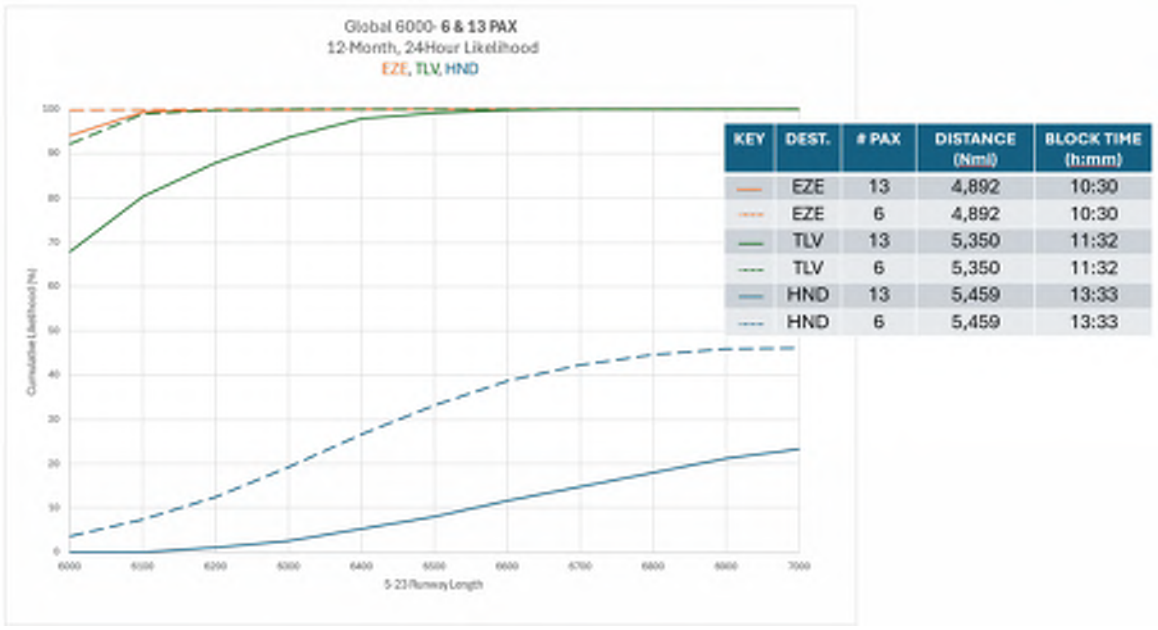
At 100% load factor, the impact of additional runway is substantial for the 800XP. To achieve a 90% likelihood of success for all analyzed destinations a runway length of at least 6,200 feet is required. To reach that threshold for the likely destinations of SFO and SJO a distance of at least 6,500 feet is required. The graph indicates for the fully loaded Hawker 800XP that every foot of additional runway is beneficial for the one-engine inoperative aircraft performance. However, for destinations near the extents of the 800XP's range, runway extensions up to 7,000 feet are not likely to provide enough benefit to make these markets consistently accessible.

9.3.2 Aircraft with Similar Runway Length Requirements to the 800XP

While the number of Hawker 800XP in the NAS continues to be significant, there are several aircraft that share similar runway length and payload range characteristics to the 800XP. These include the following aircraft:

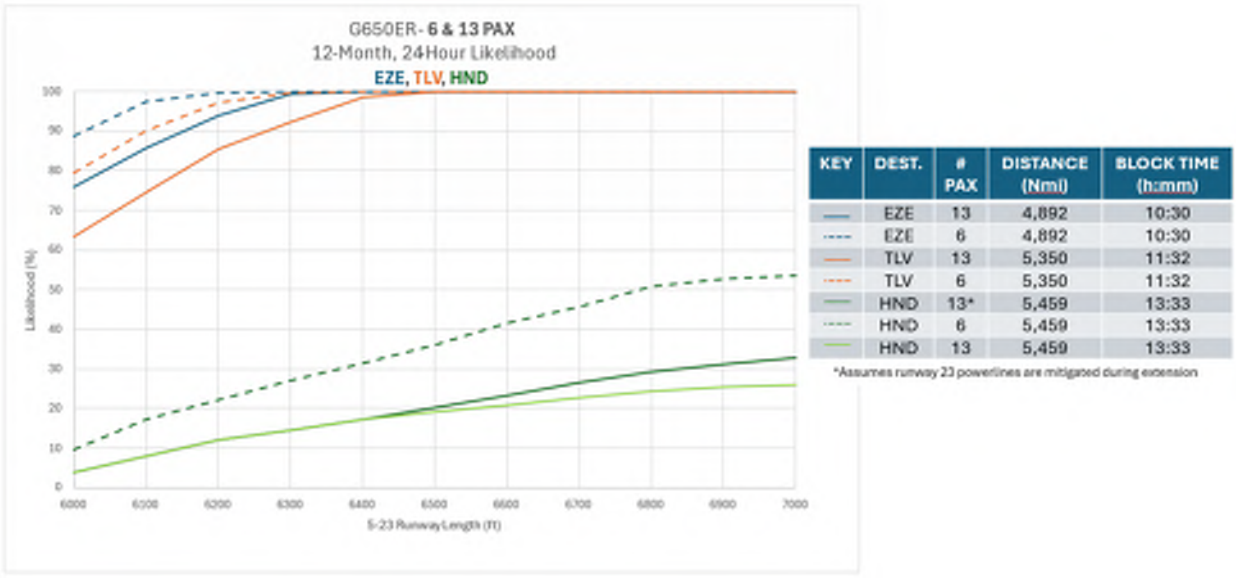
- All Hawker BusinessJet Derivatives:
  - HS-125 (All Derivatives)
  - 400XP
  - 900XP
  - 750XP
- All Cessna Citation Models:
  - V
  - VII
  - 680
- Learjet 45 and 60
- IAI Westwind

9.3.3 Global 6000 / G650ER Results



KEY	DEST.	# PAX	DISTANCE (Nmi)	BLOCK TIME (h:mm)
	EZE	13	4,892	10:30
	EZE	6	4,892	10:30
	TLV	13	5,350	11:32
	TLV	6	5,350	11:32
	HND	13	5,459	13:33
	HND	6	5,459	13:33

Figure 26. UGN – EZE/TLV/HND, Global 6000



KEY	DEST.	# PAX	DISTANCE (Nmi)	BLOCK TIME (h:mm)
	EZE	13	4,892	10:30
	EZE	6	4,892	10:30
	TLV	13	5,350	11:32
	TLV	6	5,350	11:32
	HND	13*	5,459	13:33
	HND	6	5,459	13:33
	HND	13	5,459	13:33

*Assumes runway 23 powerlines are mitigated during extension

Figure 27. UGN – EZE/TLV/HND, G650ER

Figure 26 and Figure 27, show similar likelihoods for Global 6000 and G650ER aircraft destined for EZE, TLV, and HND at 50% (truncated) and 100% loads. These results indicate that at 50% LF the Global 6000 has sufficient runway to serve both EZE and TLV while the G650ER needs an additional 100 feet of runway to reliably serve TLV with a more than 90% likelihood of success. At 100% load factor, the G6000 needs approximately 250 additional feet of runway to achieve 90% success to TLV and the G650ER needs the same amount for TLV and 150 additional feet to reach EZE. HND is

also analyzed as a possible destination for both aircraft. While the great circle distance is not substantially further than TLV, the prevailing enroute winds make this route much more challenging. As such, the results for both the G6000 and the G650ER reflect a low success rate (<55% likelihood), even at a 7,000-foot runway length for a 50% load factor. Based on the flattening of the likelihood curves toward the right-hand side of the chart, it is unlikely the route would be regularly successful regardless of runway length due to range limitations of the aircraft. We see in the G650ER analysis that the powerlines discussed in Section 6.1.6 do have an impact on OEI performance but only beyond runway lengths of 6,400 feet and only in cases where the aircraft is attempting to achieve maximum range.

9.4 Aircraft with Similar Runway Length Requirements to the G6000/G650ER

The G6000 and G650ER both represent extremely capable, large cabin, which usually require little runway length to travel significant distances. This is true of most modern large cabin business jets, most of which are either similar to, or slightly less capable. These include the following aircraft:

- All Gulfstream Models
  - G500
  - G550
  - GIV/V/VI
  - G700
  - G750
- All Dassault Models
  - Falcon 900
  - Falcon 2000
  - Falcon 7X and 8X
- Additional Bombardier Models
  - Global 5000
  - Global 7500

9.5 Determining Ideal Runway Length

Once each of the aircraft/route level analysis had been generated by the Monte Carlo processes the project team focused on the 90% likelihood of success value to determine the ideal runway length for the new runway. As discussed in Section 9.2, this value represents a likelihood of success where business jet operators would plan to be able to complete their anticipated mission without additional tech stops, payload restrictions or equipment substitutions.

Table 16. Runway length required for 90% likelihood of success, Hawker 800XP.

Runway Length Required for 90% Likelihood of Success

OEI Obstacle Accountability and Full MCMC Variations

50% Load Factor			
Aircraft	Destination	Block Time (hr)	90% Distance (ft)
800XP	SAN	4.68	6000
800XP	SEA	4.72	6000
800XP	SJU	4.75	6000
800XP	SFO	5.03	6130
800XP	SJO	5.28	6150
800XP	POS	5.87	6480

100% Load Factor			
Aircraft	Destination	Block Time (hr)	90% Distance (ft)
800XP	SAN	4.68	6290
800XP	SEA	4.72	6270
800XP	SJU	4.75	6200
800XP	SFO	5.03	6540
800XP	SJO	5.28	6570
800XP	POS	5.87	>7000

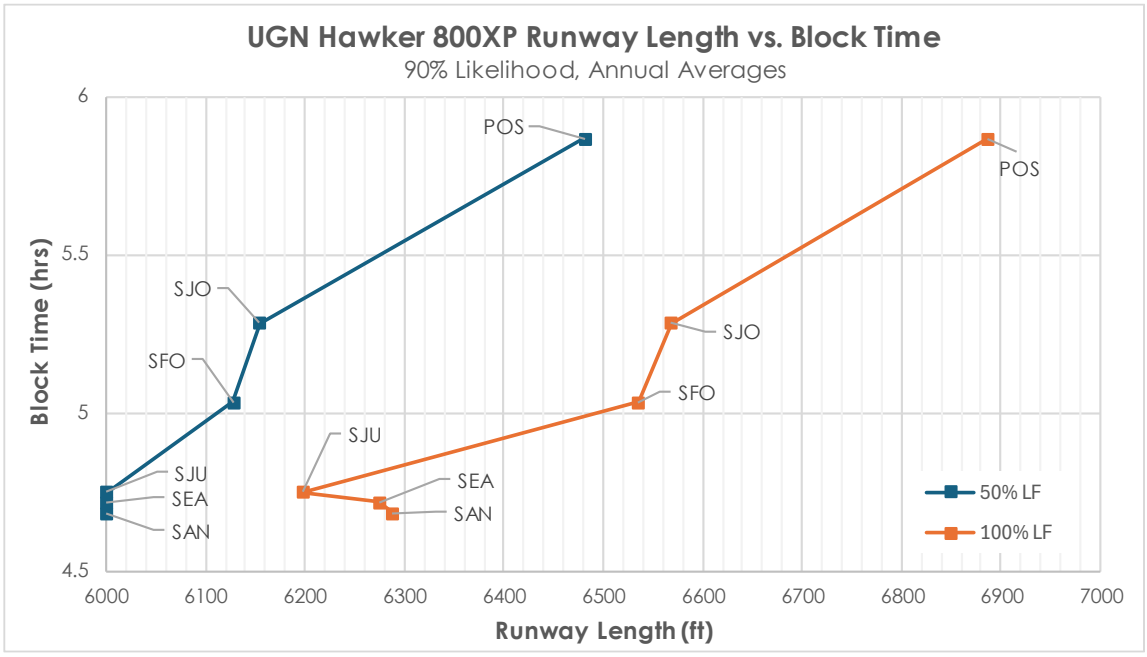


Figure 28. Runway 5/23 Length to reach desired Mid-sized Business Jet Destinations, 90% Cumulative Likelihood

For the Hawker 800XP (and similar aircraft) the results of the Monte Carlo performance assessment indicate that a runway extension is needed to support non-stop flights to destinations in excess of 5 hours block time in the case where the aircraft is at least 50% loaded and over 4.5 hours block time when the aircraft is fully loaded. An extension of 200 feet would open destinations within 5.5 hours block time and would further enable higher load factors for the medium cabin jets to destinations within 5 hours block time, bringing significant additional access to West Coast destinations. An extension to approximately 6,550 feet would enable the medium cabin jets to access all West Coast

destinations with a 100% load factor and enable access to all destinations within the Hawker 800XP's available range with a 50% load factor.

The Global 6000 and G650ER, which represent typical large cabin business jets (two or three engines) and active jets using the airfield today, require no runway extension to

Table 17. Monte Carlo runway extension results for the G650ER and Global 6000.

Runway Length Required for 90% Likelihood of Success

OEI Obstacle Accountability and Full MCMC Variations

50% Load Factor			
Aircraft	Destination	Block Time (hr)	90% Distance (ft)
G6000	EZE	10.50	6000
G6000	TLV	11.53	6000
G6000	HND	13.55	>7000
G650ER	EZE	10.50	6020
G650ER	TLV	11.53	6100
G650ER	HND	13.55	>7000

100% Load Factor			
Aircraft	Destination	Block Time (hr)	90% Distance (ft)
G6000	EZE	10.50	6000
G6000	TLV	11.53	6235
G6000	HND	13.55	>7000
G650ER	EZE	10.50	6160
G650ER	TLV	11.53	6270
G650ER	HND	13.55	>7000

reach all mainland, domestic and even North American markets. On the routes identified in this study the Global 6000 sees no additional benefit to a runway more than 6,000 feet in length when analyzing a 50% load factor. However, at 100% load factor the aircraft does require additional runway to reach destinations more than 11 block hours. The G650ER can utilize a modest extension to the runway to meet 90% success rate at 50% load factor for both EZE and TLV. For 100% load factor an additional between 200 and 300 feet of additional runway is required to achieve the 90% success rate. For both aircraft, Tokyo (HND) was unattainable for non-stop operations at any runway length less than 7,000 feet. The route efficiency issues discussed in Section 8.3 make these operations unlikely to succeed regardless of the runway length available though as the length increases, there is an increasing chance of success based on ambient local and enroute conditions that the operation may be possible.

When considering the aircraft analyzed for this study, the findings indicate that an extension of 200 feet, resulting in a total length of 6,200 feet for the new runway should be the minimum extension considered. This length allows for small and medium cabin business jets to target destinations up to 4-5 hours from UGN with at least a 50% load factor. In addition, this additional length empowers the large cabin business jets to achieve a 50% load factor to destinations exceeding 11 hours block time.

While 6,200 should be the minimum length considered, the results indicate an ideal length of approximately 6,550 feet. This runway length enables small and medium cabin business jets to operate at 100% load factor for routes 4-5.5 hours from UGN providing access to West Coast and Central American destinations for the most frequently used business jets. This extension also allows the large cabin jets to access all available destinations within the available range of the aircraft. In addition, the study indicates that, if route efficiencies were to improve in the future due to changing geopolitical circumstance, additional non-stop destinations may be available.

10 Summary

The analysis performed to determine the optimum runway length for the proposed extension of Runway 5-23 at Waukegan National (UGN) utilized advanced aircraft performance assessment methods defined in AC-150-5325-4C. The primary methodology involved the use of Monte Carlo simulation and statistical analysis to evaluate the likelihood of various aircraft types being able to support flight operations throughout a year. This data was compliant with 14 CFR parts 23, 25, 91, 91-K, and 135 certificated aircraft performance requirements. The analysis considered takeoff distances, one engine inoperative (OEI) obstacle clearance under different conditions.

Key inputs included historical weather data, aeronautical and geospatial information, and detailed aircraft performance data, either provided by manufacturers or created by operators. The Monte Carlo method allowed for the assessment of aircraft performance under a range of conditions to identify the likelihood of successful operations at different runway lengths. Landing performance was also investigated as a possible limiting factor, but Lean determined that the existing runway length of 6,000 feet was sufficient to accommodate all anticipated aircraft types assuming the existing capabilities of the airport to keep the runway clear of contaminants remain in place.

From these analyses the project team recommends pursuing one of two extensions to runway 5-23, identified as minimum and ideal.

The minimum recommended length is 6,200 feet based on the 800XP MCMC 50 and 100% LF at 90% cumulative likelihood when operating from UGN on flights up to 5 block hours. This would include non-stop service for most midsize cabin jets to destinations like on the west coast and in Central America and the Caribbean. This length would also have the effect of enabling the large cabin business jets to operate non-stop to destinations up to 11.5 block hours with 100% load factor.

The ideal length identified by the analysis is 6,550 feet which maximizes Small and Medium Cabin range on flights up to 5.5 block hours at 100% load factor. This would effectively make these kinds of aircraft unconstrained by the runway length, able to operate to their furthest capacity. This level of extension would enable repeatable non-stop operations to destinations to the limits of large cabin business jet capabilities as well. In addition, this would position the airport for the potential future where geopolitical restrictions on overflight are lessened, potentially allowing for non-stop service to Japan and deeper into the Middle East.

As part of an extension, it is also recommended to mitigate, if possible, the power lines south of the airport. These powerlines will effectively eliminate the benefits of runway extensions to more than 6,400 feet for large cabin business jets taking off on runway 23. As such, the benefits of a runway extension to the ideal length of 6,550 feet may not achieve the full anticipated benefit of the runway extension, particularly on hot days where OEI climb is impacted. Based on this performance analysis, a runway extension to the minimum recommended length of 6,200 feet would not require mitigation of these obstructions to realize the full benefit of the additional runway length.

APPENDIX 2

Aircraft That Benefit From Additional Runway Length at UGN

Current Small/Medium Cabin Business Jets

- Represented by Hawker 800XP
- Includes all Hawker derivatives, older Cessna Citations, Lear45/60
- More than 6,000ft of runway length is required for destinations in excess of 4 hours flight time
- Most aircraft in this category do not have the performance to fly to Hawaii, Alaska, Iceland or the UK
- Aircraft in this category are still very common both at UGN and throughout the NAS

Current and Future Large Cabin Business Jets

- Represented by both the Bombardier Global 6000 and Gulfstream G650ER
- Includes all current and upcoming large cabin business jets
- More than 6,000ft of runway length is required for destinations in excess of 10 hours flight time
- Additional runway length would be beneficial, but airspace limitations over Russia and the Middle East prevent current long range US business jets from achieving their maximum design range from UGN

LEAN CORPORATION

Aircraft That Benefit From Additional Runway Length at UGN

Current Small/Medium Cabin Business Jets

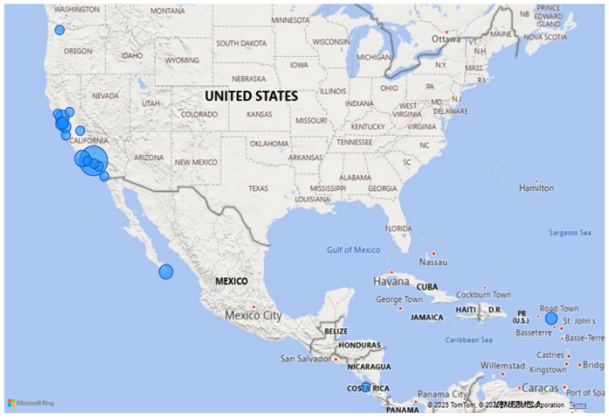
- Represented by Hawker 800XP
- Includes all Hawker derivatives, older Cessna Citations, Lear45/60
- More than 6,000ft of runway length is required for destinations in excess of 4 hours flight time
- Most aircraft in this category do not have the performance to fly to Hawaii, Alaska, Iceland or the UK
- Aircraft in this category are still very common both at UGN and throughout the NAS

Hawker 800XP Equivalent Family (800XP EQV):

- All Hawker BusinessJet Derivatives:
  - HS-125 (All Derivatives)
  - 400XP
  - 900XP
  - 750XP
- All Cessna Citation Models:
  - V
  - VII
  - 680
- Learjet 45 and 60
- IAI Westwind

4 hours flight time equivalent to stage length >1500NM





Typical UGN 800XP EQV Destinations ≥ 1500 nm

UGN 800XP EQV >1500 NM Stage Length

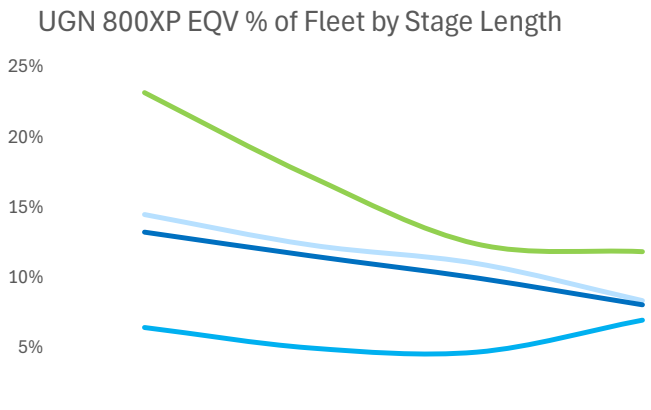
Baseline 800XP EQV % of Jets by Stage Length

- >1000 NM Years 21-24 AVG 16% of Total Jets
- >1500 NM Years 21-24 AVG 6% of Total Jets

Forecast 800XP EQV Assumptions with Additional Length*

- Baseline = >1500 NM to 12% of stage length band
- High = >1500 NM to 16% of stage length band

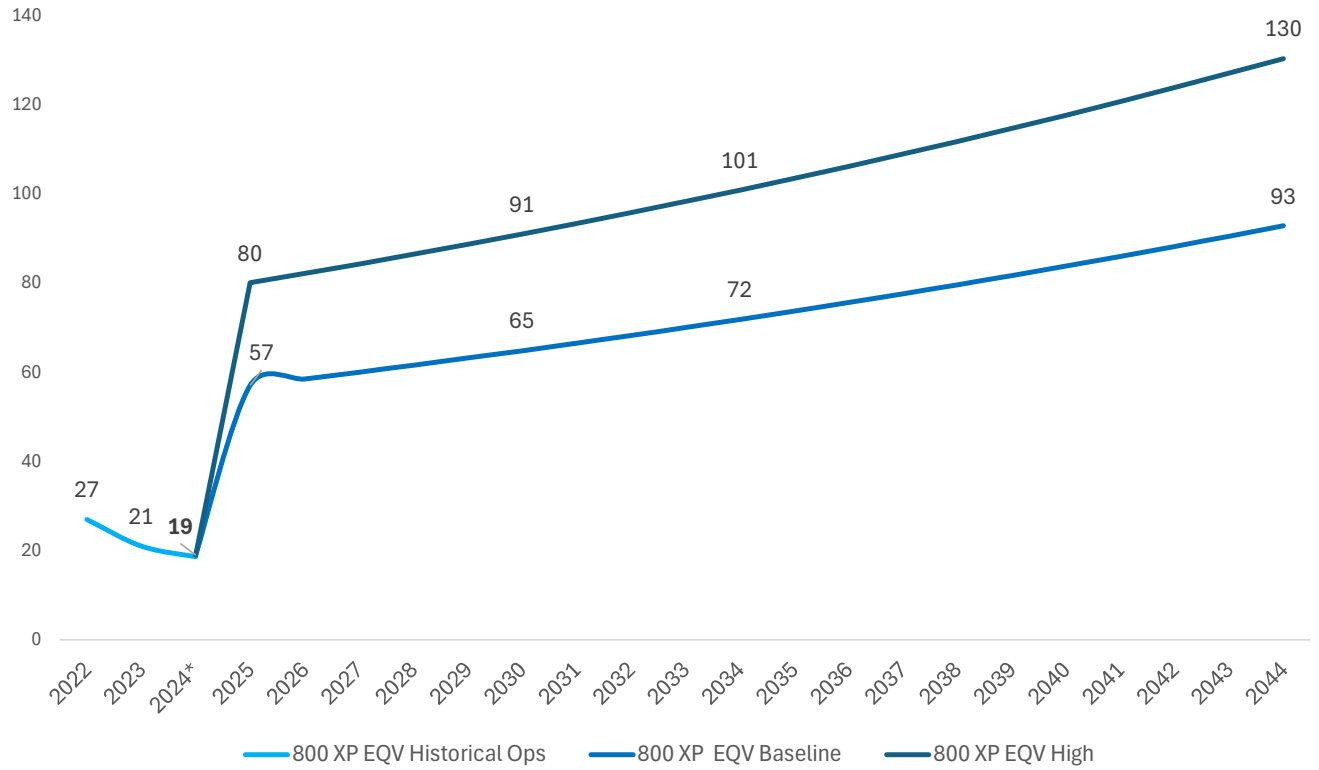
**assumes operations unconstrained by runway length starting in 2025*



	2021	2022	2023	2024
0-500NM	15%	12%	11%	8%
500-1000NM	13%	12%	10%	8%
1000-1500NM	23%	17%	12%	12%
>1500NM	6%	5%	5%	7%

Source: Flight Aware

UGN 800XP EQV >1500 NM Stage Length Forecast



Source: Flight Aware

Aircraft That Benefit From Additional Runway Length at UGN





Typical UGN G650 EQV Originations ≥ 4000nm

Gulfstream G650 Equivalent Family (G650 EQV):

- All Gulfstream Models
  - G500
  - G550
  - GIV/V/VI
  - G700
  - G750
- All Dassault Models
  - Falcon 900
  - Falcon 2000
  - Falcon 7X and 8X
- Additional Bombardier Models
  - Global 5000
  - Global 7500

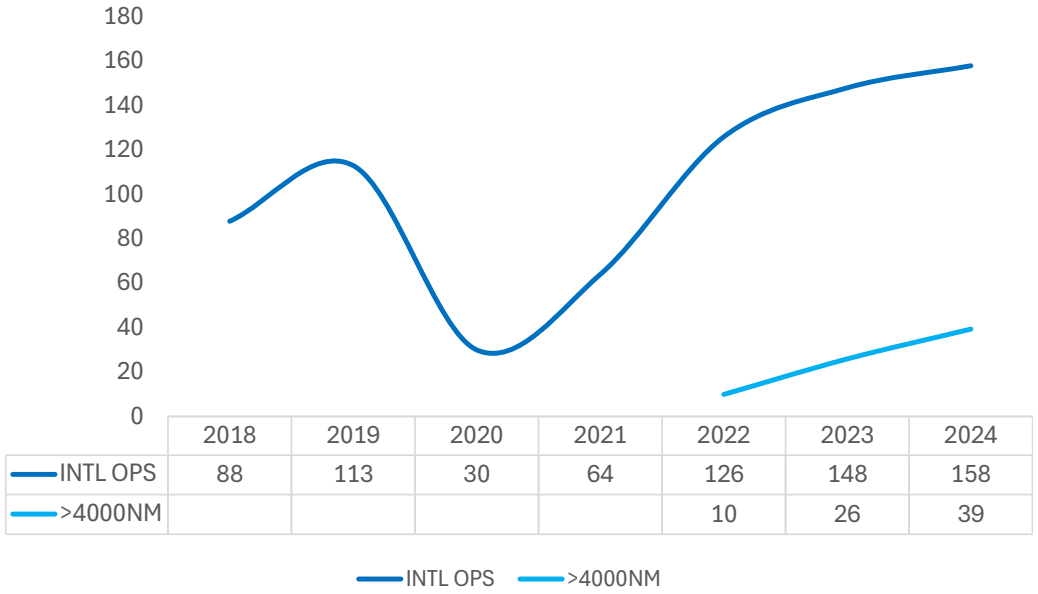
10 hours flight time equivalent to stage length >4000NM

Current and Future Large Cabin Business Jets

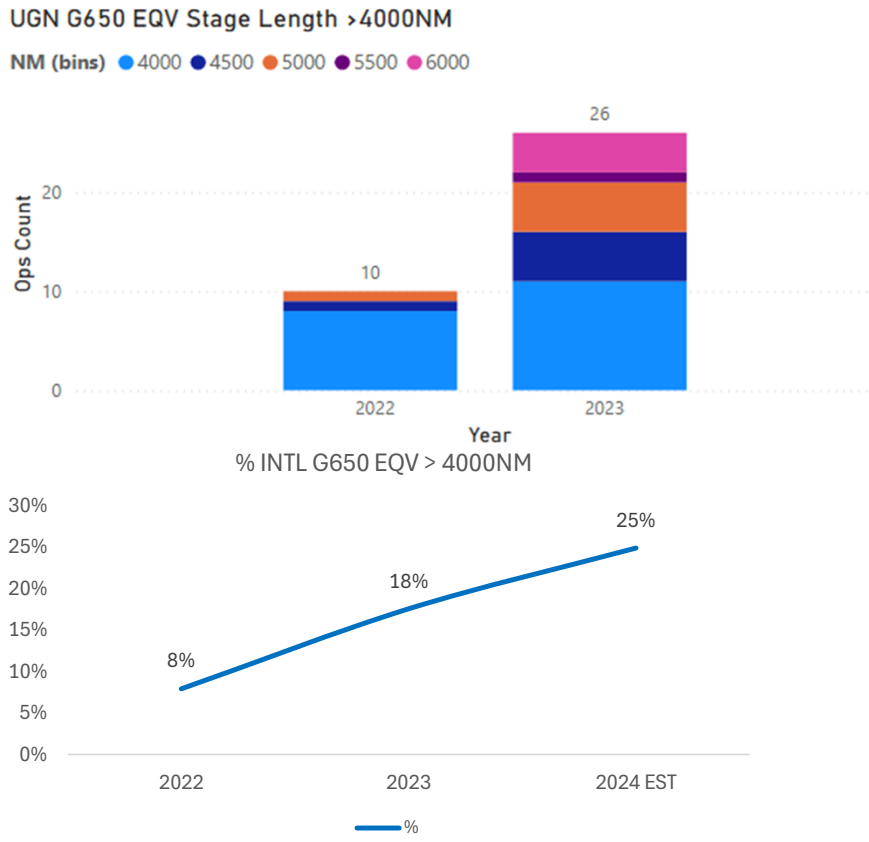
- Represented by both the Bombardier Global 6000 and Gulfstream G650ER
- Includes all current and upcoming large cabin business jets
- More than 6,000ft of runway length is required for destinations in excess of 10 hours flight time
- Additional runway length would be beneficial, but airspace limitations over Russia and the Middle East prevent current long range US business jets from achieving their maximum design range from UGN

UGN G650 EQV >4000 NM Stage Length

Current G600/650 equivalent fleet International and > 4000 NM Ops



	2018	2019	2020	2021	2022	2023	2024
INTL OPS	88	113	30	64	126	148	158
>4000NM					10	26	39



Source: Flight Aware/ TFMSC

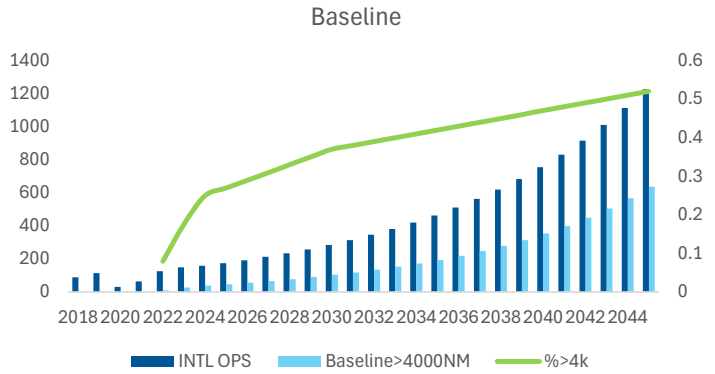
UGN G650 EQV >4000 NM Stage Length Forecast

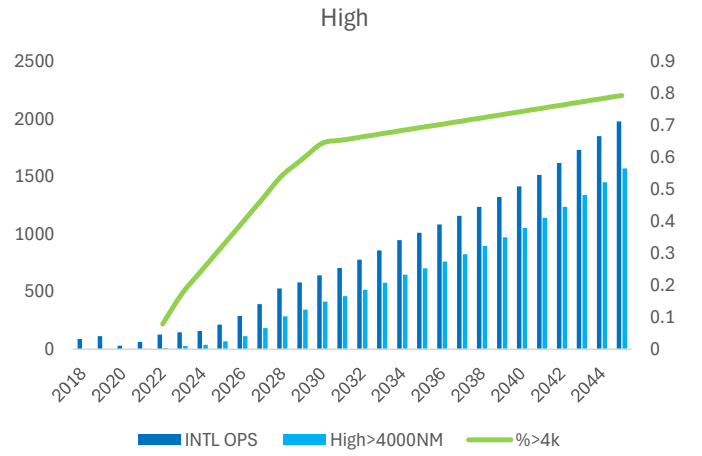
Forecast Assumptions with Additional length*

- Baseline
  - International Operations Grow at historical 2018-2024 rate ~10%
  - Growing Percent of International Operations > 4000 NM ~ 50% by 2044
- High
  - International Operations Grow at historical 2021-2024 rate ~ 35% through 2028
  - International Operations Grow at historical 2018-2024 rate ~ 10% through 2035
  - International Operations Grow at historical 2019-2024 rate ~ 7% through 2044
  - Growing Percent of International Operations > 4000 NM ~ 78% by 2044

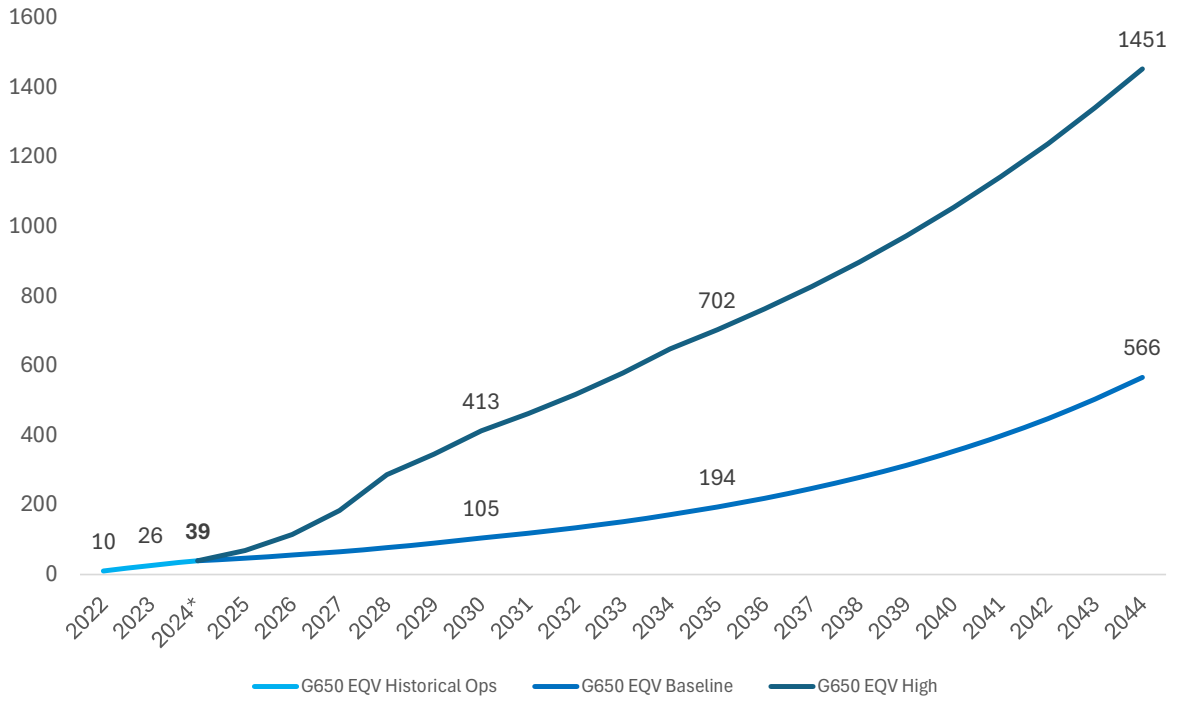
**assumes operations unconstrained by runway length starting in 2025*

UGN INTL OPS AVG GROWTH	
2021-2024	35%
2018-2024	10%
2019-2024	7%



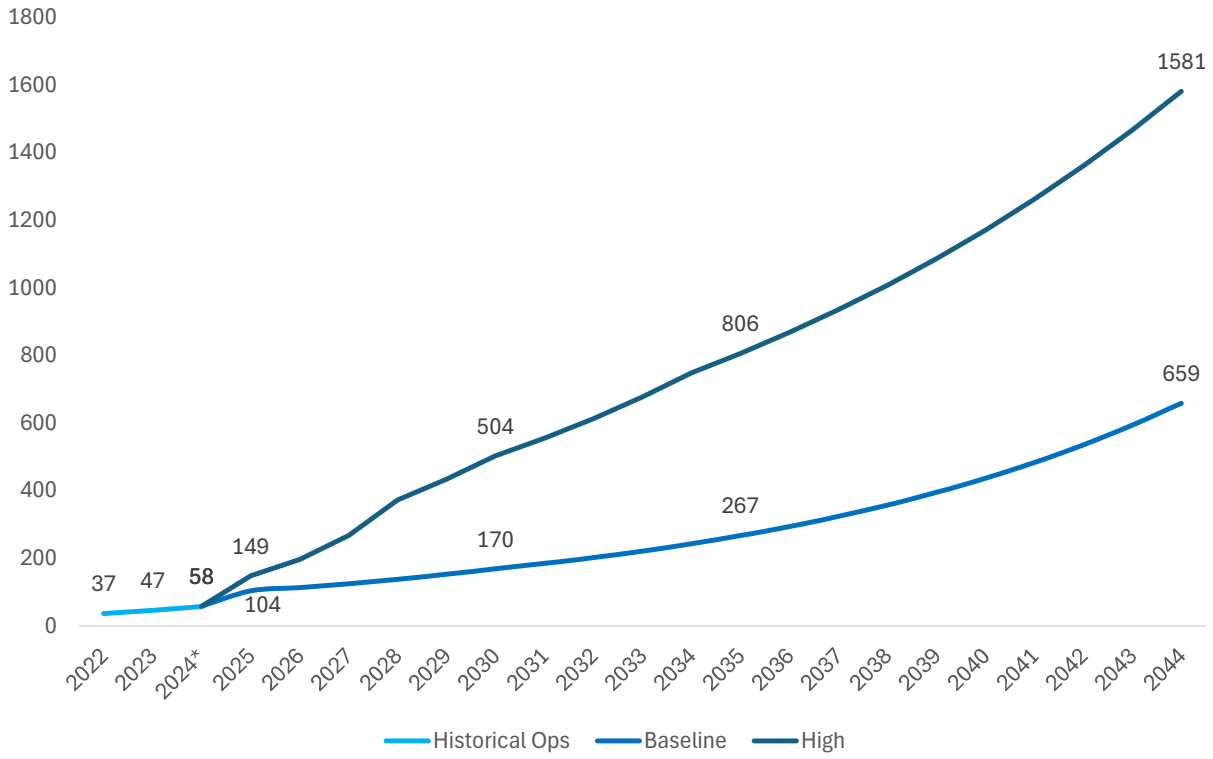


UGN G650 EQV >4000 NM Stage Length



Source: Flight Aware/ TFMSC

UGN 800XP EQV >1500 NM and G650 EQV > 4000 NM Combined Ops That Benefit From Additional Runway Length

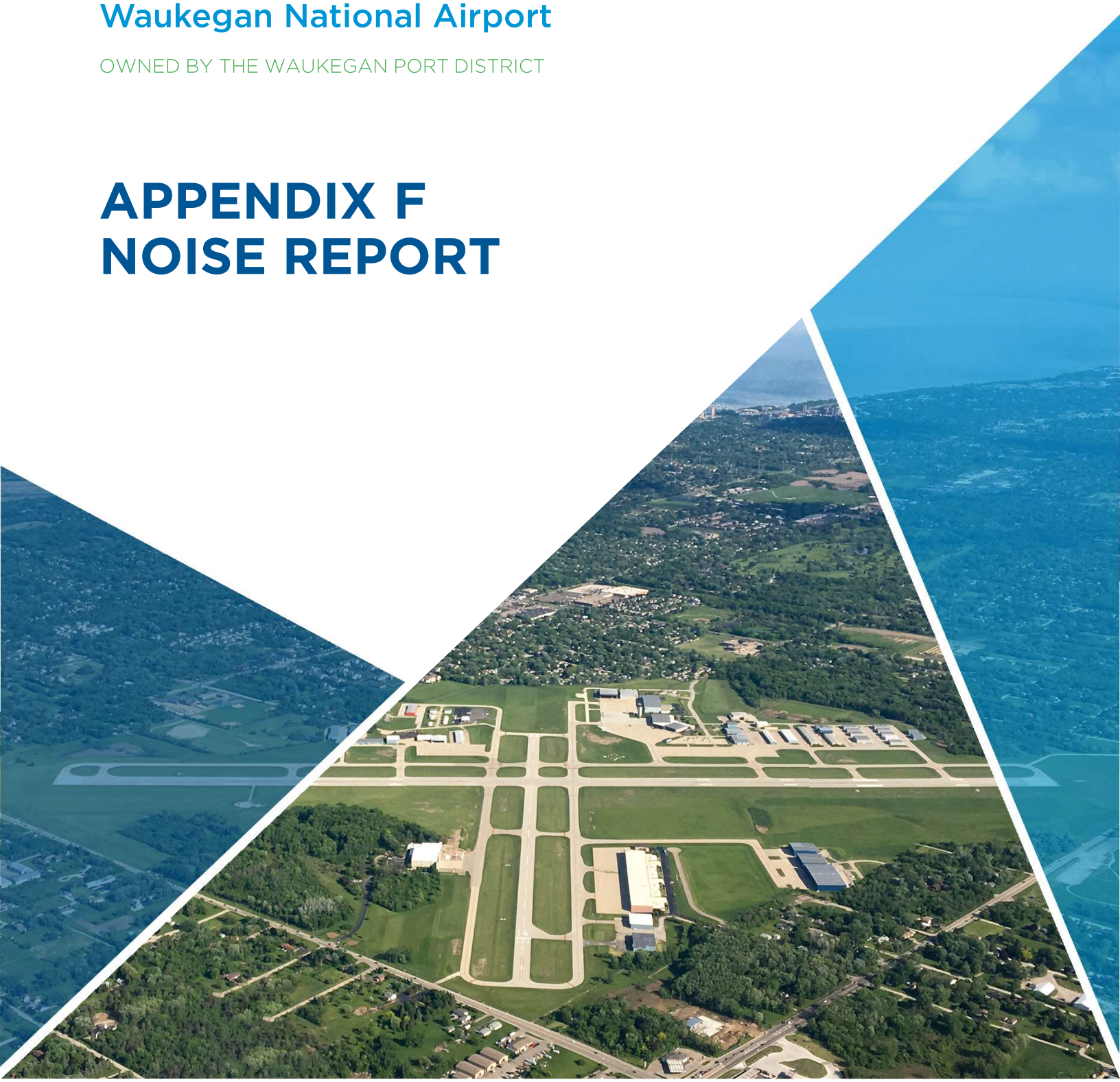


Source: Flight Aware/ TFMSC

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX F
NOISE REPORT



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

NOISE AND NOISE-COMPATIBLE LAND USE

October 2025



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

Table of Contents

EXECUTIVE SUMMARY 1
INTRODUCTION 1
FAA NOISE COMPATIBLE LAND USE GUIDELINES 2
NOISE MODELING AND ANALYSIS 4
Existing Condition: 2023 ..... *4*
Runway Configuration 4
Aircraft Fleet Mix and Operations 4
Runway Utilization 8
Flight Tracks 9
DNL Contours 13
No Action Alternative: 2029 ..... *15*
Runway Configuration/Utilization and Flight Tracks 15
Aircraft Fleet Mix and Operations 15
DNL Contours 18
Proposed Action Alternative: 2029 ..... *20*
Runway Configuration 20
Aircraft Fleet Mix/Operations and Runway Utilization 22
Flight Tracks 22
DNL Contours 25
No Action Alternative: 2034 ..... *27*
Runway Configuration/Utilization and Flight Tracks 27
Aircraft Fleet Mix and Operations 27
DNL Contours 30
Proposed Action Alternative: 2034 ..... *32*
Runway Configuration/Utilization, Aircraft Fleet Mix/Operations, and Flight Tracks 32
DNL Contours 32
SIGNIFICANCE THRESHOLD 34
MITIGATION 34
DEPARTMENT OF TRANSPORTATION ACT SECTION 303 (4(f) PROPERTIES) 34

LIST OF TABLES

Table 1 – FAA Aircraft Noise Land Use Compatibility 3
Table 2 – Runway Dimensions: Existing Condition (2023) 4
Table 3 – Annual Average Day (AAD) Aircraft Operations: Existing Condition (2023) 6
Table 4 – Runway Utilization: Existing Condition (2023) 9
Table 5 – Percent Use of Departure Flight Tracks: Existing Condition (2023) 10
Table 6 – Annual Average Day (AAD) Aircraft Operations (2029) 15
Table 7 – Runway Dimensions: Proposed Action (2029) 20
Table 8 – Annual Average Day (AAD) Aircraft Operations (2034) 27

LIST OF EXHIBITS

Exhibit 1 – Airport Layout: Existing Condition (2023) 5
Exhibit 2 – Flight Tracks – East Flow: Existing Condition (2023) 11
Exhibit 3 – Flight Tracks – West Flow: Existing Condition (2023).....12
Exhibit 4 – DNL Contours: Existing Condition (2023).....14
Exhibit 5 – DNL Contours: No Action (2029) 19
Exhibit 6 – Airport Layout: Proposed Action.....21
Exhibit 7 – Flight Tracks – East Flow: Proposed Action (2029).....23
Exhibit 8 – Flight Tracks – West Flow: Proposed Action (2029) 24
Exhibit 9 – DNL Contours: Proposed Action (2029) 26
Exhibit 10 – DNL Contours: No Action (2034) 31
Exhibit 11 – DNL Contours: Proposed Action (2034) 33
Exhibit 12 – 4(f) Properties and Proposed Action DNL Contours (2034) 35

EXECUTIVE SUMMARY

The Waukegan Port District, owners of Waukegan National Airport (UGN), is proposing to shift Runway 05/23 approximately 400 feet southwest of the existing location. To comply with the National Environmental Policy Act (NEPA) of 1970, federally funded projects must examine potential environmental impacts of the Proposed Action. This includes the potential for project-related aircraft noise impacts. The Federal Aviation Administration Agency (FAA) has created policies and procedures to ensure compliance with NEPA. The FAA also created the Aviation Environmental Design Tool (AEDT). Use of AEDT is required when evaluating project-related aircraft noise.

The affected environment represents existing conditions at the airport in the year 2023. During 2023, there were 134 annual average day (AAD) aircraft operations. By 2029 and 2034 with the No Action and Proposed Action Alternatives, it is forecast that there will be 148 and 150 AAD aircraft operations, respectively. At these levels of operation, with the existing condition and in the future with or without the shift in the location of Runway 05/23, all land uses within the day-night average sound level (DNL) 65 A-weighted decibel (dBA) contours are/would be compatible with aircraft noise.

The Proposed Action would result in a 1.5 dBA or greater increase in aircraft noise at noise sensitive land uses. The Proposed Action would result in six (6) new noncompatible properties within the DNL 65 dBA contour off the southwest end of Runway 5. However, these six properties would be acquired as part of the Proposed Action and would transition to a noise compatible land use.

There are publicly owned lands nearby for which the Section 4(f) requirements of the Department of Transportation Act may be applicable, but are not within the future DNL 65-dBA or greater contours and are considered compatible with aircraft noise.

The small parcel of land west of Runway End 05 is owned by the Waukegan Park District but is not accessible to the public, nor being utilized as a park. This small parcel of land lies within the future DNL 65- to 70-dBA contours, but is identified for acquisition and would transition to an aircraft noise compatible land use.

Based on the results of the analysis performed to evaluate aircraft noise, the Proposed Action would not impact any future noncompatible land use in the vicinity of UGN.

INTRODUCTION

For compliance with the NEPA of 1970, federally funded programs must examine potential impacts of a proposed action. When determining impacts associated with airport improvements, the FAA created policies and procedures to ensure compliance with NEPA. The policies/procedures are presented in FAA *Order 1050.1G – FAA National Environmental Policy Act Implementing Procedures, June 30, 2025* and FAA's *1050.1 Desk Reference, Federal Aviation Administration Office of Environment and Energy, Version 3*. These documents provide guidance in preparing environmental reviews and include specific directions for addressing aircraft noise.

The FAA also developed the AEDT, the use of which is required when evaluating aircraft noise. The noise analysis for UGN was developed using AEDT Version 3g which requires numerous input parameters such as airport configuration, runway use, aircraft flight tracks, and aircraft operations by type and by time of day. The following describes the input parameters used in the analysis and the noise exposure results.

NOISE METRICS

Sound is energy transferred through the air that our ears detect as minor changes in air pressure. The more energy put into making a sound, the louder it will be. Noise is sound that is unwanted. Some sounds, like a distant train whistle, can be a pleasant sound for some, while being considered noise by others. Other sounds, like a neighbor's barking dog in the middle of the night, are more universally found

to be annoying. Even sounds that are pleasant at one volume can become noise to us as they get louder. Noise, then, has both an objective, physical component; as well as a subjective component that takes account of a person's individual perception, or reaction, to a sound. The decibel (dB) is the unit used to measure the intensity of a sound.

The human ear hears sound pressures over a wide range. Decibels, which are measured on a *logarithmic* scale, correspond to the way our ears interpret sound pressure levels. The human ear also responds to different pitches or frequencies of sound differently. We are less able to hear low frequencies like the rumble of thunder but hear high frequencies like the cry of a baby more strongly. To account for differences in how people respond to sound, the dBA is used. This scale most closely approximates the relative loudness of sounds in air as perceived by the human ear and provides a more useful way to evaluate the effect of noise exposure on humans by focusing on those parts of the frequency spectrum where we hear most. The A-weighted sound level has been adopted by the FAA as the accepted measure to consider aircraft noise.

DNLs are used to reflect a person's cumulative exposure to sound over a 24-hour period, expressed as the noise level for the operations occurring on the AAD. AEDT was used to create DNL contours due to aircraft arrivals to, and departures from, UGN. The DNL contours were overlaid on land use maps of the airport environs to identify land uses within the DNL 65-dBA contour as being either compatible or noncompatible with aircraft noise. Using guidelines in Title 14, Part 150 of the Code of Federal Regulations (14 CFR 150 or Part 150) and FAA's Order 1050.1G (FAA's procedures for implementing NEPA), the DNL 65-dBA threshold, as well as DNLs of 70- and 75-dBA are used to delineate areas of significant aircraft noise. The FAA, and other federal agencies, use DNL as the primary measure of noise impact because: it correlates well with the results of attitudinal surveys regarding noise; and it accounts for an increased sensitivity to noise at night by increasing each noise event that occurs during nighttime hours (i.e., 10:00 pm to 6:59 am) by 10-dBA.

Noise levels can be computed at individual locations of interest, but to show how noise can vary over extended areas, noise metric results like DNL are often drawn on maps in terms of lines connecting points of the same dBA level. Like topographical maps showing the elevation of terrain in an area, these noise "contours" are useful for comparing aircraft noise exposure throughout an airport community. The shape of noise contours depends on many factors but are influenced by things like whether more arriving or departing aircraft are flying over an area.

FAA NOISE COMPATIBLE LAND USE GUIDELINES

The FAA has guidelines regarding the compatibility of land uses with various aircraft noise levels measured using the DNL metric. These guidelines are defined in Appendix A of Part 150. The land use compatibility table from Part 150 is presented in **Table 1**. These guidelines show the compatibility parameters for residential, public (schools, churches, nursing homes, hospitals, and libraries), commercial, institutional, and recreational land uses. The land uses listed in this table that are exposed to aircraft noise levels below the DNL 65-dBA noise contour are considered compatible with aircraft noise.

Table 1 - FAA Aircraft Noise Land Use Compatibility						
Land Use	Yearly Day Night Average Sound Level (DNL) In Decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N	N	N
Public Use						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and Nursing Homes	Y	25	30	N	N	N
Churches, Auditoriums and Concert Halls	Y	25	30	N	N	N
Government Services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
Offices, Businesses and Professional	Y	Y	25	30	N	N
Wholesale and Retail – Building Materials, Hardware and Farm Equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail Trade - General	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communications	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, General	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and Optical	Y	Y	25	30	N	N
Agricultural (except livestock) and Forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and Fishing, Resource Production and Extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor Sports Arenas and Spectator Sports	Y	Y(5)	Y(5)	N	N	N
Outdoor Music Shells, Amphitheaters	Y	N	N	N	N	N
Nature Exhibits and Zoos	Y	Y	N	N	N	N
Amusements, Parks, Resorts and Camps	Y	Y	Y	N	N	N
Golf Courses, Riding Stables and Water Recreation	Y	Y	25	30	N	N

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(4) Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal level is low.

(5) Land use compatible provided special sound reinforcement systems are installed.

(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30.

(8) Residential buildings are not permitted.

Notes:

1. *The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.*
2. *SLUCM=Standard Land Use Coding Manual.*
3. *Y (Yes)=Land Use and related structures compatible without restrictions.*
4. *N (No)=Land Use and related structures are not compatible and should be prohibited.*
5. *NLR=Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.*
6. *25, 30, or 35=Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.*

Source: 14 C.F.R. § 150 Airport Noise Compatibility Planning, Appendix A, Table 1.

NOISE MODELING AND ANALYSIS

Existing Condition: 2023

Runway Configuration

The existing (year 2023) airfield configuration at UGN has two intersecting runways, Runway 05/23, and Runway 14/32. **Table 2** provides the dimensions of the runways and **Exhibit 1** depicts UGN's existing airport layout.

Table 2 - Runway Dimensions: Existing Condition (2023)

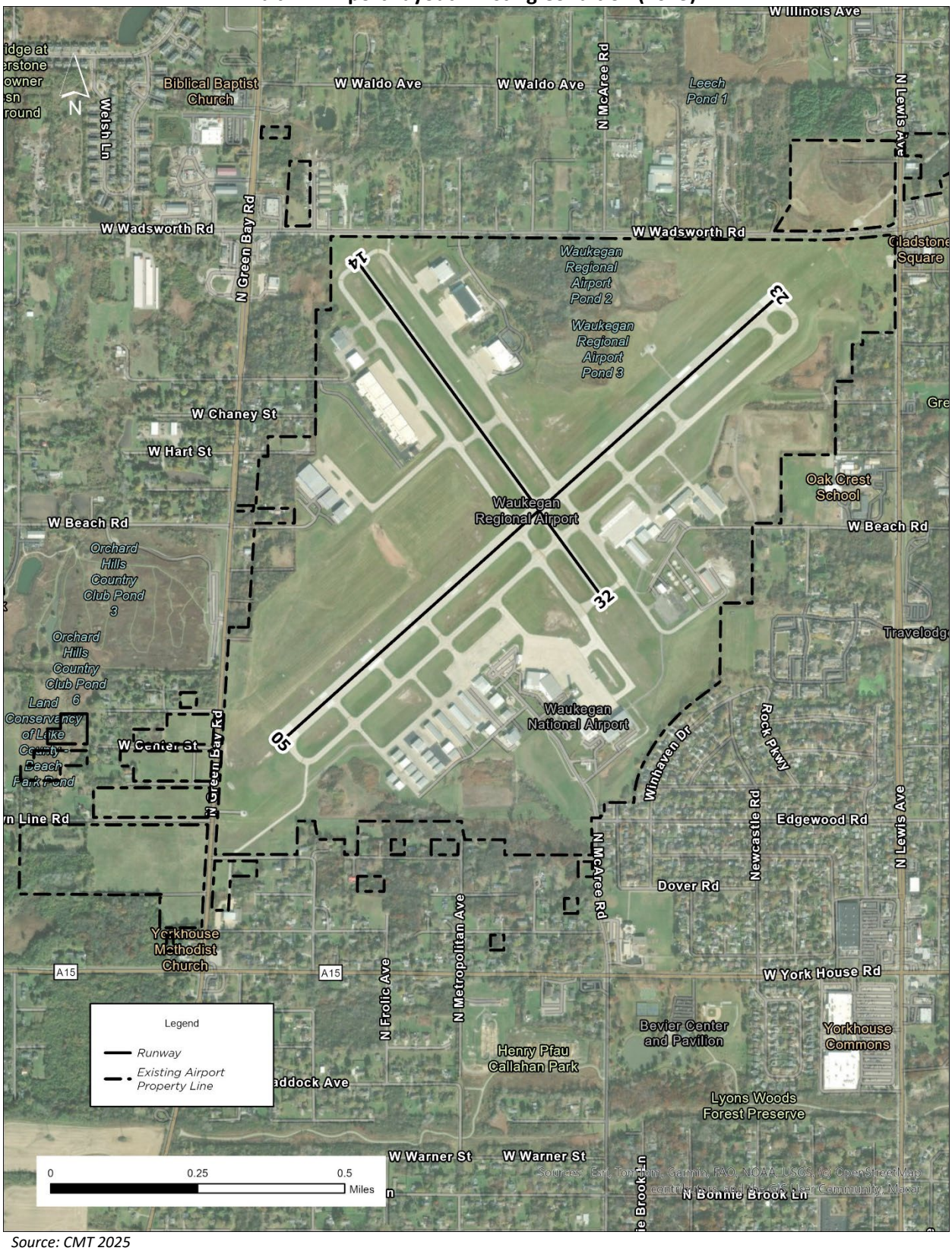
Runway Numerals	Runway Length (ft)	Runway Width (ft)
05/23	6,000	150
14/32	3,750	75

Source: CMT 2025.

Aircraft Fleet Mix and Operations

The aircraft fleet mix and the number of AAD operations for the Existing Condition were derived from 2023 FlightAware data and FAA's Operational Network (OPSNET) data. FlightAware data was also used to determine the time-of-day that the operations occurred. In 2023 for the Existing Condition there were approximately 134 AAD operations. **Table 3** provides the Existing Condition aircraft fleet mix and AAD operations by aircraft type, category, and time-of-day.

Exhibit 1 – Airport Layout: Existing Condition (2023)



Source: CMT 2025

Table 3 – Annual Average Day (AAD) Aircraft Operations: Existing Condition (2023)							
Aircraft Type	Arrivals		Departures		Touch & Go		Total Operations (AAD)
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
Jet							
ASTR	0.010	0.000	0.010	0.000	0.000	0.000	0.019
BE40	0.235	0.005	0.249	0.000	0.000	0.000	0.489
C25A	0.048	0.000	0.048	0.000	0.000	0.000	0.096
C25B	0.316	0.010	0.321	0.010	0.000	0.000	0.657
C25C	0.024	0.000	0.024	0.000	0.000	0.000	0.048
C501	0.005	0.000	0.005	0.000	0.000	0.000	0.010
C525	0.038	0.005	0.043	0.000	0.000	0.000	0.086
C550	0.062	0.000	0.058	0.005	0.000	0.000	0.125
C560	0.237	0.010	0.227	0.019	0.000	0.000	0.492
C56X	0.758	0.010	0.738	0.024	0.000	0.000	1.530
C650	0.038	0.000	0.038	0.000	0.000	0.000	0.077
C680	0.403	0.024	0.384	0.043	0.000	0.000	0.854
C68A	1.088	0.019	1.050	0.053	0.000	0.000	2.210
C700	0.331	0.019	0.316	0.024	0.000	0.000	0.690
C750	0.374	0.024	0.384	0.019	0.000	0.000	0.801
CL30	1.558	0.086	1.558	0.072	0.000	0.000	3.275
CL35	0.005	0.000	0.000	0.000	0.000	0.000	0.005
CL60	0.321	0.005	0.316	0.005	0.000	0.000	0.647
CRJ2	0.019	0.000	0.019	0.000	0.000	0.000	0.038
E135	0.005	0.000	0.005	0.000	0.000	0.000	0.010
E35L	0.058	0.005	0.058	0.005	0.000	0.000	0.125
E50P	0.010	0.000	0.010	0.000	0.000	0.000	0.019
E545	0.292	0.010	0.307	0.000	0.000	0.000	0.609
E550	0.096	0.000	0.096	0.000	0.000	0.000	0.192
E55P	0.527	0.034	0.547	0.014	0.000	0.000	1.122
F2TH	2.177	0.024	1.851	0.345	0.000	0.000	4.397
F900	0.470	0.043	0.456	0.053	0.000	0.000	1.021
FA20	0.014	0.000	0.014	0.000	0.000	0.000	0.029
FA50	0.034	0.005	0.043	0.000	0.000	0.000	0.082
FA7X	0.043	0.000	0.043	0.000	0.000	0.000	0.086
G150	0.034	0.000	0.034	0.000	0.000	0.000	0.067
G280	0.671	0.072	0.671	0.072	0.000	0.000	1.486

Table 3 – Annual Average Day (AAD) Aircraft Operations: Existing Condition (2023)							
Aircraft Type	Arrivals		Departures		Touch & Go		Total Operations (AAD)
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
GA5C	0.163	0.010	0.173	0.000	0.000	0.000	0.345
GA6C	0.667	0.072	0.647	0.101	0.000	0.000	1.486
GALX	0.029	0.000	0.034	0.000	0.000	0.000	0.062
GL5T	0.307	0.010	0.297	0.019	0.000	0.000	0.633
GL7T	0.005	0.005	0.010	0.000	0.000	0.000	0.019
GLEX	0.153	0.024	0.173	0.005	0.000	0.000	0.355
GLF4	0.667	0.019	0.667	0.029	0.000	0.000	1.381
GLF5	1.954	0.173	1.959	0.177	0.000	0.000	4.263
GLF6	0.595	0.034	0.590	0.038	0.000	0.000	1.256
H25B	0.259	0.024	0.278	0.000	0.000	0.000	0.561
H25C	0.019	0.000	0.019	0.000	0.000	0.000	0.038
HA4T	0.014	0.000	0.014	0.000	0.000	0.000	0.029
HDJT	0.014	0.000	0.014	0.000	0.000	0.000	0.029
LJ31	0.005	0.000	0.005	0.000	0.000	0.000	0.010
LJ35	0.005	0.000	0.005	0.000	0.000	0.000	0.010
LJ40	0.005	0.000	0.005	0.000	0.000	0.000	0.010
LJ45	0.801	0.038	0.830	0.019	0.000	0.000	1.688
LJ55	0.005	0.000	0.005	0.000	0.000	0.000	0.010
LJ60	0.125	0.000	0.120	0.005	0.000	0.000	0.249
PC24	0.072	0.000	0.072	0.000	0.000	0.000	0.144
PRM1	0.010	0.000	0.010	0.000	0.000	0.000	0.019
SF50	0.072	0.000	0.072	0.000	0.000	0.000	0.144
WW24	0.000	0.005	0.005	0.000	0.000	0.000	0.010
Piston (Consolidated)							
BE36	0.745	0.038	0.726	0.058	0.000	0.000	1.567
C152	2.421	0.144	2.642	0.014	0.000	0.000	5.222
C172	5.771	0.130	5.849	0.054	41.001	0.414	53.220
C182	1.659	0.062	1.683	0.019	0.000	0.000	3.424
BE55	0.705	0.010	0.710	0.005	0.000	0.000	1.429
DA40	2.009	0.029	2.019	0.000	0.000	0.000	4.057
DV20	4.661	0.086	4.723	0.029	0.000	0.000	9.499
M20P	0.615	0.000	0.611	0.000	0.611	0.000	1.836
P28A	2.843	0.129	2.982	0.048	0.000	0.000	6.003

Table 3 – Annual Average Day (AAD) Aircraft Operations: Existing Condition (2023)							
Aircraft Type	Arrivals		Departures		Touch & Go		Total Operations (AAD)
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
PA32	0.614	0.014	0.595	0.024	0.000	0.000	1.247
PA44	0.302	0.002	0.302	0.000	3.201	0.000	3.807
RV12	0.993	0.043	1.021	0.024	0.000	0.000	2.081
SR22	2.402	0.067	2.426	0.043	0.000	0.000	4.939
Turboprop							
BE10	0.086	0.000	0.091	0.000	0.000	0.000	0.177
BE20	0.194	0.000	0.198	0.000	0.000	0.000	0.392
BE30	0.005	0.000	0.005	0.000	0.000	0.000	0.010
BE9L	0.005	0.000	0.005	0.000	0.000	0.000	0.010
C30J	0.053	0.000	0.053	0.000	0.000	0.000	0.106
C208	0.000	0.005	0.000	0.005	0.000	0.000	0.010
C425	0.005	0.000	0.005	0.000	0.000	0.000	0.010
E120	0.005	0.000	0.005	0.000	0.000	0.000	0.010
MU2	0.053	0.000	0.048	0.000	0.000	0.000	0.101
PC12	0.067	0.000	0.067	0.000	0.000	0.000	0.134
SW3	0.005	0.000	0.005	0.000	0.000	0.000	0.010
SW4	0.005	0.000	0.005	0.000	0.000	0.000	0.010
T34P	0.034	0.000	0.029	0.000	0.000	0.000	0.062
TBM7	0.062	0.000	0.062	0.000	0.000	0.000	0.125
TBM8	0.005	0.000	0.000	0.000	0.000	0.000	0.005
TEX2	0.028	0.000	0.028	0.000	0.000	0.000	0.055
TBM9	0.014	0.000	0.019	0.000	0.000	0.000	0.034
						Total	**133.732**

Notes: Daytime Hours = 07:00AM to 09:59PM. Nighttime Hours = 10:00PM to 06:59AM.; Data Sources: FlightAware, FAA OPSNET, CMT 2025

Runway Utilization

Runway utilization for the Existing Condition was also derived from 2023 FlightAware data. **Table 4** provides the percentage of use by aircraft category, runway, and time of day.

Table 4 - Runway Utilization: Existing Condition (2023)				
Aircraft Category	Runway End Percent Usage			
	Runway 05	Runway 23	Runway 14	Runway 32
Daytime Arrivals				
Jet	43.3%	56.7%	0.0%	0.1%
Piston (Consolidated)	42.0%	49.3%	4.2%	4.5%
Turboprop	52.9%	47.1%	0.0%	0.0%
Nighttime Arrivals				
Jet	39.3%	60.1%	0.0%	0.6%
Piston (Consolidated)	35.3%	37.8%	3.7%	23.2%
Turboprop	100.0%	0.0%	0.0%	0.0%
Daytime Departures				
Jet	42.8%	57.1%	0.0%	0.0%
Piston (Consolidated)	41.0%	48.5%	3.6%	6.9%
Turboprop	47.1%	51.7%	1.1%	0.0%
Nighttime Departures				
Jet	40.9%	59.1%	0.0%	0.0%
Piston (Consolidated)	27.5%	12.5%	22.5%	37.5%
Turboprop	100.0%	0.0%	0.0%	0.0%
Daytime Touch & Go				
Jet	0.0%	0.0%	0.0%	0.0%
Piston (Consolidated)	41.1%	48.1%	3.9%	6.9%
Turboprop	0.0%	0.0%	0.0%	0.0%
Nighttime Touch & Go				
Jet	0.0%	0.0%	0.0%	0.0%
Piston (Consolidated)	40.8%	57.6%	0.0%	1.6%
Turboprop	0.0%	0.0%	0.0%	0.0%

Notes: Daytime Hours = 07:00AM to 09:59PM. Nighttime Hours = 10:00PM to 06:59AM Source: CMT 2025.

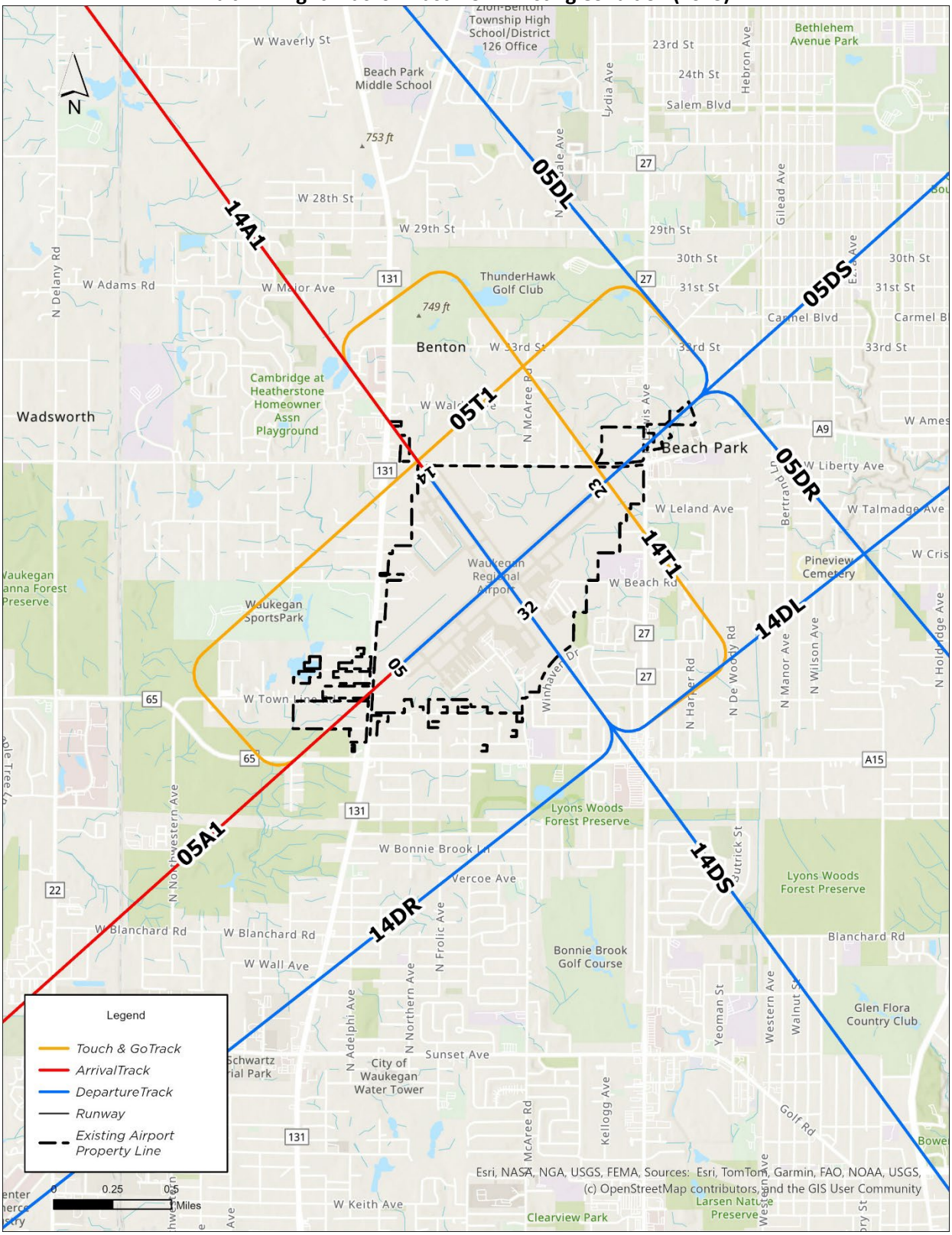
Flight Tracks

The 2023 Existing Condition flight tracks utilized by itinerant departure operations were modeled with jet and turboprop aircraft following a straight-out path from the runway and piston aircraft were modeled with departure operations equally divided among straight-out, left turn and right turn procedures. All aircraft arrivals were modeled flying a straight-in path to the runway. Presently, Runways 05, 14 and 32 have a standard airport left-hand traffic pattern and Runway 23 has a non-standard right-hand pattern. The modeled flight tracks were reviewed by UGN air traffic control tower staff. **Table 5** provides the modeled departure flight track utilization percentages. **Exhibits 2** and **3** depict the modeled flight tracks for the 2023 Existing Condition.

Table 5 – Percent Use of Departure Flight Tracks: Existing Condition (2023)							
Runway End	Track ID	Large Jet	Medium Jet	Small Jet	Light Jet	Turbo Prop	Piston
05	5DL	-	-	-	-	-	33%
	5DS	100%	100%	100%	100%	100%	34%
	5DR	-	-	-	-	-	33%
23	23DL	-	-	-	-	-	33%
	23DS	100%	100%	100%	100%	100%	34%
	23DR	-	-	-	-	-	33%
14	14DL	-	-	-	-	-	33%
	14DS	100%	100%	100%	100%	100%	34%
	14DR	-	-	-	-	-	33%
32	32DL	-	-	-	-	-	33%
	32DS	100%	100%	100%	100%	100%	34%
	32DR	-	-	-	-	-	33%

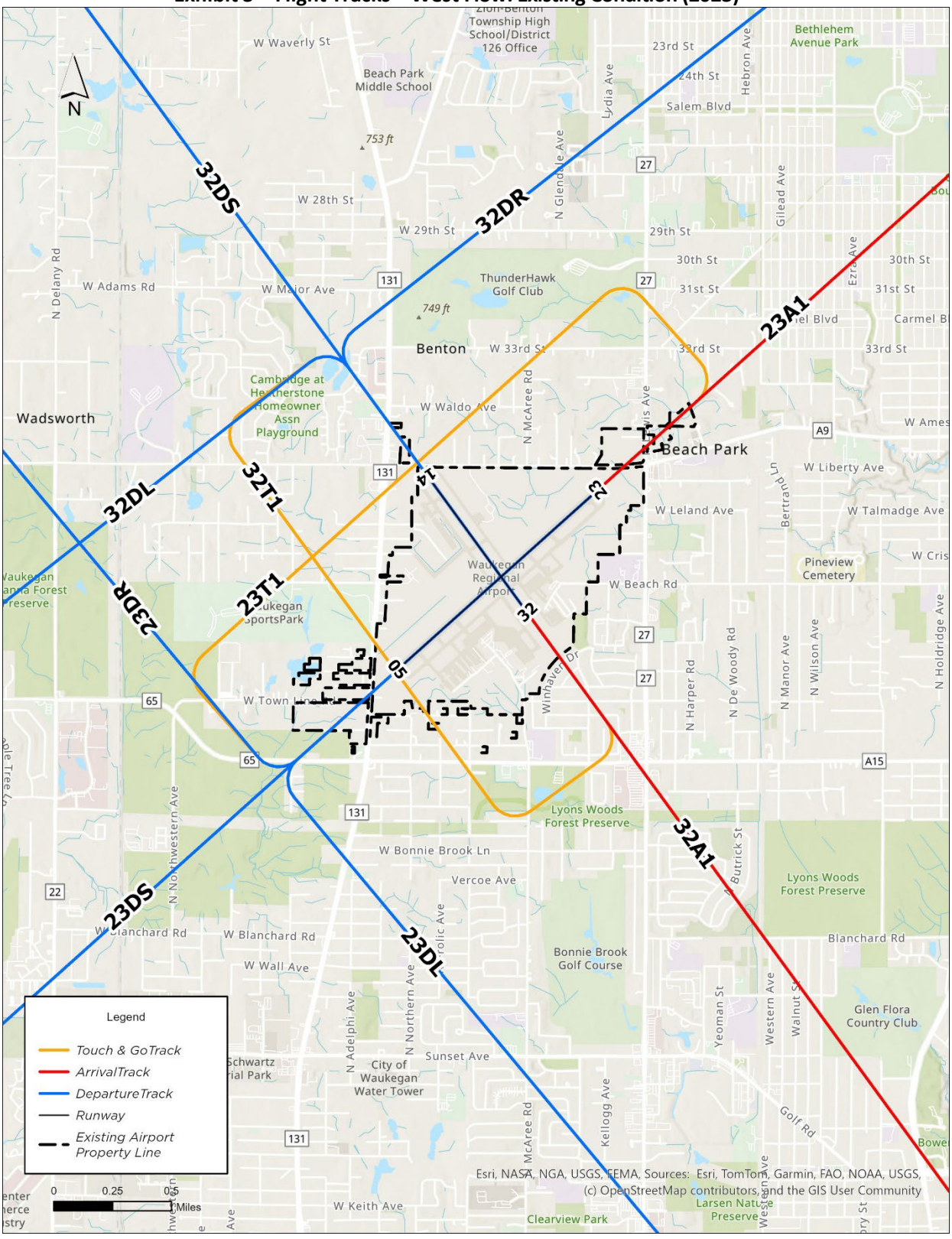
Note: L = left, R = right, and S = straight.
Source: CMT 2025.

Exhibit 2 – Flight Tracks – East Flow: Existing Condition (2023)



Source: CMT 2025.

Exhibit 3 – Flight Tracks – West Flow: Existing Condition (2023)

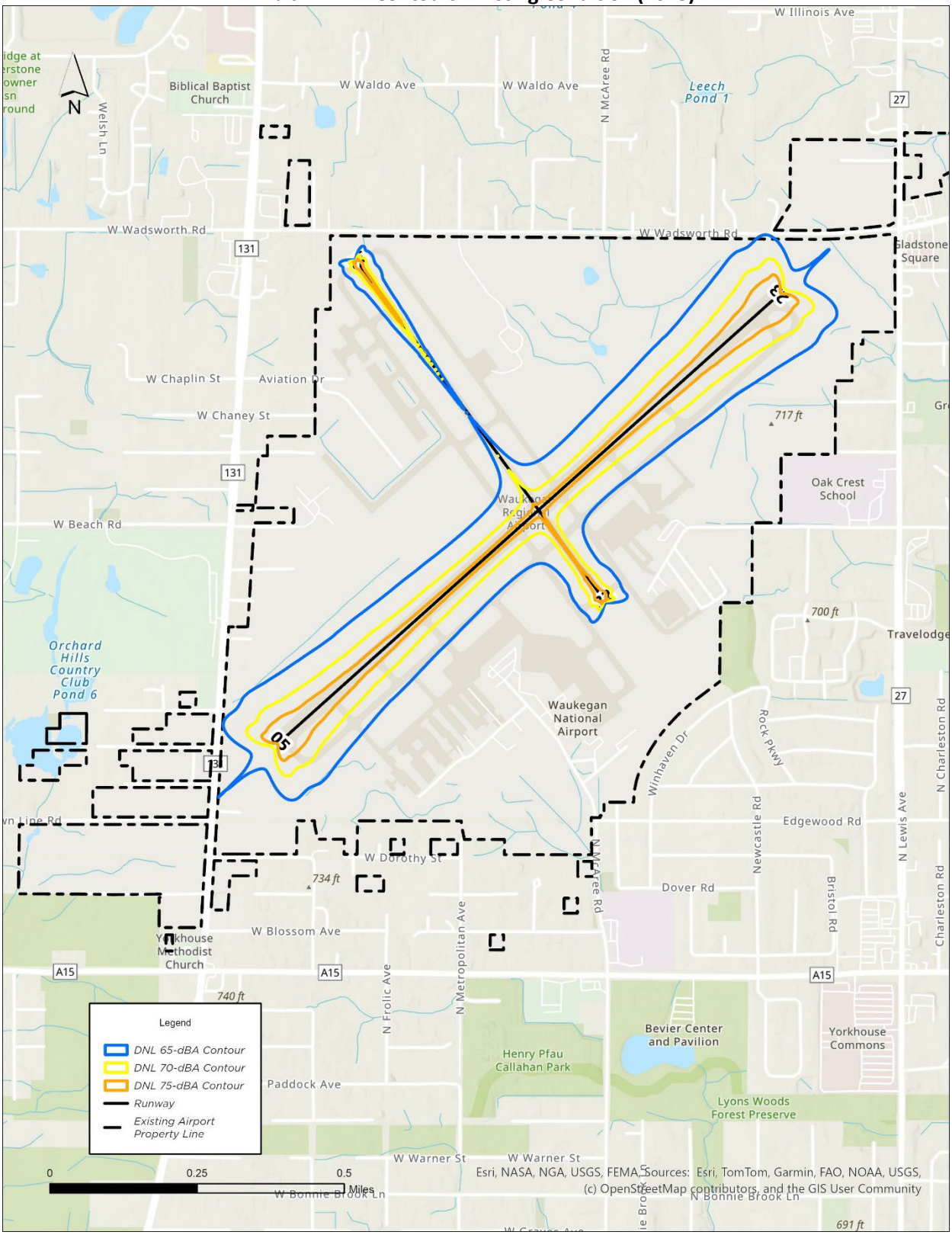


Source: CMT 2025.

DNL Contours

Exhibit 4 depicts the 2023 Existing Condition DNL 65-, 70-, and 75-dBA contours. As shown, the limit of the DNL 65-dBA and greater contours remain within airport property or over property in transportation use (i.e., roadways). Within the contours, there are no residences or other non-compatible land uses.

Exhibit 4 – DNL Contours: Existing Condition (2023)



Source: CMT 2025.

No Action Alternative: 2029

Runway Configuration/Utilization and Flight Tracks

No changes to the runway configuration, utilization of the runways, and flight tracks are expected at UGN in the year 2029 with the No Action Alternative from the configuration used to evaluate the 2023 Existing Condition.

Aircraft Fleet Mix and Operations

The 2029 No Action Alternative aircraft fleet mix and operations are based upon UGN's Forecast Working Paper (FWP) prepared in June 2025. In the year 2029, it is forecast that there would be approximately 148 AAD operations. **Table 6** provides the aircraft fleet mix with AAD operations by aircraft type, category, and time-of-day.

Table 6 - Annual Average Day (AAD) Aircraft Operations (2029)

Aircraft Type	Arrivals		Departures		Touch & Go		Total Operations (AAD)
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
Jet							
ASTR	0.011	0.000	0.011	0.000	0.000	0.000	0.021
BE40	0.259	0.005	0.275	0.000	0.000	0.000	0.539
C25A	0.053	0.000	0.053	0.000	0.000	0.000	0.106
C25B	0.349	0.011	0.354	0.011	0.000	0.000	0.724
C25C	0.026	0.000	0.026	0.000	0.000	0.000	0.053
C501	0.005	0.000	0.005	0.000	0.000	0.000	0.011
C525	0.042	0.005	0.048	0.000	0.000	0.000	0.095
C550	0.069	0.000	0.063	0.005	0.000	0.000	0.137
C560	0.261	0.011	0.250	0.021	0.000	0.000	0.543
C56X	0.835	0.011	0.814	0.026	0.000	0.000	1.687
C650	0.042	0.000	0.042	0.000	0.000	0.000	0.085
C680	0.444	0.026	0.423	0.048	0.000	0.000	0.941
C68A	1.200	0.021	1.158	0.058	0.000	0.000	2.438
C700	0.365	0.021	0.349	0.026	0.000	0.000	0.761
C750	0.412	0.026	0.423	0.021	0.000	0.000	0.883
CL30	1.718	0.095	1.718	0.079	0.000	0.000	3.611
CL35	0.005	0.000	0.000	0.000	0.000	0.000	0.005
CL60	0.354	0.005	0.349	0.005	0.000	0.000	0.714
CRJ2	0.021	0.000	0.021	0.000	0.000	0.000	0.042
E135	0.005	0.000	0.005	0.000	0.000	0.000	0.011
E35L	0.063	0.005	0.063	0.005	0.000	0.000	0.137
E50P	0.011	0.000	0.011	0.000	0.000	0.000	0.021

Table 6 - Annual Average Day (AAD) Aircraft Operations (2029)							
Aircraft Type	Arrivals		Departures		Touch & Go		Total Operations (AAD)
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
E545	0.323	0.011	0.338	0.000	0.000	0.000	0.672
E550	0.106	0.000	0.106	0.000	0.000	0.000	0.212
E55P	0.582	0.037	0.603	0.016	0.000	0.000	1.237
F2TH	2.401	0.026	2.041	0.381	0.000	0.000	4.849
F900	0.518	0.048	0.502	0.058	0.000	0.000	1.126
FA20	0.016	0.000	0.016	0.000	0.000	0.000	0.032
FA50	0.037	0.005	0.048	0.000	0.000	0.000	0.090
FA7X	0.048	0.000	0.048	0.000	0.000	0.000	0.095
G150	0.037	0.000	0.037	0.000	0.000	0.000	0.074
G280	0.740	0.079	0.740	0.079	0.000	0.000	1.639
GA5C	0.180	0.011	0.190	0.000	0.000	0.000	0.381
GA6C	0.735	0.079	0.714	0.111	0.000	0.000	1.639
GALX	0.032	0.000	0.037	0.000	0.000	0.000	0.069
GL5T	0.338	0.011	0.328	0.021	0.000	0.000	0.698
GL7T	0.005	0.005	0.011	0.000	0.000	0.000	0.021
GLEX	0.169	0.026	0.190	0.005	0.000	0.000	0.391
GLF4	0.735	0.021	0.735	0.032	0.000	0.000	1.523
GLF5	2.155	0.190	2.160	0.196	0.000	0.000	4.701
GLF6	0.656	0.037	0.650	0.042	0.000	0.000	1.385
H25B	0.286	0.026	0.307	0.000	0.000	0.000	0.619
H25C	0.021	0.000	0.021	0.000	0.000	0.000	0.042
HA4T	0.016	0.000	0.016	0.000	0.000	0.000	0.032
HDJT	0.016	0.000	0.016	0.000	0.000	0.000	0.032
LJ31	0.005	0.000	0.005	0.000	0.000	0.000	0.011
LJ35	0.005	0.000	0.005	0.000	0.000	0.000	0.011
LJ40	0.005	0.000	0.005	0.000	0.000	0.000	0.011
LJ45	0.883	0.042	0.915	0.021	0.000	0.000	1.861
LJ55	0.005	0.000	0.005	0.000	0.000	0.000	0.011
LJ60	0.137	0.000	0.132	0.005	0.000	0.000	0.275
PC24	0.079	0.000	0.079	0.000	0.000	0.000	0.159
PRM1	0.011	0.000	0.011	0.000	0.000	0.000	0.021
SF50	0.079	0.000	0.079	0.000	0.000	0.000	0.159
WW24	0.000	0.005	0.005	0.000	0.000	0.000	0.011

Table 6 - Annual Average Day (AAD) Aircraft Operations (2029)							
Aircraft Type	Arrivals		Departures		Touch & Go		Total Operations (AAD)
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
Piston (Consolidated)							
BE36	0.822	0.042	0.801	0.063	0.000	0.000	1.728
C152	2.670	0.159	2.913	0.016	0.000	0.000	5.758
C172	6.363	0.143	6.450	0.060	45.213	0.457	58.686
C182	1.829	0.069	1.856	0.021	0.000	0.000	3.775
BE55	0.777	0.011	0.783	0.005	0.000	0.000	1.576
DA40	2.215	0.032	2.226	0.000	0.000	0.000	4.473
DV20	5.139	0.095	5.208	0.032	0.000	0.000	10.475
M20P	0.678	0.000	0.674	0.000	0.673	0.000	2.025
P28A	3.136	0.143	3.289	0.053	0.000	0.000	6.620
PA32	0.677	0.016	0.656	0.026	0.000	0.000	1.375
PA44	0.333	0.002	0.333	0.000	3.530	0.000	4.198
RV12	1.095	0.048	1.126	0.026	0.000	0.000	2.295
SR22	2.649	0.074	2.675	0.048	0.000	0.000	5.446
Turboprop							
BE10	0.095	0.000	0.100	0.000	0.000	0.000	0.196
BE20	0.213	0.000	0.219	0.000	0.000	0.000	0.432
BE30	0.005	0.000	0.005	0.000	0.000	0.000	0.011
BE9L	0.005	0.000	0.005	0.000	0.000	0.000	0.011
C30J	0.058	0.000	0.058	0.000	0.000	0.000	0.117
C208	0.000	0.005	0.000	0.005	0.000	0.000	0.011
C425	0.005	0.000	0.005	0.000	0.000	0.000	0.011
E120	0.005	0.000	0.005	0.000	0.000	0.000	0.011
MU2	0.058	0.000	0.053	0.000	0.000	0.000	0.111
PC12	0.074	0.000	0.074	0.000	0.000	0.000	0.148
SW3	0.005	0.000	0.005	0.000	0.000	0.000	0.011
SW4	0.005	0.000	0.005	0.000	0.000	0.000	0.011
T34P	0.037	0.000	0.032	0.000	0.000	0.000	0.069
TBM7	0.069	0.000	0.069	0.000	0.000	0.000	0.137
TBM8	0.005	0.000	0.000	0.000	0.000	0.000	0.005
TEX2	0.030	0.000	0.030	0.000	0.000	0.000	0.061
TBM9	0.016	0.000	0.021	0.000	0.000	0.000	0.037
						Total	**147.469**

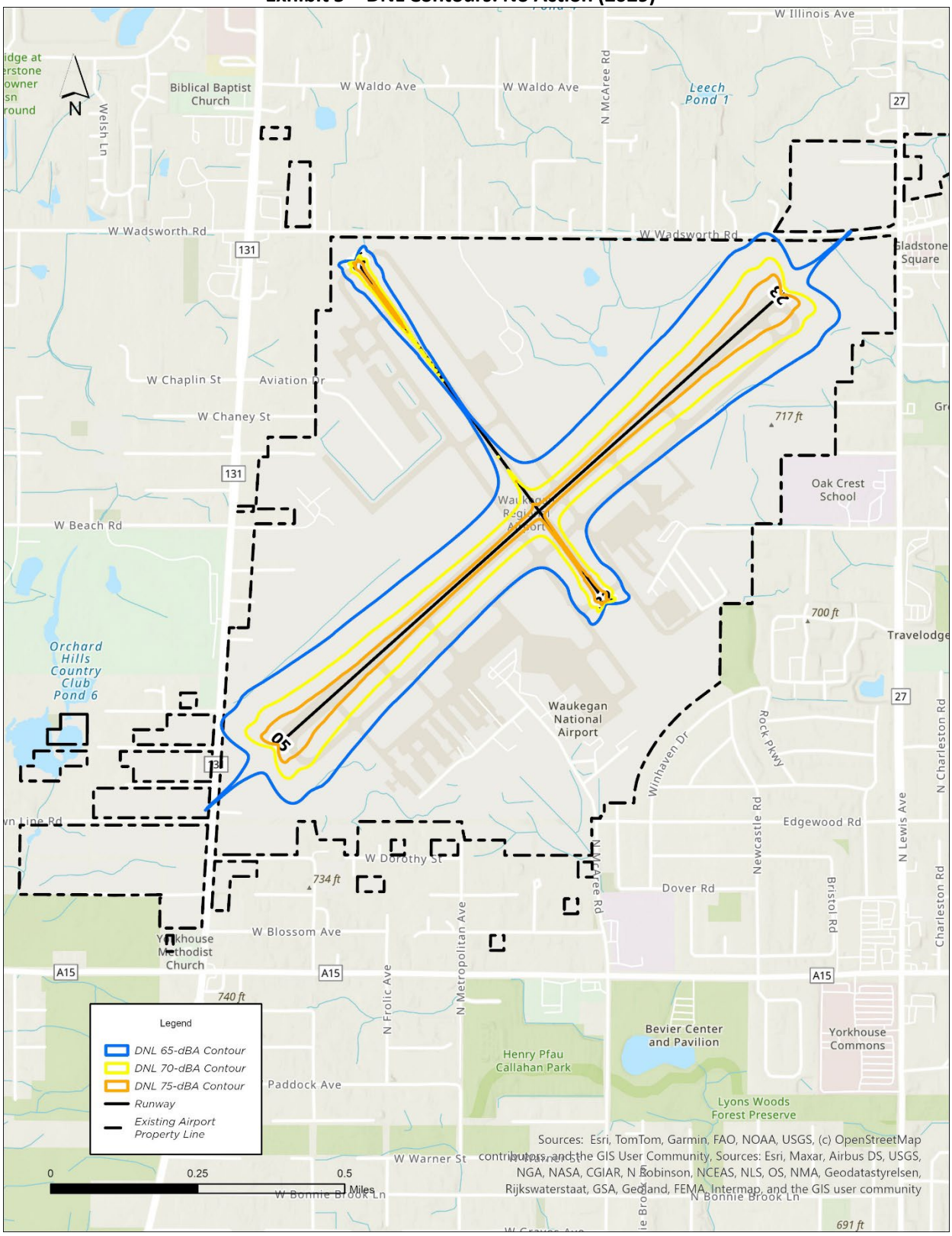
Notes: Daytime Hours = 07:00AM to 09:59PM. Nighttime Hours = 10:00PM to 06:59AM.; Source: CMT 2025.

DNL Contours

Exhibit 5 depicts the 2029 No Action Alternative DNL 65-, 70-, and 75-dBA contours. As shown, the limit of the DNL 65-dBA and greater contours remain within airport property or over property in transportation use. Within the contours, there are no residences or other non-compatible land uses.

.

Exhibit 5 – DNL Contours: No Action (2029)



Source: CMT 2025.

Proposed Action Alternative: 2029

Runway Configuration

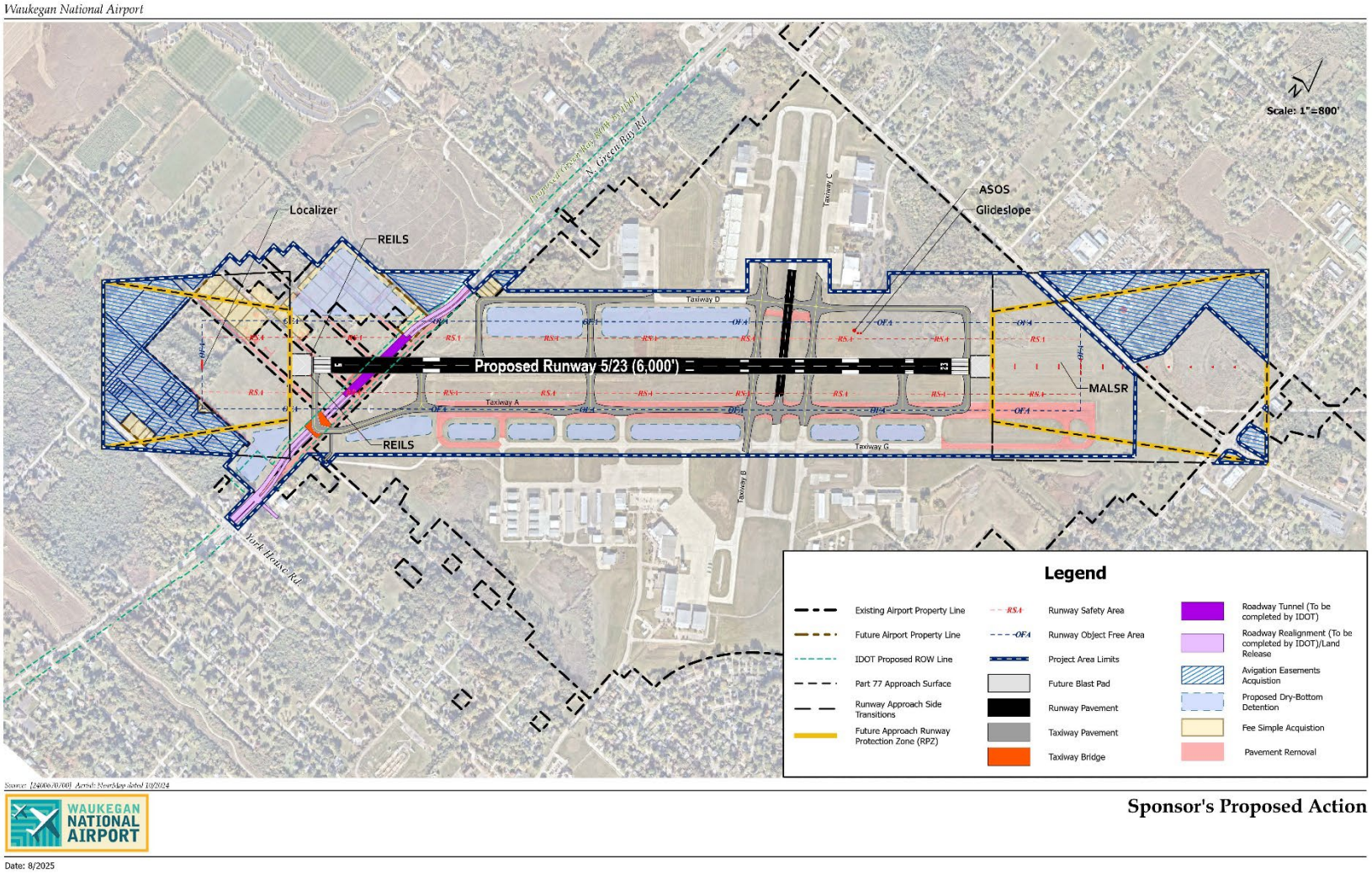
The Proposed Action is the construction and operation of a new replacement Runway 05/23, which is like the existing runway, but shifted approximately 400 feet southwest of the existing location. **Table 7** provides the runway dimensions for the Proposed Action and **Exhibit 6** depicts the Proposed Action runway configuration.

Table 7 – Runway Dimensions: Proposed Action (2029)

Runway Numerals	Runway Length (ft)	Runway Width (ft)
05/23	6,000	150
14/32	3,750	75

Source: CMT 2025.

Exhibit 6 – Airport Layout: Proposed Action



Source: CMT 2025

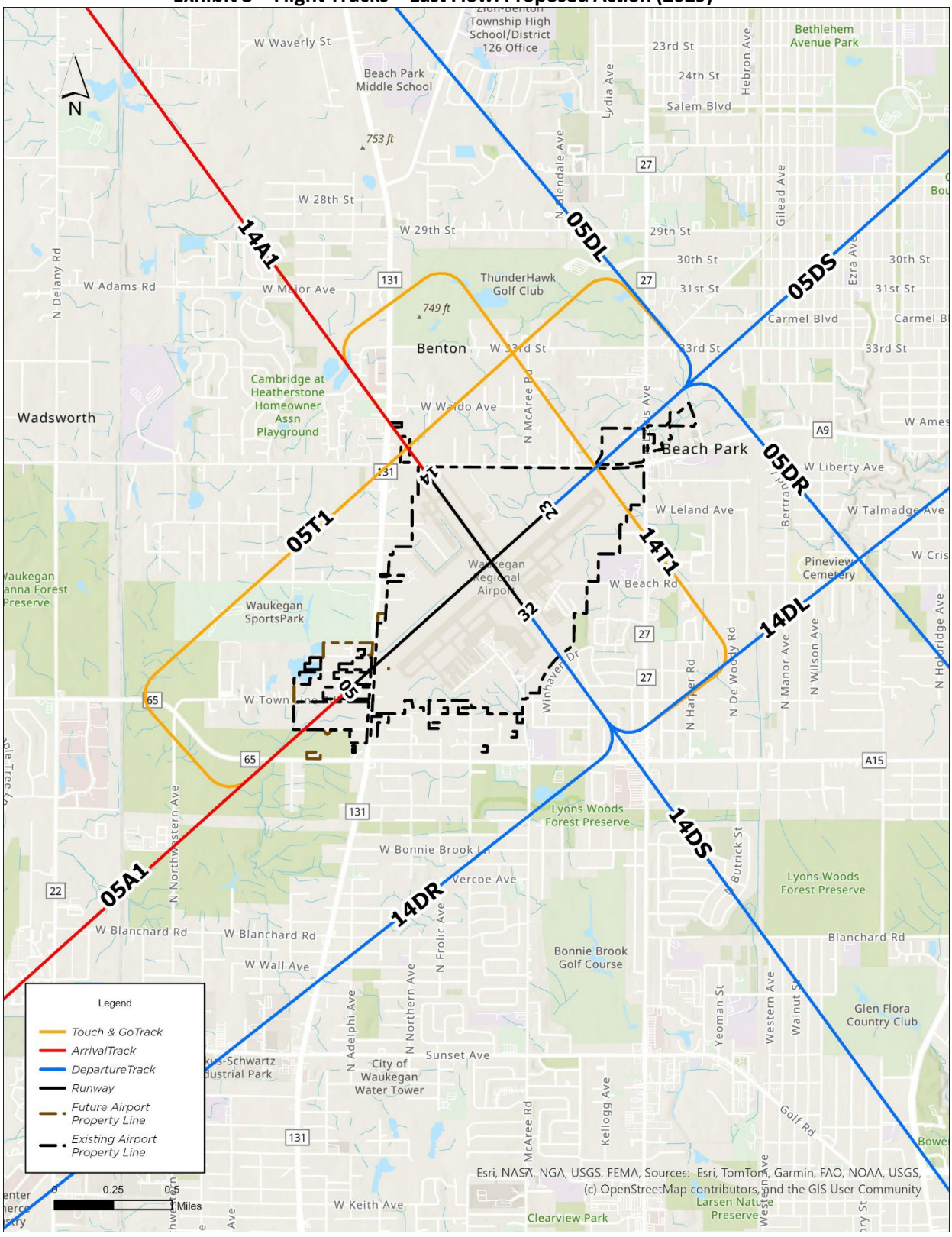
Aircraft Fleet Mix/Operations and Runway Utilization

For evaluation of the Proposed Action Alternative in the year 2029, the aircraft fleet mix, number of aircraft operations, and use of the runways were assumed to be the same as the 2029 No Action Alternative.

Flight Tracks

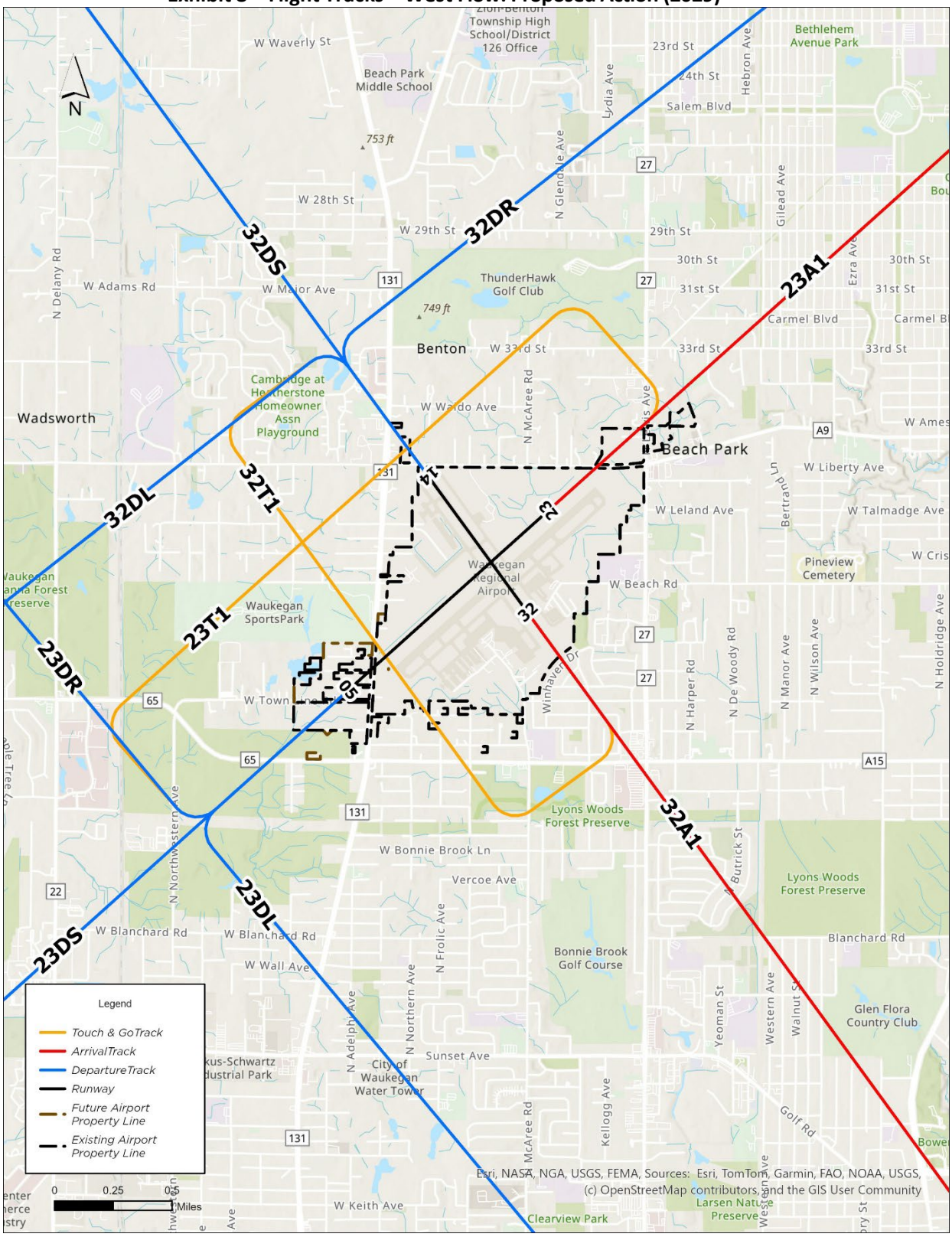
The same flight track patterns used for the 2029 No Action Alternative were used to evaluate the Proposed Action, but the tracks were shifted to align with the ends of the proposed runway. **Exhibits 7** and **8** depict the modeled Proposed Action Alternative flight tracks.

Exhibit 8 – Flight Tracks – East Flow: Proposed Action (2029)



Source: CMT 2025.

Exhibit 8 – Flight Tracks – West Flow: Proposed Action (2029)



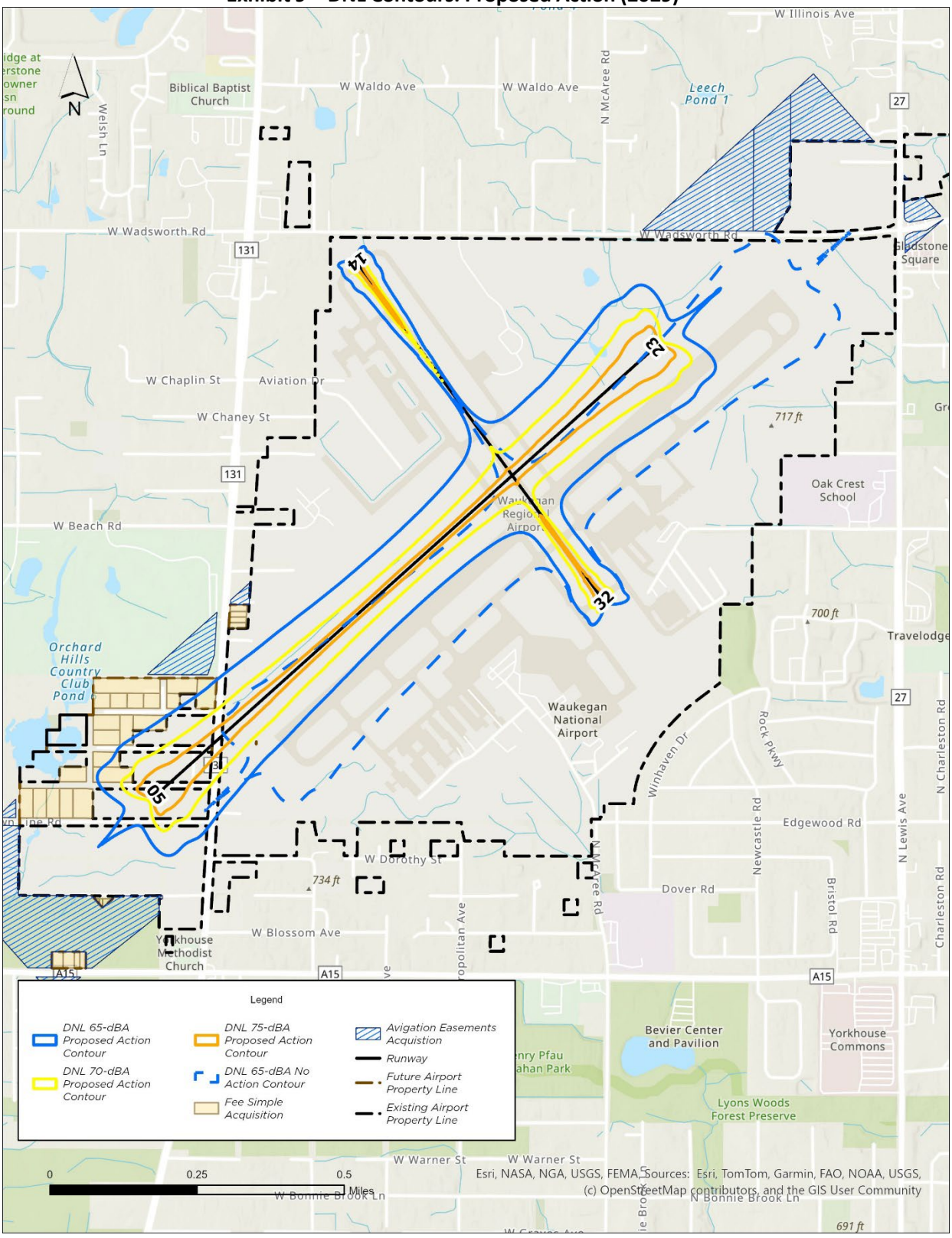
Source: CMT 2025.

DNL Contours

Exhibit 9 depicts the 2029 Proposed Action Alternative DNL 65-, 70-, and 75-dBA contours, existing and future airport property, and the 2029 No Action Alternative DNL 65-dBA contour for comparative purposes. As shown, the limit of the Proposed Action DNL 65-dBA contour would be within the future airport boundary or transportation land use (primarily Green Bay Road). Within the Proposed Action DNL 65-dBA contour and greater, west of Runway End 05, there are 6 residential properties. However, as part of the Proposed Action these properties are identified for acquisition and would be within the future airport boundary.

Also, within the Proposed Action 65- to 70-dBA contours, there is a small parcel of land west of Runway End 05 that is owned by the Waukegan Park District but is not accessible to the public, nor utilized as a park. With the Proposed Action, this small parcel will be acquired by UGN and then part of the parcel will be sold to the Illinois Department of Transportation for the realignment of Green Bay Road (Illinois 131), and the remaining portion will be airport property.

Exhibit 9 – DNL Contours: Proposed Action (2029)



Source: CMT 2025.

No Action Alternative: 2034

Runway Configuration/Utilization and Flight Tracks

No changes to the runway configuration, utilization of the runways, and flight tracks are expected at UGN in the year 2034 with the No Action Alternative from the configuration used to evaluate the 2023 Existing Condition.

Aircraft Fleet Mix and Operations

The 2034 No Action Alternative aircraft fleet mix and operations are based upon UGN's FWP prepared in June 2025. In 2034, it is forecast that there would be approximately 150 AAD operations. **Table 8** provides the aircraft fleet mix with AAD operations by aircraft type, category, and time-of-day.

Table 8 – Annual Average Day (AAD) Aircraft Operations (2034)

Aircraft Type	Arrivals		Departures		Touch & Go		Total Operations (AAD)
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
Jet							
ASTR	0.011	0.000	0.011	0.000	0.000	0.000	0.021
BE40	0.263	0.005	0.279	0.000	0.000	0.000	0.547
C25A	0.054	0.000	0.054	0.000	0.000	0.000	0.107
C25B	0.354	0.011	0.360	0.011	0.000	0.000	0.735
C25C	0.027	0.000	0.027	0.000	0.000	0.000	0.054
C501	0.005	0.000	0.005	0.000	0.000	0.000	0.011
C525	0.043	0.005	0.048	0.000	0.000	0.000	0.097
C550	0.070	0.000	0.064	0.005	0.000	0.000	0.140
C560	0.265	0.011	0.254	0.021	0.000	0.000	0.551
C56X	0.848	0.011	0.826	0.027	0.000	0.000	1.712
C650	0.043	0.000	0.043	0.000	0.000	0.000	0.086
C680	0.451	0.027	0.429	0.048	0.000	0.000	0.955
C68A	1.218	0.021	1.175	0.059	0.000	0.000	2.474
C700	0.370	0.021	0.354	0.027	0.000	0.000	0.773
C750	0.419	0.027	0.429	0.021	0.000	0.000	0.896
CL30	1.744	0.097	1.744	0.080	0.000	0.000	3.665
CL35	0.005	0.000	0.000	0.000	0.000	0.000	0.005
CL60	0.360	0.005	0.354	0.005	0.000	0.000	0.724
CRJ2	0.021	0.000	0.021	0.000	0.000	0.000	0.043
E135	0.005	0.000	0.005	0.000	0.000	0.000	0.011
E35L	0.064	0.005	0.064	0.005	0.000	0.000	0.140
E50P	0.011	0.000	0.011	0.000	0.000	0.000	0.021

Table 8 – Annual Average Day (AAD) Aircraft Operations (2034)							
Aircraft Type	Arrivals		Departures		Touch & Go		Total Operations (AAD)
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
E545	0.327	0.011	0.343	0.000	0.000	0.000	0.682
E550	0.107	0.000	0.107	0.000	0.000	0.000	0.215
E55P	0.590	0.038	0.612	0.016	0.000	0.000	1.256
F2TH	2.436	0.027	2.071	0.386	0.000	0.000	4.921
F900	0.526	0.048	0.510	0.059	0.000	0.000	1.143
FA20	0.016	0.000	0.016	0.000	0.000	0.000	0.032
FA50	0.038	0.005	0.048	0.000	0.000	0.000	0.091
FA7X	0.048	0.000	0.048	0.000	0.000	0.000	0.097
G150	0.038	0.000	0.038	0.000	0.000	0.000	0.075
G280	0.751	0.080	0.751	0.080	0.000	0.000	1.664
GA5C	0.182	0.011	0.193	0.000	0.000	0.000	0.386
GA6C	0.746	0.080	0.724	0.113	0.000	0.000	1.664
GALX	0.032	0.000	0.038	0.000	0.000	0.000	0.070
GL5T	0.343	0.011	0.333	0.021	0.000	0.000	0.708
GL7T	0.005	0.005	0.011	0.000	0.000	0.000	0.021
GLEX	0.172	0.027	0.193	0.005	0.000	0.000	0.397
GLF4	0.746	0.021	0.746	0.032	0.000	0.000	1.545
GLF5	2.187	0.193	2.192	0.199	0.000	0.000	4.771
GLF6	0.665	0.038	0.660	0.043	0.000	0.000	1.406
H25B	0.290	0.027	0.311	0.000	0.000	0.000	0.628
H25C	0.021	0.000	0.021	0.000	0.000	0.000	0.043
HA4T	0.016	0.000	0.016	0.000	0.000	0.000	0.032
HDJT	0.016	0.000	0.016	0.000	0.000	0.000	0.032
LJ31	0.005	0.000	0.005	0.000	0.000	0.000	0.011
LJ35	0.005	0.000	0.005	0.000	0.000	0.000	0.011
LJ40	0.005	0.000	0.005	0.000	0.000	0.000	0.011
LJ45	0.896	0.043	0.928	0.021	0.000	0.000	1.889
LJ55	0.005	0.000	0.005	0.000	0.000	0.000	0.011
LJ60	0.140	0.000	0.134	0.005	0.000	0.000	0.279
PC24	0.080	0.000	0.080	0.000	0.000	0.000	0.161
PRM1	0.011	0.000	0.011	0.000	0.000	0.000	0.021
SF50	0.080	0.000	0.080	0.000	0.000	0.000	0.161
WW24	0.000	0.005	0.005	0.000	0.000	0.000	0.011

Table 8 – Annual Average Day (AAD) Aircraft Operations (2034)							
Aircraft Type	Arrivals		Departures		Touch & Go		Total Operations (AAD)
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
Piston (Consolidated)							
BE36	0.834	0.043	0.813	0.064	0.000	0.000	1.754
C152	2.710	0.161	2.957	0.016	0.000	0.000	5.844
C172	6.458	0.145	6.546	0.061	45.887	0.464	59.561
C182	1.857	0.070	1.884	0.021	0.000	0.000	3.832
BE55	0.789	0.011	0.794	0.005	0.000	0.000	1.599
DA40	2.248	0.032	2.259	0.000	0.000	0.000	4.540
DV20	5.216	0.097	5.286	0.032	0.000	0.000	10.631
M20P	0.688	0.000	0.684	0.000	0.683	0.000	2.055
P28A	3.182	0.145	3.338	0.054	0.000	0.000	6.719
PA32	0.687	0.016	0.665	0.027	0.000	0.000	1.395
PA44	0.338	0.002	0.338	0.000	3.582	0.000	4.261
RV12	1.111	0.048	1.143	0.027	0.000	0.000	2.329
SR22	2.689	0.075	2.715	0.048	0.000	0.000	5.527
Turboprop							
BE10	0.097	0.000	0.102	0.000	0.000	0.000	0.199
BE20	0.217	0.000	0.222	0.000	0.000	0.000	0.438
BE30	0.005	0.000	0.005	0.000	0.000	0.000	0.011
BE9L	0.005	0.000	0.005	0.000	0.000	0.000	0.011
C30J	0.059	0.000	0.059	0.000	0.000	0.000	0.118
C208	0.000	0.005	0.000	0.005	0.000	0.000	0.011
C425	0.005	0.000	0.005	0.000	0.000	0.000	0.011
E120	0.005	0.000	0.005	0.000	0.000	0.000	0.011
MU2	0.059	0.000	0.054	0.000	0.000	0.000	0.113
PC12	0.075	0.000	0.075	0.000	0.000	0.000	0.150
SW3	0.005	0.000	0.005	0.000	0.000	0.000	0.011
SW4	0.005	0.000	0.005	0.000	0.000	0.000	0.011
T34P	0.038	0.000	0.032	0.000	0.000	0.000	0.070
TBM7	0.070	0.000	0.070	0.000	0.000	0.000	0.140
TBM8	0.005	0.000	0.000	0.000	0.000	0.000	0.005
TEX2	0.031	0.000	0.031	0.000	0.000	0.000	0.062
TBM9	0.016	0.000	0.021	0.000	0.000	0.000	0.038
						Total	**149.666**

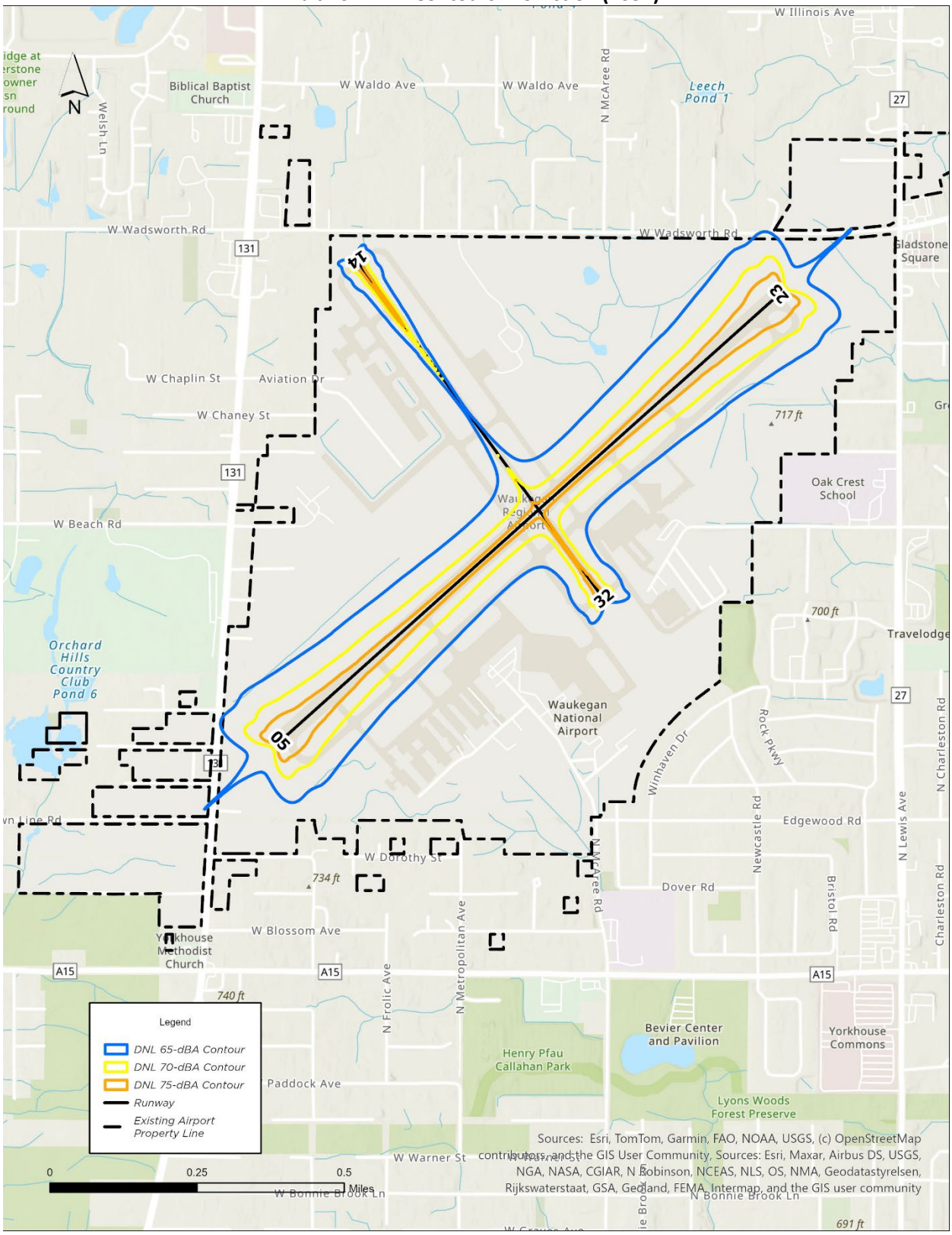
Notes: Daytime Hours = 07:00AM to 09:59PM. Nighttime Hours = 10:00PM to 06:59AM.; Source: CMT 2025.

DNL Contours

Exhibit 10 depicts the 2034 No Action Alternative DNL 65-, 70-, and 75-dBA contours. As shown, the limit of the DNL 65-dBA and greater contours remain within airport property or over property in transportation use. Within the contours, there are no residences or other non-compatible land uses.

.

Exhibit 10 – DNL Contours: No Action (2034)



Source: CMT 2025.

Proposed Action Alternative: 2034

Runway Configuration/Utilization, Aircraft Fleet Mix/Operations, and Flight Tracks

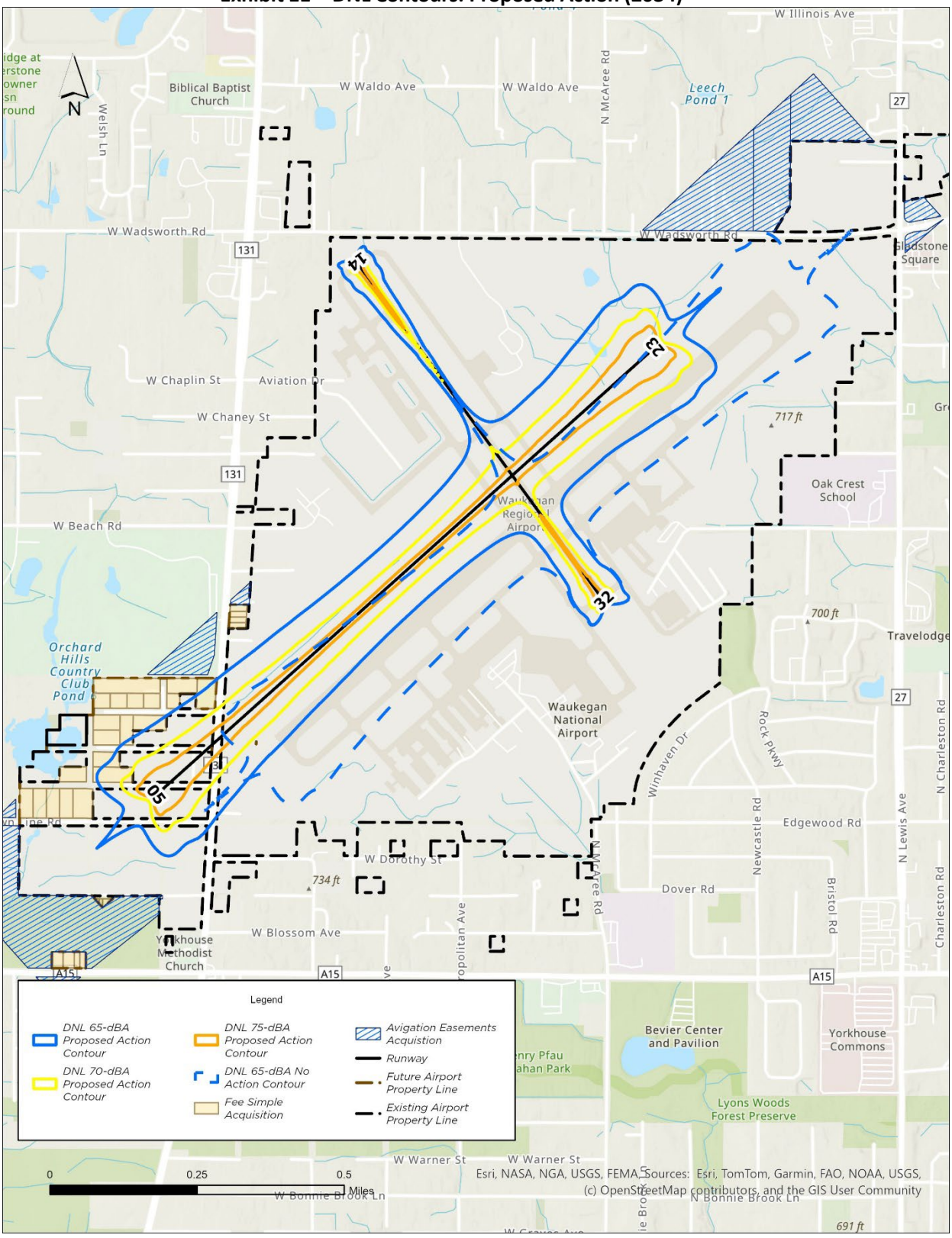
No additional changes to the runway configuration, use of the runways, aircraft fleet mix or number of operations, and flight tracks are expected at UGN in the year 2034 with the Proposed Action Alternative from the data used to evaluate the 2029 Proposed Action Alternative.

DNL Contours

Exhibit 11 depicts the 2034 Proposed Action Alternative DNL 65-, 70-, and 75-dBA contours, existing and future airport property, and the 2034 No Action Alternative DNL 65-dBA contour for comparative purposes. As shown, the limit of the DNL 65-dBA and greater contours remain within airport property or property or transportation land use. Within the DNL 65-DBA contour, west of Runway End 05, there are residential properties. However, as part of the Proposed Action these properties are identified for acquisition and would transition to an aircraft noise compatible use.

Also, within the Proposed Action 65- to 70-dBA contours, there is a small parcel of land west of Runway End 05 that is owned by the Waukegan Park District but is not accessible to the public, nor utilized as a park. As mentioned previously, this small parcel will be acquired by UGN and transitioned to an aircraft noise compatible land use.

Exhibit 11 – DNL Contours: Proposed Action (2034)



Source: CMT 2025.

SIGNIFICANCE THRESHOLD

A significant noise impact is defined in Order 1050.1G if the action would result in noise exposure from impulsive noise sources (e.g., sonic booms) that meet or exceed 60 CDNL – equivalent to DNL 65 dBA. Or if the action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe. For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB.

MITIGATION

Because the Proposed Action would not result in any aircraft noise impacts, no mitigation is required.

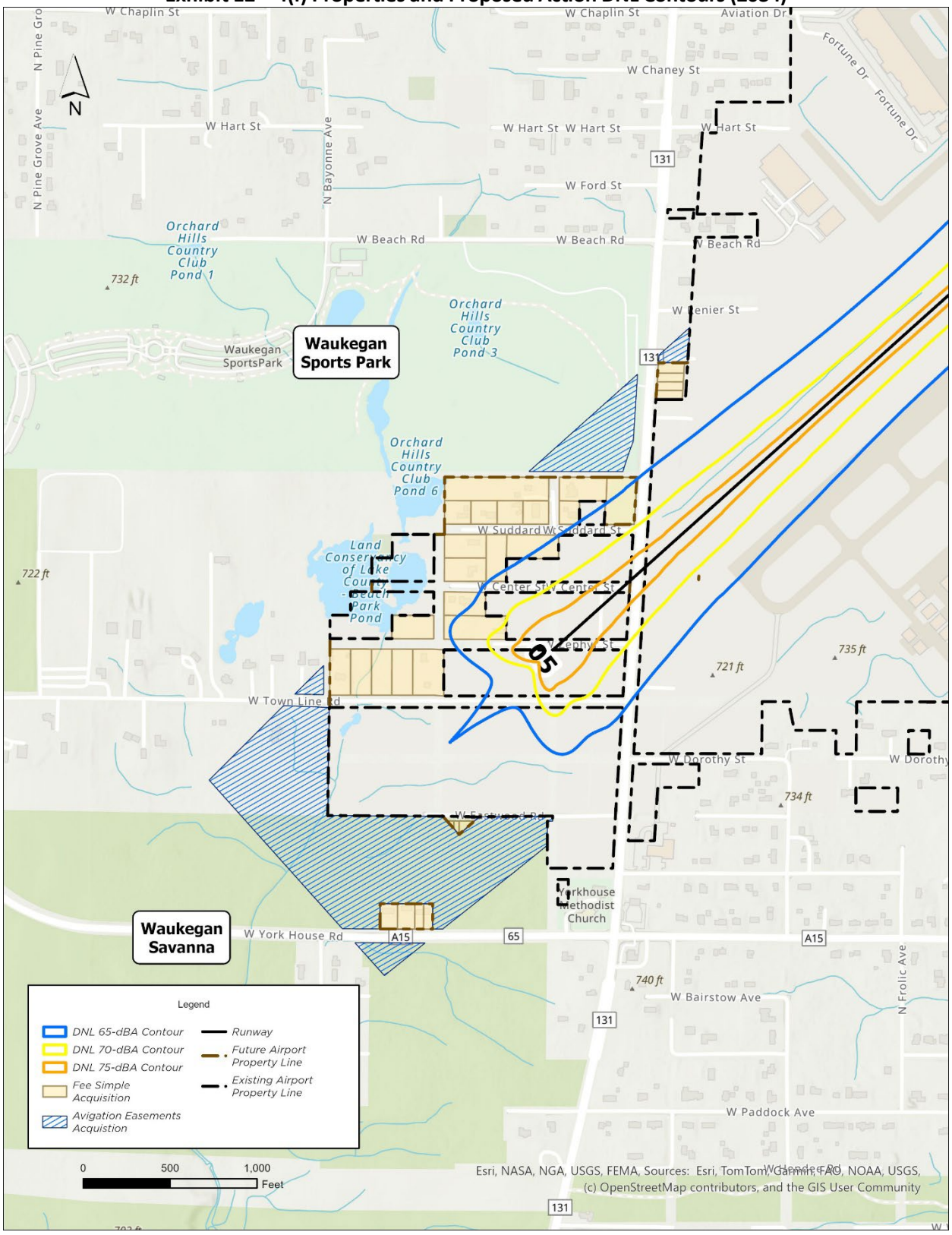
DEPARTMENT OF TRANSPORTATION ACT SECTION 303 (4(f) PROPERTIES)

Section 4(f) of the United States Department of Transportation (DOT) Act of 1966 (now codified at 49 United States Code § 303) protects significant publicly owned parks, recreational areas, wildlife and waterfowl refuges, and public and private historic sites. Section 4(f) provides that the Secretary of Transportation may approve a transportation program or project requiring the use of such land if there are no feasible and prudent alternatives to the use. Section 4(f) only applies to agencies within the U.S. DOT, such as the FAA.

The nearby Waukegan Sports Park and the Waukegan Savanna Forest Preserve are both publicly owned by the Waukegan Park District, and the Lake County Forest Preserve District, respectively. These two areas are considered 4(f) properties and are located just west and southwest of UGN.

The future DNL 65-dBA or greater contours do not encompass any part of the Waukegan Sports Park or Savanna. Thus, these two 4(f) properties are considered compatible with aircraft noise. **Exhibit 12** depicts the locations of the Waukegan Sports Park and Savanna in relation to UGN.

Exhibit 12 – 4(f) Properties and Proposed Action DNL Contours (2034)

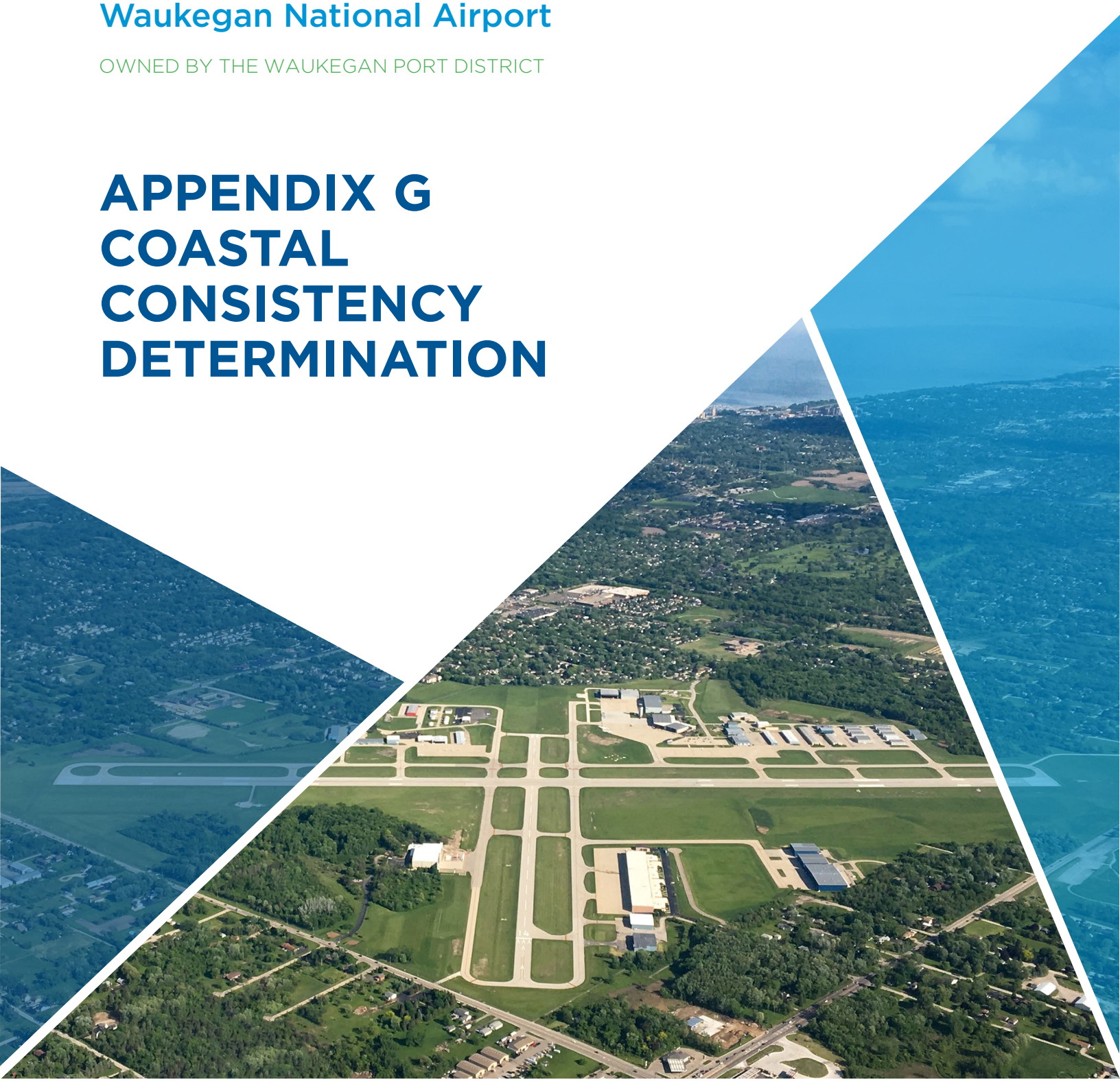


Source: CMT 2025.

Waukegan National Airport

OWNED BY THE WAUKEGAN PORT DISTRICT

APPENDIX G
COASTAL CONSISTENCY DETERMINATION



WAUKEGAN NATIONAL AIRPORT

PREPARED BY

CMT

Illinois Department of Natural Resources
JB Pritzker, Governor • Natalie Phelps Finnie, Director
One Natural Resources Way • Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Office of Water Resources, Michael A. Bilandic Building, 160 N. LaSalle St., S-703, Chicago, IL 60601

May 1, 2026

Craig Pullins
Environmental Protection Specialist
Chicago Airports District Office
Federal Aviation Administration
2300 East Devon Avenue
Des Plaines, IL 60018

RE: IDNR/CMP Federal Consistency Determination IFC2026006 by the Federal Aviation Administration for the Waukegan National Airport (UGN), Replacement Runway 5/23 Program, in Waukegan, Lake County, Illinois

Dear Mr. Pullins,

Thank you for the federal consistency certificate dated March 27, 2026 for the above referenced project. Department staff have reviewed the determination and concur that the proposed activity complies with the enforceable policies of the ICMP and will be conducted in a manner consistent with the ICMP.

This determination applies only to the ICMP and does not exempt you from obtaining any other required federal, state, or local authorizations.

If you have any questions, please contact me at eric.otto@illinois.gov.

Sincerely,

Eric L. Otto, PE, CPESC, CPSWQ
Senior Water Resources Engineer
Lake Michigan Programs