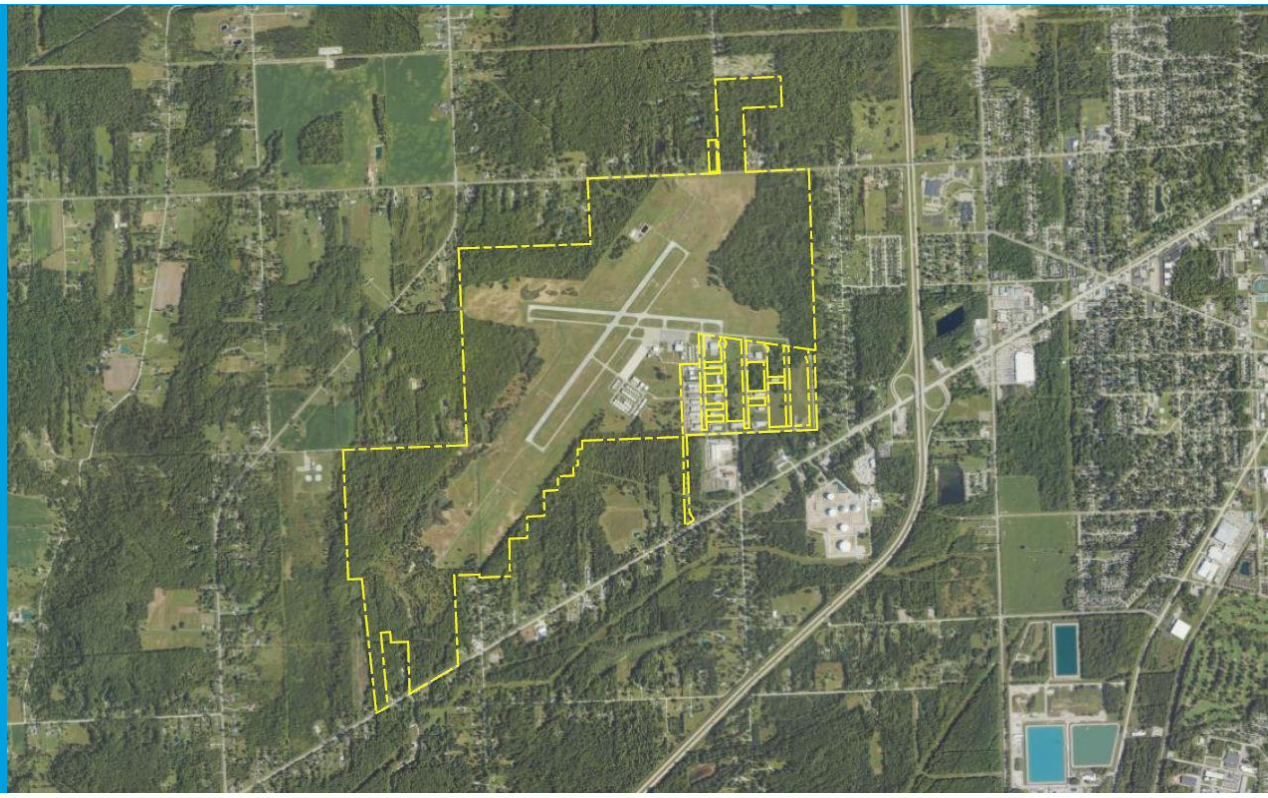
Appendix C – Biological Resources

PREPARED BY

Mead & Hunt

BIOLOGICAL RESOURCES REPORT



ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN)
ENVIRONMENTAL ASSESSMENT FOR RUNWAY 4/22 APPROACH CLEARING
PROJECT NUMBER 1937800-210771.01

FEBRUARY 2025

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Executive Summary

St. Clair International Airport is a public-use general aviation airport located approximately three miles west of the City of Marysville and five miles southwest of Port Huron in St. Clair County, Michigan.

The Airport proposes to clear, grub, and grade land located off the end of Runway 4/22. The proposed action is needed to remove existing and potential obstructions identified as penetrations to the Federal Aviation Regulation (FAR) Part 77 Imaginary Surfaces, Threshold Siting Surface (TSS), Precision Approach Path Indicator (PAPI) Light Signal Clearance Surface (LSCS) and Obstacle Clearance Surface (OCS), as well as the State of Michigan Licensing Surface. Unmaintained vegetation has the potential to become obstructions to runway approaches in the future.

In support of environmental documentation for this project, field work was conducted by Mead & Hunt, Inc. (Mead & Hunt) within an Action Area over four site visits on August 16 – 23, 2022; October 3 – 7, 2022; June 6 –14, 2023; and September 25 – October 4, 2023. The Action Area is in Sections 25, 26, 35, and 36, Township 6 North, Range 16 East and in Sections 2 and 3, Township 5N, Range 16 East in Kimball and St. Clair Townships, St. Clair County, Michigan. The Action Area is located on the Smiths Creek 7.5-minute USGS topographic quadrangle and is split into two parts totaling approximately 442.75 acres. Areas on private property not examined in the field during a site visit due to access constraints were reviewed and assessed using available on-line or desktop data sources.

Proposed project

The Airport proposes to clear, grub, and grade upland areas within the approach surfaces located off the ends of Runway 4/22. Proposed project activities include the removal of trees within an area covering approximately 249 acres split over two sections of the Action Area. Removal of trees within an area approximately 167 acres in size will occur at the Runway 4 end. At the Runway 22 end, tree removals within an area approximately 82 acres in size is proposed.

Upland areas would be cleared, grubbed, and graded. Cleared upland areas would be revegetated with species that can be regularly maintained. On private land with avigation easements, identified obstructions will be removed. In wetland areas identified in Mead & Hunt's *Wetland Delineation Report* (2024), only tree clearing is proposed which would be accomplished under frozen ground conditions to minimize ground disturbance. Understory trees will remain in forested wetlands.

No prescribed burning, pesticide, or herbicide application is proposed. No instream work is proposed for the project. Construction staging areas and haul routes will be on existing roads and disturbed lands.

Listed species

A list of threatened, endangered, and candidate species was obtained through the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) database for the project (accessed January 16, 2025). Ten federally endangered, threatened, proposed endangered, or proposed threatened species are considered in this report. The Rusty Patched Bumble Bee is also reviewed in this report. A Michigan Transportation Preliminary Database search revealed no additional species to be considered at the State level. The listed species are presented below.

- Northern Long-eared Bat (*Myotis septentrionalis*)
- Indiana Bat (M*yotis sodalis*)
- Rufa Red Knot (*Calidris canutus rufa)*
- Eastern Massasauga rattlesnake (*Sistrurus catenatus*)
- Rayed Bean (*Villosa fabilis)*
- Round Hickorynut (*Obovaria subrotunda)*
- Salamander mussel (*Simpsonaias ambigua)*
- Snuffbox Mussel (*Epioblasma triquetra)*
- Monarch Butterfly (*Danaus plexippus*)
- Eastern Prairie Fringed Orchid (*Platanthera leucophaea)*
- Rusty Patched Bumble Bee (*Bombus affinis*)

No critical habitat under USFWS jurisdiction was found in the Action Area.

Effect determinations

The All-species Michigan Determination DKey (DKey) within the USFWS IPaC system, supplemented with field studies, habitat assessments, and specialized studies were used to generate effect determinations for ten species. Effect determinations are presented below.

- Eastern Massasauga rattlesnake
  - May Effect, Not Likely to Adversely Affect (NLAA)
- Northern Long-eared bat, Indiana bat, Rufa Red Knot, Rayed Bean, Round Hickorynut, Salamander mussel, Snuffbox Mussel, Monarch Butterfly, and Eastern Prairie Fringed Orchid
  - No Effect

Effect determinations developed in the Michigan DKey rest on the implementation of Conservation Measures including avoidance, seasonal restrictions, and best management practices described below.

A bat acoustic survey revealed that the federally listed Northern Long-eared and Indiana bats were unlikely to be present within the Action Area and therefore the proposed project is not likely to adversely affect these two species. The presence of State listed tricolored and little brown bats, however, is documented by the acoustic survey. USFWS guidance is to conduct project activities outside the summer roosting period for the tricolored bat (TCB) (May 15 through July 31) to minimize incidental take of these listed bats.

Based on field-based habitat assessments, a no effect determination was made by Mead & Hunt for the Rusty Patched Bumble Bee.

Conservation Measures

Avoidance measures

Selective tree removals (i.e., individual trees) will be employed to the greatest extent possible, especially in areas where the obstruction density is low or in upland areas on private property with avigation easements. In wetland areas, trees will be cut and removed but grubbing or other ground disturbance will

be avoided. A clearing analysis and plan will be developed to minimize impacts to forested wetlands such that select understory trees will remain.

Seasonal restrictions and BMPs

Tree removals will be accomplished during recommended time periods appropriate for minimizing impacts to any potential state listed bat populations. Recommendations for clearing are based on guidance provided by USFWS after review of the presence/probable absence bat survey. Tree clearing will be conducted outside of the summer roosting period for the TCB and little brown bats (May 15 through July 31).

Optimally, tree removals in wetlands will be accomplished under frozen ground conditions to minimize ground disturbance from mechanized equipment. Alternatively, wood pallets, mats or other similar materials may be used to minimize ground disturbance.

Project activities in wetlands will occur during the inactive season for the Eastern Massasauga Rattlesnake (EMR.) No hydrologic alteration to groundwater levels is anticipated and no ground disturbance will occur in wetlands. Recommended best management practices for projects within the known range of the EMR will be implemented as detailed in the Michigan Environmental Screening BMPs for the eastern massasauga.

1. Introduction

St. Clair International Airport (PHN) is a public-use general aviation airport located approximately three miles west of the City of Marysville and five miles southwest of Port Huron in St. Clair County, Michigan. The Airport is owned and operated by the County and is included in the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS). The State of Michigan designated the Airport as a Tier 1, C-II facility in the 2017 Michigan Airport System Plan (MASP).

The airport is located approximately 54 miles northeast of Detroit in Kimball and St. Clair Townships, in the Thumb region of Michigan. Interstate 94 (I-94) borders the airport on the east and south sides. Other surrounding local roads are Pickford Road on the east side of the Airport, Gratiot Ave on the south side, and Wadhams Road on the west side of the Airport. Smiths Creek Road borders the airfield on the north side with airport property extending to the north of this road. The Airport and Action Area are shown on the Project Location Map provided in **Appendix A**.

Two paved runways support aircraft operations at PHN. Runway 4/22, the primary runway, is 5,104 feet long by 100 feet wide and oriented in a northeast-southwest direction. Runway 10/28 is the crosswind runway and is 4,000 feet long and 75 feet wide, oriented in an east-west direction. The Airport is approximately 1,135 acres in size and includes a general aviation terminal building, hangars, aprons, a fixed base operator (FBO), and a Snow Removal Equipment (SRE) building.

The purpose of this evaluation is to determine if the proposed action may affect species or habitat protected under Section 7 of the Endangered Species Act of 1973 (ESA) or under Part 365 of the Michigan Natural Resources and Environmental Protection Act (1994, as amended; NREPA). The project is receiving funding from the Federal Aviation Administration (FAA), which provides the federal nexus for the project.

In support of environmental documentation for this project, field work was conducted by Mead & Hunt within an Action Area over four site visits on August 16 – 23, 2022; October 3 – 7, 2022; June 6 –14, 2023; and September 25 – October 4, 2023. The Action Area is in Sections 25, 26, 35, and 36, Township 6 North, Range 16 East and in Sections 2 and 3, Township 5N, Range 16 East in Kimball and St. Clair Townships, St. Clair County, Michigan. The Action Area is located on the Smiths Creek 7.5-minute USGS topographic quadrangle and is split into two parts totaling approximately 442.75 acres.

This report provides documentation of existing site conditions and an assessment of biological resources present within the Action Area. A plant survey for Eastern Prairie Fringed orchid was conducted during the June 2023 field visit and a presence/probable absence survey for bats documents the status of protected bats in the Action Area. No survey for other threatened and endangered species was conducted. Areas on private property were not examined in the field due to access constraints. These areas were reviewed using available on-line or desktop data sources. A parcel accessibility map is provided in **Appendix A**.

This report summarizes the results of site observations. Qualifications of field personnel are provided in **Appendix J**. Mead & Hunt staff who performed field work are:

- Brauna Hartzell, BS Biological Science, Florida State University, 1982; MS Environmental Monitoring, University of Wisconsin-Madison, 1994; 22 years wetland delineation practice.

- Kim Shannon, BS Biology, Oklahoma State University, 1994; MS Applied and Natural Science (Botany), Oklahoma State University, 1997; Botanist (14 years wetland delineation and natural resources assessment).

2. Project Setting

2.1 Airport History

The airport in its current location began operations in the early 1950s after funds were appropriated in 1944 for the purchase of an initial area covering 785 acres. In 1950, funds were appropriated for development of runways and in 1951 an administration building was constructed. St. Clair County Airport became an international airport in 1954. Twenty-three years later the 80-acre Air Industrial Park was constructed in 1977. In 1994, the Instrument Landing System (ILS) was installed. Subsequent construction projects starting in 2015 added taxiways and rehabilitated Runway 4/22 (St. Clair County, 2024).

The Airport currently has two runways, Runway 4/22 and Runway 10/28, each with full parallel taxiways. Private hangars, a general aviation terminal building, a FBO building, and maintenance facilities are available for users of the airport.

Land cover compiled from original surveyors' notes and descriptions (MNFI, 2024) shows most land at the Airport covered by Beech-Sugar Maple Forest with some area within each portion of the Action Area covered by mixed hardwood swamp.

In the early 1950s, the initial stages of construction at the airport had begun. Lands within both sections of the Action Area appear largely undeveloped and consist of forested areas to the west and south of the airfield (Rwy 4 End Action Area). Residential development is limited along Gratiot Ave and Smiths Creek Road. The Rwy 22 End Action Area north of Smiths Creek Road shows some residences along the road but much of the area is cleared or sparsely wooded except for a forest patch along Allen Road (Mead & Hunt, 2025).

In the 1970s, Runway 4/22 was extended to its current length of 5,104 feet and a parallel taxiway added. Significant ditching, particularly at the Rwy 4 End, is present to manage drainage at the airport within the undulating lakeplain terrain. A new unpaved road provides access to instrument landing lights for Runway 4. Along with the runway extension and new access road, land at the end of Runway 4 was cleared west of a north-south drainage ditch up to presumably a new perimeter fence. Lands outside of this clearing are primarily forested. A pipeline corridor runs from east-to-west through the southern portion of the Rwy 4 Action Area.

Starting in the late 1970s, woody encroachment proceeds in previously cleared areas at the runways ends, followed by evidence of clearing activities, initiating a cycle of woody vegetation removal over the decades within the Rwy 4 Action area. North of Smiths Creek Road (Rwy 22 Action Area), forest canopy closure progresses with little evidence of regular vegetation maintenance (Mead & Hunt, 2025).

From the early 2000s to present, lands within the perimeter fence have largely been maintained in a grassland state at the Runway 22 End Action Area and to a lesser degree at the Runway 4 end. The Runway 4 end has seen cycles of woody growth followed by clearing throughout these years. Generally, lands outside of the perimeter fence at the Runway 4 end have reverted to a mixed grassland/shrubby

habitat directly adjacent to the fence and further to the southwest mature forest has developed over most of the Airport's property.

During these years, area north of Smiths Creek Road has seen canopy closure outside of residential properties along the road (Mead & Hunt, 2025).

2.2 Action Area

The Action Area is defined in the Code of Federal Regulations (Part 402.02) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The Action Area has been identified for evaluation of potential impacts to terrestrial and aquatic zones associated with tree clearing at the ends of both runways within surfaces designated to be free of obstructions. The primary driver of these zones of effect is removal of woody vegetation. The project area is located within a developed airport environment on airport property and within developed areas outside of airport property.

The proposed actions will require the use of heavy machinery. The Action Area may experience increased noise and human presence during tree removal operations that may cause disturbance while being located within a relatively noisy airport environment.

2.3 Surrounding Land Uses

Surrounding land use varies from low-density residential along the Gratiot Ave and Pickford Road corridors to undeveloped lands adjacent to airport property. The 80-acre Michigan Certified Business Air Industrial Park sits just to the east of the airport and provides both aviation and non-aviation services. Airport property extends to the north of Smiths Creek Road and includes forested areas and several residences along the Allen Road corridor.

3. Regulatory Background

3.1 Endangered Species Act

Section 7(a)(1) of the Endangered Species Act of 1973 (ESA) requires all Federal agencies to use their authorities to conserve endangered and threatened species in consultation with U.S. Fish and Wildlife Service (USFWS).

Under the Section 7(a)(2) implementing regulations (50 CFR Part 402), Federal agencies must review their actions to determine whether they may affect endangered or threatened species or critical habitat. To accomplish this, Federal agencies must determine whether any listed species may be present in the action area and whether that area overlaps with critical habitat.

If one or more listed species may be present in the action area – or if critical habitat overlaps with the action area – agencies must evaluate the potential effects of their action. If no species or their critical habitat are present or affected, no consultation is required.

3.2 Natural Resources and Environmental Protection Act

Under Part 365 of the Michigan Natural Resources and Environmental Protection Act (1994, as amended) (NREPA), threatened and endangered species are protected from being taken or harmed during project activities. An environmental review must be completed for the project area to identify whether any threatened and endangered species may be affected by project actions. Permits may be required by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) for project activities.

4. Proposed Action/Project Description

4.1 Proposed Action

The Airport proposes to clear, grub, and grade upland areas within the approach surfaces located off the ends of Runway 4/22. Proposed project activities include the removal of trees within an area covering approximately 249 acres split over two sections of the Action Area. Removal of trees within an area approximately 167 acres in size will occur at the Runway 4 end. At the Runway 22 end, tree removals within an area approximately 82 acres in size is proposed. Approximately 190 acres of this combined area is considered forested habitat.

The proposed action is needed to remove existing and potential obstructions identified as penetrations to the Federal Aviation Regulation (FAR) Part 77 Imaginary Surfaces, Threshold Siting Surface (TSS), Precision Approach Path Indicator (PAPI) Light Signal Clearance Surface (LSCS) and Obstacle Clearance Surface (OCS), as well as the State of Michigan Licensing Surface. Unmaintained vegetation has the potential to become obstructions to runway approaches in the future.

Upland areas would be cleared, grubbed, and graded. Cleared upland areas would be revegetated with species that can be regularly maintained. In wetland areas identified in Mead & Hunt's *Wetland Delineation Report* (2024), only tree clearing is proposed which optimally would be accomplished under frozen ground conditions to minimize ground disturbance.

Upland areas on airport property would be cleared first, followed by removal of identified obstructions only from private property with existing avigation easements. Easements will need to be negotiated before removal of obstructions can be accomplished on private properties without existing easements.

In wetland areas, no ground disturbance is proposed – the trees will be cut and removed from the site. Understory trees will remain in forested wetlands. Tree removals in wetlands will be conducted during the winter months.

No instream work is proposed for the project. Construction staging areas and haul routes will be on existing roads and disturbed lands. No prescribed burning, pesticide, or herbicide application is proposed. A map of the Proposed Project is provided in **Appendix B**.

4.2 Proposed Schedule

Tree clearing activities in wetlands will take place during the winter months of 2025/2026 to minimize wetland impacts and to coincide with the inactive period of the EMR. Tree removals in uplands may occur outside of the winter months but not during the summer roosting period of the tricolored bat (TCB) and little brown bats.

5. Biological Evaluation Methods and Results

The potential impacts of the proposed project on federally listed fish, wildlife, and plants were assessed in accordance with the ESA of 1973, Fish and Wildlife Coordination Act, Executive Order 13112-Invasive Species, and the Migratory Bird Treaty Act (MBTA) of 1918. Mead & Hunt biologists conducted a desktop review and a field assessment.

5.1 Evaluation Methods

5.1.1 Desktop Review

Mead & Hunt accessed and reviewed threatened and endangered species information provided in the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) database for the project (https://ecos.fws.gov/ipac/, accessed January 16, 2025). The IPaC review information provides the Federal list of threatened and endangered species and a list of migratory birds protected under the MBTA or birds protected under the Bald and Golden Eagle Protection Act (Eagle Act) that may occur in the Action Area. Presence of critical habitat for federally listed species is also provided in this documentation.

Mead & Hunt requested a Transportation Preliminary Database Search of the proposed project from the EGLE (August 10, 2022). This database search reviews state-listed threatened or endangered species occurrences in the Michigan Natural Features Inventory (MNFI), Tier 1 Eastern Massasauga rattlesnake (EMR) habitat, Michigan mussel protocol group mussels, known contamination locations, state-regulated 303 wetlands, and Section 10 regulated waterways.

Mead & Hunt reviewed additional publicly available data sources and maps listed below:

- Publicly available bird sightings (eBird, 2025)
- National Hydrography Dataset (USGS, 2023a)
- Online USGS topographic maps (USGS, 2023b) and one-foot contour data for St. Clair County (SEMCOG, 2022)
- Federal Emergency Management Agency (FEMA) Flood Hazard mapping (FEMA, 2023)
- National Wetlands Inventory (USFWS, 2023a) maps

5.1.2 Site Field Assessment

Mead & Hunt conducted four site visits on August 16 – 23, 2022; October 3 – 7, 2022; June 6 – 14, 2023; and September 25 – October 4, 2023 to assess biological resources including the presence of suitable habitat for special-status species. The field assessment included a pedestrian survey to document onsite field observations of biological resources and taking of representative site photographs.

5.1.3 Detailed Studies and Assessments

A Phase 1 bat habitat assessment was completed per *Range-Wide Indiana Bat & Northern Long-eared Bat Survey Guidelines: Appendix A* (USFWS, 2023b) for areas proposed for tree clearing. These areas were determined by an obstruction analysis.

A bat acoustic survey to determine presence or probable absence of federally listed bats was undertaken in coordination with USFWS. The study followed survey protocols set forth in the 2024 *Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines* (USFWS, 2024).

A meander survey for the Eastern Prairie fringed orchid, an endangered State of Michigan plant and a Federally listed threatened plant, was conducted when multiple populations of *Cypripedium parviflorum* (yellow lady-slipper orchid) and other known habitat associates were identified within the Rwy 4 End Action Area.

5.2 Results

5.2.1 Desktop Review

5.2.1.1 Ecoregion

St. Clair County is situated within the Huron/Erie Lake Plains Ecoregion (EPA Level III Ecoregion: 57) and is split over two Level IV Ecoregions: the Saginaw Lake Plain Ecoregion (EPA Level IV Ecoregion: 57e) to the north of the City of Port Huron and the Maumee Lake Plain (EPA Level IV Ecoregion: 57a) to the south (US EPA, 2007). The St. Clair River flows to the south from Lake Huron to Lake St. Clair and forms the boundary between the United States and Canada. The Maumee Lake Plain Ecoregion extends from Port Huron along the St. Clair River and the Lake St. Clair and Lake Erie coastlines. Part of the Pleistocene Maumee glacial lake plain which encompassed the Lake Erie basin, the Maumee Lake Plain contains “clayey lake deposits, poorly drained fertile soils, and water-worked glacial till” (US EPA, 2007). The warmer temperatures of this region and its position to the west of Lake Erie results in little lake effect snow.

Well drained areas supported closed-canopy forests composed primarily of beech, sugar maple, hickory, and basswood; a mix of American elm, red ash, silver maple, and other deciduous swamp species occupied less well drained sites. Oak-hickory forest, oak savanna, or dry prairies inhabited sandier beach ridges. The wet prairies of the lake plain were dominated by grasses including bluejoint grass, prairie cordgrass, and big bluestem (US EPA, 2007) and yielded to lowland hardwoods (pin oak, silver maple, swamp white oak, black tupelo, and burr oak) with early settlement drainage practices that effectively lowered the water table.

Pre-settlement vegetation in the vicinity of the Rwy 4 End shows beech-sugar maple forest and patches of mixed hardwood swamp. The Rwy 22 End falls within a large area covered by mixed hardwood swamp (MNFI, 2025a).

With European settlement of this area came clearing, ditching, and tiling of the coastal marshes, wet prairies, and depressional wetlands to grow a variety of crops in what became one of the most productive agricultural regions in the state.

5.2.1.2 Topography

At the Rwy 22 End, drainage is more diffuse and less defined by constructed drainageways. Land within this portion of the Action Area is marked by shallow pockets with poor internal drainage and slight rises, seasonally collecting runoff in the low areas. Vegetation within maintained areas remains in a grassland/wet prairie state while unmaintained land north of Smiths Creek Road shifts to a closed canopy forest. Drainage within the forested area is diffuse but generally flows to the east toward the St. Clair River.

The Runway 22 end is situated at somewhat higher elevations compared with lower areas to the south and west. Topography within the Rwy 22 End of the Action Area is relatively flat with topographic highs around 650 feet (NAVD 1988), dipping to 641 ft in the northeast corner of the Action Area. Topography within the Rwy 4 End varies between 640 feet at the end of the runway to 630 feet in lower areas. Topographic mapping from LiDAR Elevation Data for St. Clair County (SEMCOG, 2022) is provided in **Appendix C**.

5.2.1.3 National Wetland Inventory Mapping

Wetlands mapped on the National Wetland Inventory (NWI) relevant to the two sections of the Action Area primarily consist of forested or emergent classes (USFWS, 2023a). The NWI in this area was updated in 2015; this mapping is assessed here due to its currentness. Seasonally flooded forested wetlands (PFO1C) predominate to the west of the airfield while several temporary flooded forested wetlands (PFO1A) are mapped at the northern extent of the Rwy 22 End Action Area and on the south side of the Rwy 4 End Action Area. A large seasonally flooded scrub-shrub/phragmites-dominated emergent wetland (PSS1/EM5C) is shown within the Rwy 4 End Action Area on airport property outside of the perimeter fence.

Several ditches within the Rwy 4 End Action Area are mapped as excavated low gradient semi-permanently flooded unconsolidated bottom channels (R2UBFx). These all appear to drain southerly to the Moak Drain, also mapped as R2UBFx.

Within regularly maintained airfield areas in the Action Area, multiple seasonally flooded emergent (PEM1C) and phragmites-dominated seasonally flooded emergent (PEM5C) wetlands are mapped in the undulating topography. One large PEM5C wetland in the Rwy 4 End Action Area also contains a permanently flooded freshwater pond in its central core mapped as PUBH. Mapped streams, drains, and water bodies and NWI wetland mapping is presented in **Appendix C**.

5.2.1.4 Streams

The Action Area spans three watersheds: Pine River (HUC12: 040900010306), Holland Drain-Pine River (HUC12: 040900010304), and Bunce Creek-Frontal Saint Clair River (HUC12: 040900010307). The Airport is located between the Pine River on the west and the St. Clair River on the east. The Airport is situated about 1.5 miles east of the Pine River. The Pine River flows southerly eventually reaching the St. Clair River about 6.5 miles south of the Airport in the City of St. Clair. No named streams are within the Action Area.

Locally, two drains empty to the Pine River just outside of the Action Area: the Moak Drain which flows southerly just south of airport property and the London Drain which flows just outside of the west side of the Airport.

Several ditches drain the southern half of the airfield to the Moak Drain in the Rwy 4 End Action Area. Diffuse drainage through the Rwy 22 End Action Area generally flows to the east through several ditches to Bunce Creek which empties to the St. Clair River.

5.2.1.5 Floodplains

An area of regulatory floodplain and 1% Annual Chance Flood Hazard (Zone AE) is mapped along the Pine River to the west and south of the Airport. No mapped floodplains are shown within the Action Area. A FEMA floodplain map is provided in **Appendix C**.

5.2.1.6 Bird Sightings

Bird sighting data was accessed through eBird (eBird, 2025). A listing of 111 birds seen in the general airport vicinity over the last five years is presented in **Appendix D**. The reported observations from St. Clair Township State Game Area (SGA), located approximately 4.5 miles to the south of the airport within a woodland environment, is presumed to be a representative sample of the species likely to be found within the general airport vicinity year-round. Additional bird observations recorded during field visits are also presented in **Appendix D**.

Most of these species are birds commonly found in more developed environments (e.g., cardinals, robins, starlings, and crows) or are found in open woodlands and shrubby areas during migration (e.g., warblers, northern flickers, snow buntings, dark-eyed juncos, and cedar waxwings). Several sightings of raptors were reported including red-tailed and rough-legged hawks, Cooper's hawk, broad-winged hawk, eastern screech owl and northern saw-whet owl, likely finding suitable perches within the wooded environment.

The eBird data includes one sighting each of a Wood thrush (*Hylocichla mustelina*), a bobolink (*Dolichonyx oryzivorus*), and a Black-billed cuckoo (*Coccyzus erythropthalmus*) which are listed as Birds of Conservation Concern (BCC). In addition, three Chimney swifts (*Chaetura pelagica*) and eight rusty blackbirds (*Euphagus carolinus*) were reported during one observation; both are listed as BCC. One sighting of a Bald eagle (*Haliaeetus leucocephalus*) was reported.

5.2.2 Site Field Assessment

The nearly level topography within airport property has naturally undefined drainage. The gently rolling terrain occurs over an elevation range of less than 10 feet over most of the Action Area. Drainage at the airport is accomplished by ditching. The Moak Drain, located between Gratiot Ave and airport property at the Runway 4 End, flows to the southwest. In this area, on-airport drainage generally flows south to this drain through several constructed ditches.

Soil unit boundaries within the Action Area are highly complex units composed of two or more soil units mapped together as a single unit complex with many knolls and shallow depressions and

reflects the undulating topography formed in glaciolacustrine sediments. Seasonal water tables range from one foot above the surface to two feet below in undrained conditions.

Lands within the Action Area consist of a mixture of managed areas and undeveloped lands. Managed areas within the perimeter fence are covered by a mixture of native graminoids and common forbs within an undulating lakeplain environment. Undeveloped lands consist of several large areas of moist upland woods, forested wetlands, and unmaintained grasslands.

Dominant herbaceous vegetation found in uplands within the Action Area included fescues, Kentucky and flat-stem blue grasses, little blue stem, goldenrods, wild strawberry, bracken fern, Eastern teaberry, and Queen Anne's-Lace. Honeysuckle, glossy buckthorn, and autumn olive were found in the shrub layer while the tree stratum was dominated by black cherry, red maple, paper birch, white pine, witch-hazel, American hornbeam, both quaking and big tooth aspens, and red oak. Woody vines were limited except north of Smiths Creek Road where Oriental bittersweet was found in abundance.

Wetlands abound within the Action Area and are highly reticulated and interconnected on the landscape. Several large wetland complexes are present within the Action Area, the largest of which covers over 30 acres. In contrast, a number of wetlands occurred in small, isolated depressions.

Emergent wetlands are concentrated in the regularly maintained portions of the Action Area or are components of larger wetland complexes. Mowing operations limited to the edges of these larger complexes maintains portions of the complexes in emergent vegetation while woody growth over time in hard-to-maintain areas has advanced. Mowing operations are primarily limited by the amount of standing water present during the growing season.

5.2.2.1 Rwy 22 End Action Area

At the Rwy 22 End, drainage is diffuse and constructed drainageways are generally confined to roadside ditches. Land within this portion of the Action Area is marked by shallow pockets with poor internal drainage and slight rises, seasonally collecting runoff in the low areas. Vegetation within maintained areas remains in a grassland/wet prairie state while unmaintained land north of Smiths Creek Road shifts to a closed canopy forest. Drainage within the forested area is diffuse but generally flows to the east toward the St. Clair River.

The Runway 22 end is situated at somewhat higher elevations compared with lower areas to the south and west. Topography within the Rwy 22 End Action Area is relatively flat with topographic highs around 650 feet (NAVD 1988), dipping to 641 ft in the northeast corner of the Action Area.

Vegetation within emergent wetlands in the Rwy 22 End Action Area is dominated by graminoids with shrubs present in an arrested state due to regular mowing. The plant community here contains a mix of graminoids including *Carex pellita* (woolly sedge), *Carex flava* (yellow-green sedge), *Phragmites australis (*common reed*), Carex lupulina* (hop sedge), and *Cladium mariscoides* (smooth saw-grass) along with a mix of shrubs including *Salix petiolaris* (meadow willow), *Cornus amomum* (silky dogwood), and *C. racemosa* (gray dogwood). *Onoclea sensibilis* (sensitive fern),

Athyrium angustum (northern lady fern), and *Equisetum hyemale* (tall scouring-rush) comprised an abundant fern component and dominant forbs present included *Iris virginica (*Virginia blue-flag) and *Prunella vulgaris* (selfheal).

Forested areas concentrated to the north of Smiths Creek Road contain a mature mix of *Acer rubrum* (red maple), *Ulmus americana* (American elm), green ash, *Quercus bicolor* (swamp white oak), *Tilia americana* (basswood), *Carpinus caroliniana* (American hornbeam), and cottonwood (FAC) was present within these wetlands on topography marked by shallow depressional areas and slight rises. Dominant understory species included *Carex cristatella* (crested sedge), *Carex vulpinoidea* (fox sedge), *Glyceria striata* (fowl manna grass), *Ribes cynosbati* (Eastern prickly gooseberry), *Doellingeria umbellata* (flat-topped white aster), and *Fragaria virginiana* (wild strawberry).

5.2.2.2 Rwy 4 End Action Area

Present within both sections of the Action Area, scrub-shrub wetlands were dominated by willows and dogwoods, or saplings of various tree species.

One large wetland complex covers approximately 30.3 acres both inside and outside the perimeter fence. The complex is dominated by a large phragmites shallow marsh with both scrub-shrub and emergent components as fringe plant communities in somewhat higher landscape positions. These fringe communities are dominated by *Populus tremuloides* (quaking aspen) in the tree stratum and *Alnus incana* (speckled alder) in the shrub stratum. Other species in the shrub stratum included *Frangula alnus* (glossy buckthorn) and shoots of *Fraxinus pennsylvanica* (green ash). Dominant understory species included sensitive fern, *Solidago rugosa* (wrinkle-leaf goldenrod), and *Pteridium aquilinum* (bracken fern).

This complex extends to the southwest outside of the perimeter fence and contains a large scrub-shrub wetland stretching over 9.6 acres in size and is emblematic of the glacial lakeplain topography underlying the Action Area marked by shallow depressional pockets and slight rises, seasonally collecting runoff in the low areas. Some parts of this wetland have been hydrologically altered by ditching that drains on-airfield areas and are connected by culverts under two-track access roads located on sandier rises. Dominant shrub species in this wetland include young *Populus deltoides* (cottonwood) and green ash in the tree stratum and gray dogwood, *Cephalanthus occidentalis* (buttonbush), *Salix interior* (sandbar willow), and *Salix discolor* (pussy willow) in the shrub stratum. Speckled alder was also present in large stands in other areas of this wetland.

Extensive hardwood forest areas are present in the Rwy 4 End Action Area as well. These wetlands are marked by a mature forest canopy with a relatively open understory. Depressional areas within these wetlands were often found to be sparsely vegetated with little to no herbaceous layer due to seasonal ponding. Red maple is a prominent component of all of these wetlands along with *Acer saccharinum* (silver maple), green ash, cottonwood, swamp white oak, American hornbeam, quaking aspen, black willow, and *Quercus rubra* (red oak). American elm is a minor component of the tree stratum in many of these wetlands.

The shrub layer is often limited to saplings of the dominant trees. The herbaceous layer when present is dominated by *Carex intumescens* (bladder sedge), *Symphyotrichum lateriflorum* (Farewell-summer), common reed, sensitive fern, *Carex crinita* (fringed sedge), hop sedge, *Osmundastrum cinnamomeum* (cinnamon fern), flat-topped white aster, fowl manna grass, wrinkle-leaf goldenrod, *Calamagrostis canadensis* (bluejoint), *Symphyotrichum lanceolatum* (white panicled American-Aster), *Ranunculus hispidus* (bristly buttercup), and *Thelypteris palustris* (eastern marsh fern).

5.2.2.3 Wildlife and birds observed

During site visits, the following wildlife were directly observed or noted by other indications such as scat or calls. Additional bird observations recorded during field visits are also presented in **Appendix D**.

- Great blue heron (*Ardea herodias*)
- Killdeer (*Charadrius vociferus)*
- Purple martin (*Progne subis)*
- Hawks (*Buteo* sp.)
- Red-winged blackbird (*Agelaius phoeniceus)*
- Turkey vulture (*Cathartes aura)*
- American woodcock (*Scolopax minor)*
- Northern flicker (*Colaptes auratus)*
- Crow (*Corvus brachyrhynchos*)
- House sparrow (*Passer domesticus*)
- Canada goose (*Branta canadensis)*
- Turkey (*Meleagris gallopavo)*
- White-tailed deer (*Odocoileus virginianus*)
- Painted turtle (*Chrysemys picta)*
- Garter snake (*Thamnophis sirtalis sirtali)*
- Pickerel frog (*Lithobates palustris*)
- Spring peeper (*Pseudacris crucifer*)
- Monarch butterfly (*Danaus plexippus*)
- Bumblebee (*Bombus* sp.)

5.2.2.4 Invasives Species

A number of invasive plants were observed in both wetlands and uplands. Two restricted species found in wetlands were *Lythrum salicaria* (purple loosestrife) and common reed. Large patches of common reed were seen throughout the Action Area in non-forested locales. Reed canary grass was also present.

Glossy buckthorn was abundant in the Rwy 22 End Action Area along with *Celastrus orbiculatus* (Oriental bittersweet) and *Rosa multiflora* (Multiflora rose). Multiflora rose was found sporadically in this Action Area. None of these species are regulated.

Upland invasive species included *Elaeagnus umbellata* (Autumn olive*), Berberis thunbergii* (Japanese barberry*),* Oriental bittersweet, and *Centaurea stoebe* (spotted knapweed*)*. Autumn olive is restricted in Michigan while the other species are not currently regulated in Michigan.

5.2.3 Detailed Studies and Assessments

Summaries of specialized studies are presented below. More detailed information is provided in the referenced appendices.

5.2.3.1 Bat Habitat Assessment

A Phase 1 bat habitat assessment was completed per *Range-Wide Indiana Bat & Northern Long-eared Bat Survey Guidelines: Appendix A* (USFWS, 2023b) for areas proposed for tree clearing. These areas were determined by an obstruction analysis. **Appendix E** presents an assessment map, suitability determinations, and detailed descriptions of assessment areas.

Mead & Hunt assessed forested areas within the Action Area for potential summer habitat of two federally protected bat species. *Myotis septentrionalis* (Northern Long-eared bat or NLEB) and *Myotis sodalis* (Indiana bat or IBAT) are federally protected species wherever found within their range. Field work for these assessments occurred over two site visits on June 6 – 14, 2023 and September 25 – October 4, 2023.

During the on-site assessments, forest characteristics were evaluated and recorded based on procedures and example forms from USFWS bat habitat assessment guidelines (USFWS, 2023b).

General forest characteristics recorded include:

- Dominant tree species,
- Density based on canopy > 50 feet, midstory between 20 and 50 feet, and understory less than 20 feet,
- Size composition based on DBH ranging from 3-8 inches DBH for small trees, 9-15 inches DBH for medium trees and > 15 inches DBH for large trees, and
- Presence of suitable snags.

Data recorded at each assessment site included presence and size of streams, ponds, pools or wetlands; whether water resources within forested area are open and accessible to bats; the density of canopy at multiple levels; percentage of trees with exfoliating bark; dominant mature tree species; size composition by DBH; and the number of suitable snags. A final assessment of habitat suitability was made for each bat species.

Suitable summer habitat was found within both sections of the Action Area. Habitat suitability determinations are provided in **Appendix E** along with recommendations for clearing based on guidance provided by USFWS relating to the location of the project within modeled summer habitat and more than five miles from a known hibernaculum (USFWS, 2022b).

5.2.3.2 Bat Acoustic Survey

The bat habitat assessment field work was completed in 2023. Given the impending release of final guidance for NLEB in 2024 after uplisting to endangered status, the USFWS was consulted. A bat acoustic survey was initiated to determine presence or probable absence of three federally endangered Indiana bats and Northern Long-eared bats and proposed federally endangered tricolored bats (*Perimyotis subflavus*) (TCB). A study plan was developed and submitted to the USFWS for review and concurrence was received on July 24, 2024. Acoustic detectors placed in both Action Areas sampled for a total of 28 detector-nights (four detectors for seven nights). Monitoring occurred during the nights of July 25 – 31, 2024. See **Appendix F** for the study report completed by Civil and Environmental Consultants, Inc. (CEC).

Initial software screening of detected calls identified nine species on at least one night of the survey including calls from NLEBs, IBATs, and TCBs. After qualitative analysis, Northern Long-eared bats and Indiana bats were removed from the species list. Based on these results, the presence of Indiana and Northern Long-eared bats within the Action Area is unlikely, and therefore, it was concluded that the proposed clearing of forest within the Action Area is not likely to adversely affect these species.

USFWS reviewed the bat acoustic survey and concurred with its results and recommendations. USFWS indicated that “tree clearing and other activities associated with the project are unlikely to affect these species [Indiana and Northern Long-eared bats] regardless of when the activities occur.” (see **Appendix F**: Email, Jenny Wong, USFWS, dated September 16, 2024)

However, qualitative analysis did verify two (2) tricolored bat calls and three (3) little brown bat calls, suggesting these species are present within the project area. The tricolored bat is proposed for listing as endangered under the ESA. The TCB is listed as threatened by the State of Michigan as is the little brown bat (*Myotis lucifugus*). Based on surrounding forest cover and the likelihood of an abundance of suitable roosts for the TCB, USFWS indicated that they “do not expect this project to adversely affect tricolored bats if the trees can be cut outside the species' summer roosting period (May 15 through July 31), as is planned." (see **Appendix F**: Email, Jenny Wong, USFWS, dated September 16, 2024)

USFWS also recommended that the project:

- Coordinate with the Michigan DNR on obtaining a state threatened and endangered species permit with regard to the TCB and little brown bat.

5.2.3.3 Eastern Prairie Fringed Orchid survey

Platanthera leucophaea (eastern prairie fringed orchid or prairie white-fringed orchid) is a State of Michigan endangered orchid and is listed as threatened by the USFWS under the Endangered Species Act.

During field work between June 8-15, 2023, multiple populations of *Cypripedium parviflorum* (yellow lady-slipper orchid) and other known habitat associates were identified within the Rwy 4

End Action Area. Other associated species identified within this portion of the Action Area included: *Schizachyrium scoparium* (little bluestem), *Cornus alba* (red osier) and *C. amomum* (silky dogwood), *Pycnanthemum virginianum* (mountain mint), *Gentianopsis crinita* (fringed gentian), and *Cladium mariscoides* (twig-rush). Upon the identification of known associated species within this lakeplain wet prairie site, and due to its protected status, a meander search was conducted for the eastern prairie fringed orchid.

No stems resembling the eastern prairie fringed orchid were identified within the survey area of the meander search. The moist and wet habitats within the meander search area needed to accommodate this wetland species were often overgrown with trees, shrubs, and invasive common reed. See **Appendix G** for additional information on the orchid survey.

5.2.4 Other Results

Monarchs, a proposed threatened species, were observed on site. No federally listed species were observed during the site visit. Representative site photographs are provided in **Appendix H**.

6. Listed Species

6.1 Federal Listed Species

6.1.1 Federal Threatened and Endangered

The USFWS IPaC database search for the project (https://ecos.fws.gov/ipac/, accessed January 16, 2025) identified ten federally endangered, threatened, proposed endangered, or proposed threatened species. **Appendix I** provides the Federal list of threatened and endangered species that may occur in the Action Area. The Rusty Patched Bumble Bee is also listed as endangered under the ESA and is included in this list.

Also provided in **Appendix I** is USFWS consultation for the identified listed species. Table 1 summarizes the listed species identified within the IPaC database for the Action Area.

TABLE 1. FEDERAL LISTED SPECIES THAT MAY OCCUR IN ACTION AREA

SPECIES NAME	COMMON NAME	STATUS	HABITAT REQUIREMENTS
Myotis septentrionalis	Northern Long-eared Bat	Endangered	Forested habitats containing trees ≥ 3 inches dbh; suitable underground hibernacula
Myotis sodalis	Indiana Bat	Endangered	Forested habitats containing trees > 5 inches dbh; suitable underground hibernacula
Calidris canutus rufa	Red Knot	Threatened	Migratory shorebird that uses tidal flats and sandy areas
Sistrurus catenatus	Eastern Massasauga Rattlesnake	Threatened	Varied wetland habitats coincident with uplands; winter hibernation in low wet areas
Villosa fabilis	Rayed Bean	Endangered	Small, shallow rivers, in and near riffles, often near aquatic vegetation; also along shallow, wave-swept lakeshores
Obovaria subrotunda	Round Hickorynut	Threatened	Medium to large rivers and along the shores of Lake Erie and Lake St. Clair on sand and gravel substrates
Simpsonaias ambigua	Salamander mussel	Proposed Endangered	Medium to large rivers and lakes; usually found in silt or sand under flat stones
Epioblasma triquetra	Snuffbox Mussel	Endangered	Sand, gravel, or cobble substrates in swift small and medium-sized rivers
Danaus plexippus	Monarch Butterfly	Proposed Threatened	Migratory butterfly found in a variety of habitats supporting their obligate milkweed host plant
Platanthera leucophaea	Eastern Prairie Fringed Orchid	Threatened	Moist prairie remnants, particularly those associated with lakeplains; also occurs in open or semi-open bogs and peaty lakeshores
Bombus affinis	Rusty Patched Bumble Bee	Endangered	Grasslands and tallgrass prairies of the Upper Midwest

6.1.1.1 Proposed Threatened or Proposed Endangered Species

USFWS proposes to list the Monarch butterfly as threatened under the ESA and if finalized will extend the Act's protections to the species. Similarly, the Salamander mussel is also proposed to be listed as endangered under the ESA. Therefore, for the purposes of this report, these two species will be considered as protected under the ESA.

6.1.1.2 Migratory Birds

Fourteen bird species protected under the MBTA and the Eagle Act were identified by the USFWS IPaC database search. Table 2 presents the list of identified bird species and their breeding season.

TABLE 2. MIGRATORY BIRD SPECIES THAT MAY OCCUR IN ACTION AREA

SPECIES NAME	COMMON NAME	PROTECTION	BREEDING SEASON
Haliaeetus leucocephalus	Bald Eagle	Eagle Act	Dec 1 to Aug 31
Coccyzus erythropthalmus	Black-billed Cuckoo	MBTA	May 15 to Oct 10
Dolichonyx oryzivorus	Bobolink	MBTA	May 20 to Jul 31
Cardellina canadensis	Canada Warbler	MBTA	May 20 to Aug 10
Chaetura pelagica	Chimney Swift	MBTA	Mar 15 to Aug 25
Ammodramus henslowii	Henslow's Sparrow	MBTA	May 1 to Aug 31
Tringa flavipes	Lesser Yellowlegs	MBTA	Breeds elsewhere
Calidris melanotos	Pectoral Sandpiper	MBTA	Breeds elsewhere
Melanerpes erythrocephalus	Red-headed Woodpecker	MBTA	May 10 to Sep 10
Euphagus carolinus	Rusty Blackbird	MBTA	Breeds elsewhere
Calidris pusilla	Semipalmated Sandpiper	MBTA	Breeds elsewhere
Limnodromus griseus	Short-billed Dowitcher	MBTA	Breeds elsewhere
Bartramia longicauda	Upland Sandpiper	MBTA	May 1 to Aug 31
Hylocichla mustelina	Wood Thrush	MBTA	May 10 to Aug 31

6.1.1.3 Critical Habitat

No critical habitat under USFWS jurisdiction was identified in the Action Area.

6.2 State Listed Species

A database search of the MNFI requested as part of a Transportation Preliminary Database Search (August 10, 2022) revealed no occurrences of State-listed threatened and endangered species. No Tier 1-designated EMR habitat is within the Action Area and no occurrences of Michigan Mussel Protocol Group 1/Group 2 listed mussels were identified. The search did not indicate any occurrences of state-listed threatened and endangered species nor Section 10 waterways. The Action Area is within the range of the IBAT and the bats are considered potentially present wherever suitable habitat exists. The NLEB is a wide-ranging species and is considered potentially present wherever suitable habitat exists (**Appendix I**).

6.3 Consultation to Date

A list of threatened, endangered, and proposed endangered or threatened species was obtained through the USFWS IPaC database tool. The All-species Michigan Determination Key (DKey) provides recommended determination(s) for some species within the Action Area based on information provided by the user through an interview process. A verification letter for the effect determination(s) is produced at the end of the DKey process. **Appendix I** contains the Federal list of threatened and endangered species that may occur in the Action Area and the verification letter from the USFWS.

Mead & Hunt requested a Transportation Preliminary Database Search of the proposed project from the EGLE. This review of threatened and endangered species assessed a 500-foot buffer of the proposed project area. Results of this review are provided in **Appendix I**.

7. Biotic Communities

7.1 Species Accounts

7.1.1 Northern Long-eared Bat

This wide-ranging bat is found in 37 states from as far west as Montana and covering the north-central United States to as far south as southern Arkansas and eastward to northern Louisiana and northern Georgia. The bat's range covers parts of the east coast from coastal South Carolina to Maine and into Canada.

7.1.1.1 Habitat Status and Requirements

NLEBs hibernate in winter in caves and mines, preferring the constant temperatures, high humidity, and no air currents present in these landscape features. The bats generally hibernate from November to early March. Summer finds them in forested habitats roosting singly or in colonies underneath bark, in cavities or crevices of both live trees and snags. Potential roosts can be varied, but suitable roost trees exhibit loose or exfoliating bark and/or dead or dying trees that contain cracks and crevices. The NLEB seems to be flexible in selecting roost trees, with the suitability of bark or presence of cavities or crevices being important (USFWS, 2022a). Trees suitable for roosts are ≥3 inches DBH with exfoliating bark, cracks, crevices, and/or cavities (USFWS, 2023b).

> Suitable summer habitat for NLEB and Indiana bat consists of a wide variety of forested/wooded habitats where they roost, forage, and travel. This habitat may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. This includes forests and woodlots containing potential roosts, as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. NLEBs are typically associated with upland forests. NLEBs seem to be focused in upland, mature forests with occasional foraging over forest clearings, water, and along roads. However, most NLEB hunting occurs on forested hillsides and ridges, rather than along riparian areas.
>
> Many species of bats, including the Indiana bat and NLEB, consistently avoid foraging in or crossing large open areas, choosing instead to use tree-lined pathways or small openings. ……. Thus, isolated patches of forest may not be suitable for foraging or roosting unless the patches are connected by a wooded corridor. (USFWS, 2018a)

White-nose syndrome (WNS) caused by a fungal pathogen has contributed to the decline of the NLEB, which led to its listing as threatened in 2015 (USFWS, 2022a). The bat was listed as endangered under the ESA on March 31, 2023. Other stressors on the species include mortality from wind turbines, habitat loss due to conversion to residential or commercial land use, and climate change-induced temperature and precipitation changes, which can affect summer roosting and foraging habitat.

No critical habitat has been designated for this species. No known NLEB hibernacula or roost trees are documented in St. Clair County (USFWS, 2022b).

7.1.1.2 Habitat Assessment

Lands within the Action Area consist of a mixture of managed areas and undeveloped lands. Managed areas within the perimeter fence are covered by a mixture of native graminoids and common forbs within an undulating lakeplain environment. These are kept in a grassland state. Undeveloped lands consist of several large areas of moist upland woods, forested wetlands, and unmaintained grasslands.

A Phase 1 bat habitat assessment was completed per *Range-Wide Indiana Bat & Northern Long-eared Bat Survey Guidelines: Appendix A* (USFWS, 2023b) for areas proposed for tree clearing. Suitable summer habitat was found within both sections of the Action Area. Habitat suitability determinations are provided in **Appendix E** along with recommendations for clearing based on guidance provided by USFWS relating to the location of the project within modeled summer habitat and more than five miles from a known hibernaculum (USFWS, 2022b).

Suitable summer habitat is found at both ends of the runway in areas outside of the perimeter fence. Nearly all area within the Rwy 4 End Action Area contains modeled bat habitat while the Rwy 22 End Action Area contains no modeled bat habitat.

The forested area in the Rwy 4 End Action Area is generally described as follows: The closed canopied, contiguous forested area within these assessment areas is dominated by tall (> 50 ft in height) red maple, white pine, and black cherry with predominantly medium sized trees between 9 and 15 inches DBH and large trees >15 inches DBH. Some large cottonwoods are also present in wetter areas; drier areas included paper birch. These mixed age stands generally had a varied and fairly open understory including immature cherry, sassafras, alder, white oak, shagbark hickory, and red oak. Multiple suitable snags are present in each of these assessment areas. Water resources are limited to seasonal availability in depressional areas; however, a perennial ditch does flow through the Action Area and there is a shallow marsh to the north of these areas that would provide availability to water during the summer months. This part of the Action Area sees little human disturbance except for occasional off-road recreational activities.

At the Rwy 22 End Action Area, suitable summer habitat is present though it is of a lower quality than that found at the Rwy 4 End. Previous historic tree clearing in areas close to Smiths Creek Road has enabled invasive species to colonize including Oriental bittersweet, glossy buckthorn, and common reed. Several residences are located along the road. Still, there are large blocks of suitable habitat within this Action Area, some of which is located on private property.

The swamp hardwood habitat that predominates in the less disturbed blocks provide seasonal availability to water resources. The area exhibits a closed canopy with a majority of trees > 50 feet tall and is dominated by large (>15 inches DBH) red maple, cottonwood, and swamp white oak with a fairly cluttered understory of saplings and small trees. Multiple large snags are present. Non-dominant trees are shagbark hickory, elm, paper birch, American hornbeam.

7.1.2 Indiana Bat

The Indiana bat (IBAT) is known or believed to occur in 22 states from as far west as Missouri covering the central U.S. states of Illinois, Indiana, Ohio, Michigan, Tennessee, Kentucky, West Virginia, and Pennsylvania, to as far south as northern Alabama and eastward to the Appalachian Mountains.

In Michigan, the bat's range consists of the southern five tiers of counties (including St. Clair County) and the western coastal counties up to and including the Leelanau peninsula (USFWS, 2022b).

7.1.2.1 Habitat Status and Requirements

Michigan has only one known Indiana bat hibernaculum in Manistee County at a hydroelectric facility. A majority of the Indiana bats that summer in Michigan are believed to migrate south to states such as Indiana or Kentucky to over-winter (USFWS, 2022b). IBATs hibernate in underground caves and cave-like structures such as abandoned or active mines and railroad tunnels.

IBATs utilize a wide variety of forested/wooded habitats in summer which provide suitable summer habitat for foraging, roosting, and traveling. Forested areas may have a variable amount of canopy closure from dense to loose aggregates. Suitable summer habitat may also include some adjacent non-forested habitats such as emergent wetlands and agricultural fields (USFWS, 2022b).

Tree species used by Indiana bats as roosts may include "ash, elm, hickory, maple, oak, or poplar, although any tree that retains large, thick slabs of peeling bark may be suitable" (USFWS, 2018a). Larger trees (i.e., > 5 inches diameter at breast height [dbh]) also are indicative. "A typical Indiana bat primary roost is located under exfoliating bark of a dead ash, elm, hickory, maple, oak, or poplar, although any tree that retains large, thick slabs of peeling bark may be suitable. Primary Indiana bat roosts usually are in trees that are in early-to-mid stages of decay." (USFWS, 2018a)

The IBAT is known to be present in Lower Michigan, though the MNFI shows no reported occurrences in St. Clair County. The bat is considered potentially present wherever areas of suitable habitat exist within their range (MNFI, 2025b).

Disturbance to hibernating bats in caves during winter which resulted in the loss of substantial numbers of bats led to the species being listed under the ESA. Significant stressors to the bat include habitat loss and degradation due to conversion to residential or commercial land use, commercialization of caves, and most recently, White-nose syndrome (WNS) caused by a fungal pathogen (USFWS, 2022b).

There is critical habitat designated for this species. However, there is none designated in the Action Area or in Michigan.

7.1.2.2 Bat Habitat Suitability Model

USFWS developed a bat habitat suitability model to identify high-priority areas where the bats are most likely to inhabit. The model was initially developed for the Indiana bat and was later extended to include the NLEB (USFWS, 2022b).

A spatial overlay analysis of proposed tree clearing areas with modeled bat habitat shows the Rwy 4 End Action Area contains 164 acres of potential tree clearing within modeled habitat. The Rwy 22 End Action Area does not contain any modeled bat habitat. Approximately 5,200 feet separates the two sections of the Action Area. **Appendix E** presents the results of the spatial analysis.

7.1.2.3 Habitat Assessment

A Phase 1 bat habitat assessment was completed per *Range-Wide Indiana Bat & Northern Long-eared Bat Survey Guidelines: Appendix A* (USFWS, 2023b) for areas proposed for tree clearing. Suitable summer habitat was found within both sections of the Action Area. Habitat suitability determinations are provided in **Appendix E** along with recommendations for clearing based on guidance provided by USFWS relating to the location of the project within modeled summer habitat and more than five miles from a known hibernaculum (USFWS, 2022b).

Suitable summer habitat is found at both ends of the runway in areas outside of the perimeter fence. Nearly all area within the Rwy 4 End Action Area contains modeled bat habitat while the Rwy 22 End Action Area contains no modeled bat habitat.

Bat habitat requirements for the IBAT are similar to that of the NLEB. A description of suitable bat habitat present within the Action Area is provided in **Section 7.1.1.2 Habitat Assessment** relating to the NLEB.

7.1.3 Red Knot

7.1.3.1 Habitat Status and Requirements

This shorebird is in the Sandpiper family. It nests in the far north, mostly well above the Arctic Circle, and migrates to its winter range along shorelines around the world, south to Australia, and southern South America. The red knot forages on tidal flats and sandy areas for mollusks, insects, green vegetation, and seeds. In migration and winter, the red knot feeds on small invertebrates that live in mud of intertidal zones, especially small mollusks, marine worms, and crustaceans. On breeding grounds, the birds feed mostly on insects, especially flies and will eat much plant material, especially early in breeding season (when insects may be scarce), including shoots, buds, leaves, and seeds (https://www.audubon.org/field-guide/bird/red-knot, accessed February 2, 2024).

In migration, red knots use areas such as beaches, shoals, tidal mud or sand flats spaced in a network to provide stopover habitats on their long migrations. Coastal habitats, generally coastal marine and estuarine areas marked by large expanses of exposed intertidal sediments provide the needed open landscapes with sparse vegetation to avoid predation and reliable food sources (USFWS, 2020a).

7.1.3.2 Habitat Assessment

The Action Area provides limited habitat potential for this species. The Action Area consists of open grassland, wet meadow, scrub-shrub, upland forests and forested wetland, habitats that do not support the red knot's biological needs for food and stopover habitat.

7.1.4 Eastern Massasauga Rattlesnake

The EMR historically occupied the Upper and Lower Peninsulas of Michigan and other areas of the Upper Midwest including New York, Pennsylvania, Ohio, Indiana, Illinois, Wisconsin, Minnesota, Missouri, and Iowa.

In Michigan, the snake occurs throughout the lower peninsula with clusters of occurrences found in the southeastern region (Oakland, Livingston, Jackson, and Washtenaw counties), the southwestern region (Allegan, Barry, Berrien, Cass, Kalamazoo, and Van Buren counties), and northeastern part of the state (Iosco, Alcona, Alpena, Crawford, Kalkaska, Montmorency, and Presque Isle counties). No occurrences are recorded for St. Clair County (MNFI, 2024).

7.1.4.1 Habitat Status and Requirements

The EMR is active in the spring, summer, and fall, using a variety of habitats during the active season. The snake is inactive in the winter when it hibernates in low wet areas (Szymanski, et al., 2016a).

The snake's activity and habitat usage vary over the year. EMRs are active between April and late October. Spring emergence from hibernation starts in late March and early April and most of the spring months find the snakes utilizing elevated sites such as sedge and grass hummocks, beaver lodges, or embankments for basking. The summer months see the snakes moving to more open and slightly higher elevations followed by a return to their hibernacula in mid-October (MNFI, 2024).

> EMR have been found in a variety of wetland habitat types across their range, including bogs, fens, shrub swamps, wet meadows, marshes, moist grasslands, wet prairies, peatlands, coniferous forests and floodplain forests. At many locations, EMR also move from wetlands to drier upland sites during certain parts of the year to forage, disperse, gestate, and even hibernate in some cases. Suitable upland habitat types range from forest edges and openings, savannas, and prairies to meadows, old fields, and some agricultural lands (USFWS, 2018b).
>
> Populations in southern Michigan are typically associated with open wetlands, particularly prairie fens, while those in northern Michigan are better known from lowland coniferous forests, such as cedar swamps……. In general, structural characteristics of a site appear to be more important than vegetative characteristics for determining habitat suitability.
>
> Specifically, all known sites appear to be characterized by the following:
> (1) open, sunny areas intermixed with shaded areas, presumably for thermoregulation;
> (2) presence of the water table near the surface for hibernation; and
> (3) variable elevations between adjoining lowland and upland habitats (MNFI, 2024).

Habitat loss including past wetland loss as well as land development and agriculture are important factors in the decline of EMR. Unmanaged woody succession is now an important risk factor (USFWS, 2018b). Woody succession, especially as seen with introduced species such as Eurasian buckthorn, often results in habitats becoming too shady to support the basking and thermoregulation needs of the EMR.

Habitat fragmentation, either through direct loss of component habitat or by constructed barriers such as roads or bridges that impede access to needed component habitat, is a stressor for the EMR (Szymanski, et al., 2016a).

No critical habitat has been designated for the EMR. However, suitable habitat in Michigan is classified into three categories for the purposes of environmental screening (USFWS, 2017):

- Tier 1 Habitat: Areas known to be occupied by EMR or highly likely to be occupied by EMR.
- Tier 2 Habitat: Areas with high potential habitat and may be occupied by EMR.
- Within the known range: EMR can occur throughout the Lower Peninsula and on Bois Blanc Island in Mackinac County. Areas within the known range but outside of Tier 1 and Tier 2 are considered less likely to be occupied.

7.1.4.2 Habitat Assessment

Although the Action Area does not fall within Tier 1 or Tier 2 habitat, it is within the known range of the EMR (USFWS Endangered Species List in **Appendix I**). Occurrences of the EMR have not been reported in St. Clair County (MNFI, 2024).

Within the Rwy 22 End Action Area, there is a mix of managed and unmanaged lands. Within the perimeter fence, regular maintenance keeps the area in a grassland state. While this habitat under different management conditions would be ideal upland habitat for the snake, regular maintenance and disturbance results in unsuitable habitat conditions.

North of Smiths Creek Road, a notable physical barrier to shadier wetland areas under tree canopy, the large, forested area is dense and is characterized by a closed canopy too shady to support the EMR's thermoregulation needs. Open sunny areas are extremely limited within this wooded area. Suitable habitat for the snake is not present in this area.

The highly managed areas on the airfield within the Rwy 4 End Action Area are regularly mowed which, like the managed areas within the Rwy 22 end, results in unsuitable habitat conditions.

Outside of the perimeter fence, the varied habitat is marked by large expanses of hardwood swamp, scrub-shrub, and wet meadow habitat alternating with uplands in higher landscape positions. Central to this area is a scrub-shrub complex. Stretching over 9.6 acres in size, it is emblematic of the glacial lakeplain topography underlying the Action Area and is marked by shallow depressional pockets and slight rises, seasonally collecting runoff in the low areas. A shallow marsh to the north of these areas provides evidence of a high water table in the general area; numerous ditches at this end of the runway have not adequately drained the area.

This complex transitions to a mature forest canopy with a relatively open understory. Depressional areas within these forested wetlands were often found to be sparsely vegetated with little to no herbaceous layer due to seasonal ponding. Forested upland areas tend to be mature with an open understory.

Suitable habitat for the snake is present outside of the perimeter fence at the Rwy 4 End. Intermixed open and shady habitats are available, depressional areas collect runoff and are supported by high water throughout most of the year, and component habitat with variable elevations are present. This part of the Action Area sees little human disturbance except for occasional off-road recreational activities.

7.1.5 Snuffbox Mussel, Rayed Bean, Round Hickorynut, and Salamander Mussel

7.1.5.1 Snuffbox Mussel

Populations of the snuffbox mussel have declined precipitously across its widespread historical range. Extant populations, with few exceptions, are highly fragmented and restricted to short reaches. It was known to be present in a number of upper Midwest states including Michigan at the time of the species' listing in 2012.

In Michigan, occurrences of the mussel have been reported from the lower half of the Lower Peninsula, including St. Clair County as recently as 2021 (MNFI, 2025c).

> "The general biology of the snuffbox is similar to other bivalved mollusks belonging to the family Unionidae. Adults are suspension-feeders, spending their entire lives partially or completely buried within the substrate. Adults feed on algae, bacteria, Snuffbox SSA Report 4 May 2022 detritus, microscopic animals, and dissolved organic material." (USFWS, 2022c)

> "The snuffbox is found in small- to medium-sized creeks, to larger rivers, and in lakes. The species occurs in swift currents of riffles and shoals and wave-washed shores of lakes over gravel and sand with occasional cobble and boulders. Individuals generally burrow deep into the substrate, except when spawning or attempting to attract a host." (USFWS, 2022c)

7.1.5.2 Rayed Bean

The historic range of the rayed bean, a freshwater mussel, included parts of the Midwest and eastern U.S. to as far north as Ontario, Canada. The mussel appears to be extirpated from a large part of its historic range and now consists of fragmented populations in Indiana, Michigan, New York, Ohio, Pennsylvania, and Ontario (USFWS, 2012).

In Michigan, the rayed bean was found historically in St. Clair County from the Pine River, and in other eastern counties along Lake St. Clair and Lake Erie (Carman, 2001a).

The rayed bean, like the snuff box mussel, has seen its range severely diminished with live mussels only found in Michigan in the Pine (St. Clair County) and Clinton Rivers (Macomb County) in the last 20 years.

> "The rayed bean generally lives in smaller, headwater creeks, but it is sometimes found in large rivers and wave-washed areas of glacial lakes. It

> prefers gravel or sand substrates, and is often found in and around roots of aquatic vegetation. Adults spend their entire lives partially or completely buried in substrate, filtering water through their gills to remove algae, bacteria, detritus, microscopic animals, and dissolved organic material for food." (USFWS, 2012)

Further, similar to the snuffbox, the rayed bean prefers small, shallow rivers with riffles, slow flowing rivers, or along shallow, wave-swept shorelines of lakes (Carman, 2001a).

7.1.5.3 Round Hickorynut

This wide-ranging mussel is found in nine states in the middle part of the United States from Tennessee northward to Michigan and as far north as Ontario. In Michigan, occurrences of the mussel are found in the Lake St. Clair and Lake Erie watersheds (Carman, 2001b).

The round hickorynut is a filter feeder with a diet consisting of a mixture of organic matter, algae, and diatoms, and bacteria.

> "The round hickorynut is typically found in medium to large rivers and along the shores of Lake Erie and Lake St. Clair, near river mouths. The round hickorynut generally is found in sand and gravel substrates in areas with moderate flow." (Carman, 2001b)

7.1.5.4 Salamander Mussel

Similar to the round hickorynut, the salamander mussel is found in scattered populations in the middle part of the United States from Arkansas to New York. While it is widely distributed, it is rare throughout its range. In Michigan, it is found in the southeastern border counties of the state within the Lake St. Clair and Lake Huron watersheds. Locally, it has been found in the Pine River in St. Clair County (Carman, 2002).

> "The salamander mussel is found in medium to large rivers and lakes. It is usually found in silt or sand under flat stones. Although this mussel is rare, it is usually abundant in patches. Its presence is usually linked to that of the mudpuppy (*Necturus maculosus*), its host. …… The salamander mussel is the only freshwater mussel with a non-fish host." (Carman, 2002)

7.1.5.5 Habitat Assessment for Mussels

The MNFI Michigan Mussel Web App shows the modeled potential presence or absence for mussel species in streams based on occurrence data from the MNFI database and individual species conservation status (MNFI, 2025d). The rayed bean and snuffbox are modeled in Stream Group 3 by the MNFI; the round hickorynut and the salamander mussel are modeled in Stream Group 2. Group numbers indicate applicable survey protocols for a particular mussel. The Pine River contains modeled habitat for mussels and is located about 1.5 miles to the west of the Airport and Action Area. The river flows southerly eventually reaching the St. Clair River about 6.5 miles south of the Airport in the City of St. Clair.

The Action Area contains no modeled potential presence/absence streams on Airport property or within the Action Area (MNFI, 2025d). A perennial excavated ditch is present within the Rwy 4 End Action Area. This ditch is not a high-quality water source and does not contain suitable substrates for any of the identified mussels. No other perennial streams are within the Action Area. Suitable habitat for identified mussels is not present within the Action Area.

7.1.6 Monarch Butterfly

7.1.6.1 Habitat Status and Requirements

Monarchs, a globally distributed species, undergo a well-documented, multi-generational migration. From the over-wintering population in Mexico, the first generation migrates north and gives rise to two generations of butterflies that remain resident in the north. The fourth generation completes the cycle by migrating south to Mexico to over-winter. The butterflies use plants in the Milkweed family exclusively for egg laying. With milkweeds' broad distribution, monarch populations historically expanded across North America and to other parts of the world. There are two migratory populations in North America that have seen long-term declines. This has led to a petition of USFWS to list the monarch for ESA protection (USFWS, 2020b). The USFWS proposed listing the monarch butterfly as threatened under the ESA on December 12, 2024.

7.1.6.2 Habitat Assessment

Little suitable habitat is present within the Action Area in part due to the long history of vegetation maintenance activities on the airfield in both sections of the Action Area and the predominance of forested areas not conducive to supporting the Monarch's host plant. Open grassland areas are present within Rwy 4 End where several monarchs were noted during field work but little common milkweed was observed in these areas.

7.1.7 Eastern Prairie Fringed Orchid

The historical geographic extent of the eastern prairie fringed orchid included parts of the Upper Midwest. Historically, it was observed in 21 Michigan counties. The 1999 Recovery Plan, however, referenced known populations in just nine counties at that time. The largest population was found to be in prairies bordering Saginaw Bay (Bowles, 1999).

In Michigan, reported occurrences of the orchid generally are from counties in the southeast corner of the state south of Lake Saginaw (MNFI, 2025e). One disjunct occurrence from 1924 is reported from Cheyboygan County on the northern tip of the Lower Peninsula. Two occurrences from St. Clair County are reported as recently as 2006.

7.1.7.1 Habitat Status and Requirements

The eastern prairie fringed orchid occurs in two distinct habitats – wet prairies and bog – thriving primarily in lakeplain wet or wet-mesic prairie environments along Saginaw Bay and Lake Erie (Penskar and Higman, 2000).

> "The eastern prairie fringed orchid occurs in a wide variety of habitats, from mesic prairie to wetlands such as sedge meadows, marsh edges and even bogs. It requires

full sun for optimum growth and flowering which restricts it to grass- and sedge-dominated plant communities." (Bowles, 1999)

Populations of the eastern prairie fringed orchid are at risk from a number of threats: habitat destruction through conversion to agricultural uses and development, encroachment of woody vegetation, impacts to pollinator populations, variable lake levels due to highly droughty growing seasons, and competition from invasive species such as common reed, reed canary grass, purple loosestrife, and glossy buckthorn.

7.1.7.2 Habitat Assessment

The eastern prairie fringed orchid can be found in a wide range of wetland habitats. Due to the species' need for full sun exposure, it is generally restricted to grass- and sedge-dominated plant communities.

Known habitat associates of the orchid were identified within the Rwy 4 End Action Area. A meander search of potential suitable habitat did not find evidence of the eastern prairie fringed orchid. The moist and wet habitats within the meander search area needed to accommodate this wetland species were often overgrown with trees, shrubs, and invasive common reed. While this part of the Action Area does provide some limited potential habitat for the orchid, the orchid is considered not to be present.

7.1.8 Rusty Patched Bumble Bee (RPBB)

The rusty patched bumble bee (*Bombus affinis*) historically was distributed over broad areas of the Dakotas, the Upper Midwest, the Central U.S., and into the New England states as well as Ontario and Quebec, Canada (Szymanski, et al., 2016b).

The Action Area is located within the historical range of the RPBB in Michigan (Rowe, Cuthrell, and Enander, 2019). Historic occurrences have been reported throughout Lower Michigan but none after 2000. No occurrences of the RPBB are reported for St. Clair County (https://mnfi.anr.msu.edu/species/description/19854/bombus-affinis, accessed January 29, 2025). The current range of the RPBB in Michigan is mapped in the lower southeastern corner of the state and does not include St. Clair County (Rowe, Cuthrell, & Enander, 2019).

7.1.8.1 Habitat Status and Requirements

The RPBB, as with all bumble bee species, requires habitats to support nesting, foraging, and overwintering. "*Bombus affinis* has been observed and collected in a variety of habitats, including prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens (Szymanski, et al., 2016b)." Rodent or other similar underground cavities are typical nesting sites for this bumble bee. Overwintering sites for hibernating queens can include areas of loose undisturbed soil and/or leaf litter, compost, or rodent hills (Szymanski, et al., 2016b).

The RPBB queens emerge early in spring, find nest sites, and establish colonies. From early spring and into fall, the RPBBs forage for nectar and pollen to support the colony. A diverse range

of flowering plants must be available to meet foraging needs over the colony's long activity period (mid-March through mid-October).

Decline of the RPBB has been relatively swift and widespread since the late 1990s. Historical reports prior to 1999 indicate the RPBB was still common in its range during the mid to late 1990s and 2000s but has suffered an 88 percent reduction in its range from the historical to current time period (Szymanski, et al., 2016b). A leading consideration for the decline of the RPBB, and other bumble bees, is that commercially reared bumble bees used for pollination services spread a pathogen to which wild bees have little resistance. Other causes for decline of the RPBB include habitat loss, pesticide and herbicide use, and climate change.

7.1.8.2 Habitat Assessment

The RPBB historically is associated with grasslands and tallgrass prairies of the Upper Midwest. This type of habitat provides nesting sites, overwintering sites, and nectar and pollen from an abundant array of forbs.

The Action Area is within the historical range of the RPBB, but suitable foraging and nesting habitat are limited within the Action Area in part due to the long history of vegetation maintenance activities on the airfield in both sections of the Action Area and swamp hardwood forested wetland and mature upland forested areas not conducive to supporting the bumble bee. Open grassland areas are present within the Rwy 4 End Action Area but are limited. Therefore, the Action Area provides limited potential habitat for the RPBB.

8. Impact Analysis

Proposed project activities include tree removals within an area approximately 249 acres in size split over two sections of the Action Area. Approximately 190 acres of this combined area is considered forested habitat. Upland areas would be cleared, grubbed, and graded and would be revegetated. In wetland areas, no ground disturbance is proposed – the trees will be cut and removed from the site. Understory trees will remain in forested wetlands. Tree removals in wetlands will be conducted during the winter months. No prescribed burning, pesticide, or herbicide application is proposed nor is instream work proposed.

8.1 Threatened and Endangered Species

The All-species Michigan Determination DKey (dated February 6, 2025) within the IPaC system was used to generate effect determinations (Table 3). **Appendix I** presents the USFWS verification letter for the project. The effect determinations for these species rest on project information provided to USFWS and the implementation of conservation measures described below.

TABLE 3. RECOMMENDED EFFECT DETERMINATIONS FROM MICHIGAN DKEY

Species Name	Status	DKey Determination
Eastern Massasauga (*Sistrurus catenatus*)	Threatened	NLAA*
Eastern Prairie Fringed Orchid (*Platanthera eucophaea)*	Threatened	No effect
Indiana Bat (*Myotis sodalis*)	Endangered	No effect
Monarch Butterfly (*Danaus plexippus*)	Proposed threatened	No effect
Northern Long-eared Bat (*Myotis septentrionalis*)	Endangered	No effect
Rayed Bean (*Villosa fabalis*)	Endangered	No effect
Round Hickorynut (*Obovaria subrotunda*)	Threatened	No effect
Red Knot (*Calidris canutus rufa*)	Threatened	No effect
Snuffbox Mussel (*Epioblasma triquetra*)	Endangered	No effect
Salamander Mussel (*Simpsonaias ambigua*)	Proposed Endangered	No effect

*NLAA=May affect, but not likely to adversely affect

8.1.1 Eastern Massasauga Rattlesnake

Potentially suitable habitat is present within the Rwy 4 End Action Area. Suitable hibernation sites and potentially suitable upland habitat in open grassland areas that could provide nesting sites and foraging habitat is present.

Clearing and grubbing activities will occur in upland areas only. Trees within wetlands, areas potentially utilized by the snakes as hibernation sites during the winter, would be cut and removed with limited ground disturbance. Tree removals will be conducted during the EMR's inactive period. No hydrologic alterations are anticipated to occur during project activities.

Recommended best management practices for projects within the known EMR range will be implemented as detailed below. Therefore, the proposed action may affect, but is not likely to adversely affect the EMR.

8.1.2 Eastern Prairie Fringed Orchid

A meander search of potential suitable habitat did not find evidence of the eastern prairie fringed orchid. The moist and wet habitats within the meander search area needed to accommodate this wetland species were often overgrown with trees, shrubs, and invasive common reed. While this part of the Action Area does provide some limited potential habitat for the orchid, the orchid is considered not to be present. Therefore, the proposed project will have no effect on the orchid.

8.1.3 Monarch Butterfly

Little suitable habitat is present within the Action Area in part due to the long history of vegetation maintenance activities on the airfield in both sections of the Action Area and the predominance of forested areas not conducive to supporting the Monarch's host plant. Open grassland areas are present within Rwy 4 End where several monarchs were noted during field work but little common milkweed was observed in these areas.

Proposed project activities will occur in forested areas and will not affect grassland areas within the Action Area. Therefore, the proposed project will have no effect on the butterfly.

8.1.4 Listed bats

Suitable summer bat habitat for both federally listed bats is present in both sections of the Action Area. A bat acoustic survey was initiated at the direction of USFWS to determine presence or probable absence of federally endangered Indiana bats and Northern Long-eared bats and proposed federally endangered tricolored bats (*Perimyotis subflavus*) (TCB).

Initial software screening of detected calls identified nine species on at least one night of the survey including calls from NLEBs, IBATs, and TCBs. After qualitative analysis, Northern Long-eared bats and Indiana bats were removed from the species list. Based on these results, the presence of these federally listed bats within the Action Area is unlikely, and therefore, it was concluded that the proposed clearing of forest within the Action Area is not likely to adversely affect these two federally listed species.

USFWS reviewed the bat acoustic survey report and concurred with its results and recommendations. USFWS indicated that "tree clearing and other activities associated with the project are unlikely to affect these species [Indiana and Northern Long-eared bats] regardless of when the activities occur." (see **Appendix F**: Email, Jenny Wong, USFWS, dated September 16, 2024)

However, qualitative analysis did verify two (2) tricolored bat calls and three (3) little brown bat calls, suggesting these species are present within the project area. The tricolored bat is proposed for listing as endangered under the ESA. The TCB is also listed as threatened by the State of Michigan as is the little brown bat (*Myotis lucifugus*). Based on surrounding forest cover and the likelihood of an abundance of suitable roosts for the TCB, USFWS indicated that they "do not expect this project to adversely affect tricolored bats if the trees can be cut outside the species' summer roosting period (May 15 through July 31), as is planned." (See **Appendix F**: Email, Jenny Wong, USFWS, dated September 16, 2024)

In summary, the presence of federally listed NLEBs and IBATs is unlikely within the Action Area and therefore the proposed project is not likely to adversely affect these two species. The presence of state listed TCB and little brown bats, however, is documented by the acoustic survey. USFWS guidance is to conduct project activities outside the summer roosting period for the TCB (May 15 through July 31) to minimize incidental take of these listed bats.

8.1.5 Red Knot

The project area provides limited habitat potential for this species. The Action Area consists of open grassland, wet meadow, scrub-shrub, upland forests and forested wetland, habitats that do not support the red knot's biological needs for food and stopover habitat. The proposed project will have no effect on the rufa red knot.

8.1.6 Snuffbox Mussel, Rayed Bean, Round Hickorynut, and Salamander Mussel

The Action Area contains no modeled potential presence/absence streams on Airport property or within the Action Area (MNFI, 2022b). A perennial excavated ditch is present within the Rwy 4 End Action Area. This ditch is not a high-quality water source and does not contain suitable substrates for any of the identified mussels. No other perennial streams are within the Action Area. Suitable habitat for identified mussels is not present within the Action Area. Therefore, the proposed project will have no effect on these mussels.

8.1.7 Rusty Patched Bumble Bee

The Action Area is within the historical range of the RPBB, but suitable foraging and nesting habitat are limited within the Action Area in part due to the long history of vegetation maintenance activities on the airfield in both sections of the Action Area and swamp hardwood forested wetland and mature upland forested areas not conducive to supporting the bumble bee. Open grassland areas are present within the Rwy 4 End Action Area but are limited. Therefore, the Action Area provides limited potential habitat for the RPBB and the proposed project will have no effect on the bumble bee.

8.2 Migratory Birds

We conclude that this project will have no impact on species identified as Birds of Conservation Concern (BCC) under the MBTA or on Bald Eagles. Project activities will occur before May 15 and/or after July 31 within relatively short time periods. The probability of presence for most identified migratory birds with the exception of the Bald eagle and red-headed woodpecker is indicated to be very low to absent during project activities. Abundant adjacent forested and wetland habitat provide refugia for any birds present during project activities.

9. Effects

The proposed project would remove trees within the Action Area identified as obstructions to existing FAR Part 77 approach surfaces and other imaginary surfaces. In wetland areas, tree cutting and removal would be accomplished without significant or permanent ground disturbance during the winter months. In upland areas, clearing and grubbing is proposed followed by smoothing and grading with reseeding which would keep woody regrowth to a minimum for the future.

9.1 Direct effects

The primary direct effect of this action for the federally listed NLEB and IBAT and the state listed TCB and little brown bat is the loss of potential habitat, specifically foraging habitat and larger trees that are potential roost trees. No known roost trees for any of these bats are present within the Action Area. The proposed action would not affect winter habitat needs since there are no known hibernacula present in the Action Area. Conducting project activities during recommended time periods should avoid reasonable certainty of taking any of the bat species under consideration in this report.

Loss of potential component habitat for the EMR could result from the removal of shrubs and/or trees in wetland areas within the Action Area, potentially impacting feeding, breeding, or sheltering and resulting in displacement of EMR to other less suitable areas. However, the Action Area is not within Tier 1 or Tier 2 habitat. Therefore, EMR are unlikely to be present. By implementing recommended best management practices for projects involving the EMR, there would be no direct effect on the snake.

No in-stream work is proposed for this project. Therefore, there will be no direct effect on any mussels under consideration in this report.

The Action Area appears to provide limited potential habitat for the Monarch butterfly and it is unlikely to be present during project activities. Therefore, there will be no direct effect on the butterfly.

While the Action Area is within the historic range of the Rusty Patched bumble bee, no occurrences of the RPBB are reported for St. Clair County and it is unlikely to be present. Therefore, there will be no direct effect on the RPBB.

10. Impact Avoidance and Minimization Measures

The proposed action includes elements that are designed to reduce adverse effects of the action. Proposed project activities include the removal of trees within an area covering approximately 249 acres split over two sections of the Action Area. Upland areas would be cleared, grubbed, and graded and would be revegetated.

Upland areas on airport property would be cleared first, followed by removal of identified obstructions from private property with existing avigation easements. Easements will need to be negotiated before removal of obstructions can be accomplished on private properties without existing easements.

In forested wetland areas, no ground disturbance is proposed – woody debris will be cut and removed from the site. In consultation with EGLE wetland regulatory personnel, obstruction clearing within wetlands will be accomplished as detailed below. The amount of impact is unknown until more detailed data are analyzed. No prescribed burning, pesticide, or herbicide application is proposed.

10.1 Wetlands

10.1.1 Minimization of wetland conversion

A clearing analysis and plan will be developed to minimize impacts to forested wetlands such that understory trees will remain. This will allow forested wetland areas to remain intact for the foreseeable future. The minimum height of remaining understory trees will be determined based on the terrain and imaginary surface criteria. Minimum heights will vary with distance from the runway end and the underlying terrain since the height of imaginary surfaces varies based on slope of the surface.

10.1.2 Seasonal restrictions

Optimally, tree removals in wetlands will be accomplished under frozen ground conditions to minimize ground disturbance from mechanized equipment. Alternatively, wood pallets, mats or other similar materials will be used to minimize ground disturbance.

10.2 State listed bats

10.2.1 Avoidance measures

Selective tree removals (i.e., individual trees) will be employed to the greatest extent possible, especially in areas where the obstruction density is low or in upland areas on private property with avigation easements. In wetland areas, trees will be cut and removed but grubbing or other land disturbance will be avoided.

10.2.2 Seasonal restrictions

Due to probable absence of federally listed bat species, seasonal tree removal restrictions do not apply for these species. However, for state listed bat species identified during the bat acoustic survey (TCB and little brown bats), tree removal activities will be accomplished during

recommended time periods appropriate for minimizing impacts to any potential state listed bat populations. Recommendations for clearing are based on guidance provided by USFWS and MDNR after review of the presence/probable absence bat survey. Tree clearing will be conducted outside of the summer roosting period for the TCB and little brown bats (May 15 through July 31).

10.3 Eastern Massasauga Rattlesnake

Project activities will occur during the inactive season for the EMR. No hydrologic alterations to groundwater levels are anticipated and no ground disturbance is proposed in wetlands.

Recommended best management practices for projects within the known range of the EMR will be implemented as detailed in the Michigan Environmental Screening BMPs for the eastern massasauga (USFWS, 2017).

- Use of wildlife-safe erosion control materials
- Viewing of the MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video and/or review of the EMR factsheet
- Reporting of any EMR observations (or any other threatened or endangered species) during project implementation

11. Conclusion

Based upon the data sources reviewed above, specialized studies, and recommended determinations made through the Michigan DKey, we conclude that tree clearing activities at this site will have no effect on the rufa red knot, the Monarch butterfly, rayed bean, snuffbox mussel, round hickorynut, or salamander mussel. Further, we conclude that the proposed project will have no effect on the Rusty-patched bumble bee or the eastern prairie fringed orchid. This project will have no impact on birds identified as subject to the MBTA or the Eagle Act.

We conclude the project may affect but will likely not adversely affect the Eastern Massasauga rattlesnake. Recommended best management practices for projects within the known EMR range will be implemented. We conclude the project will have no effect on the Northern Long-eared bat, Indiana bat, tricolored bat or little brown bat. Project activities will be conducted within recommended time frames to minimize adverse effects to bats.

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13. List of Preparers/Contributors

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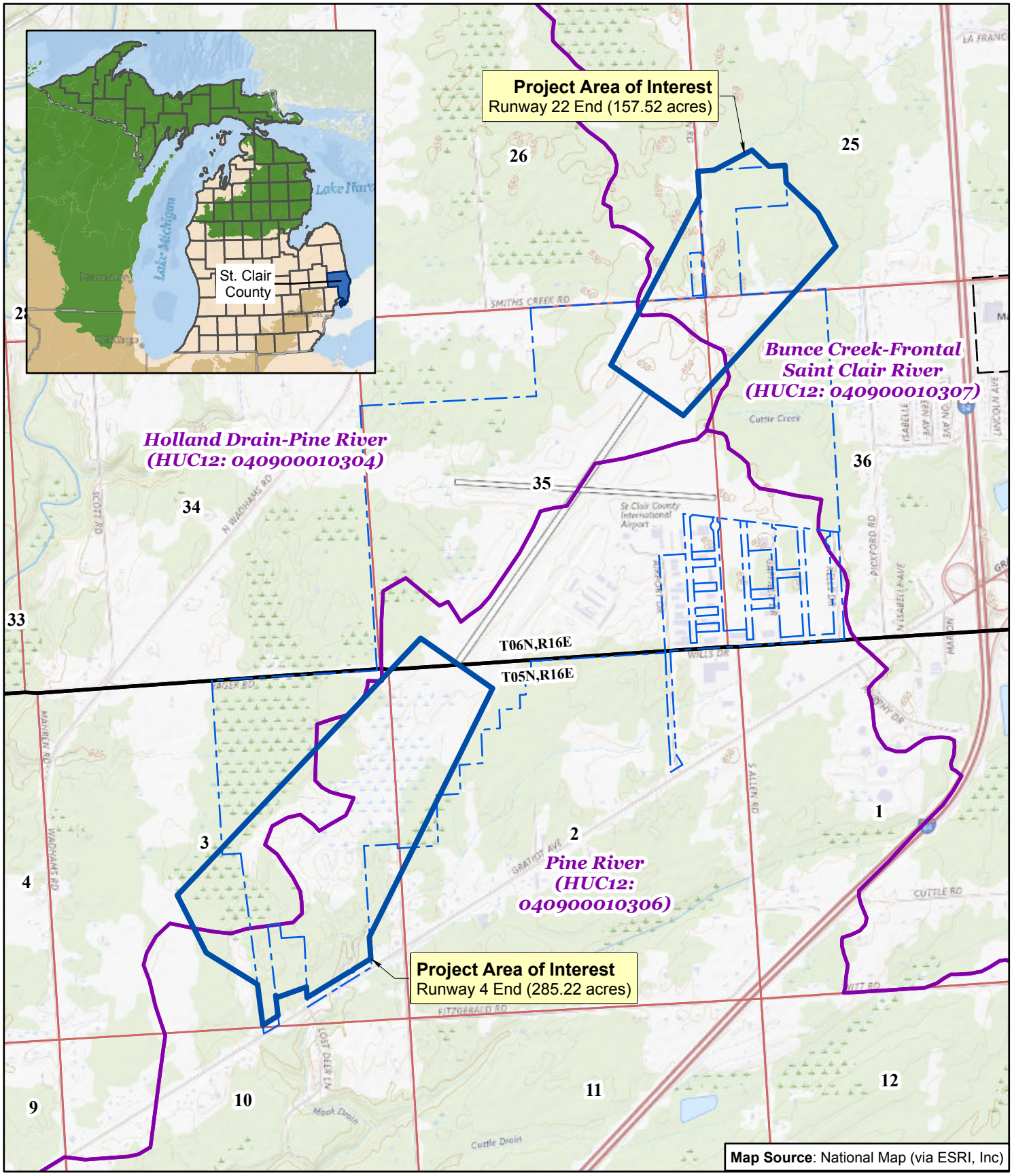
Tulsa, OK 74120
Mead & Hunt, Inc.

Appendix A. Project Location Map and Parcel Accessibility



PROJECT LOCATION MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

0 500 1,000 2,000 Feet

N

Legend

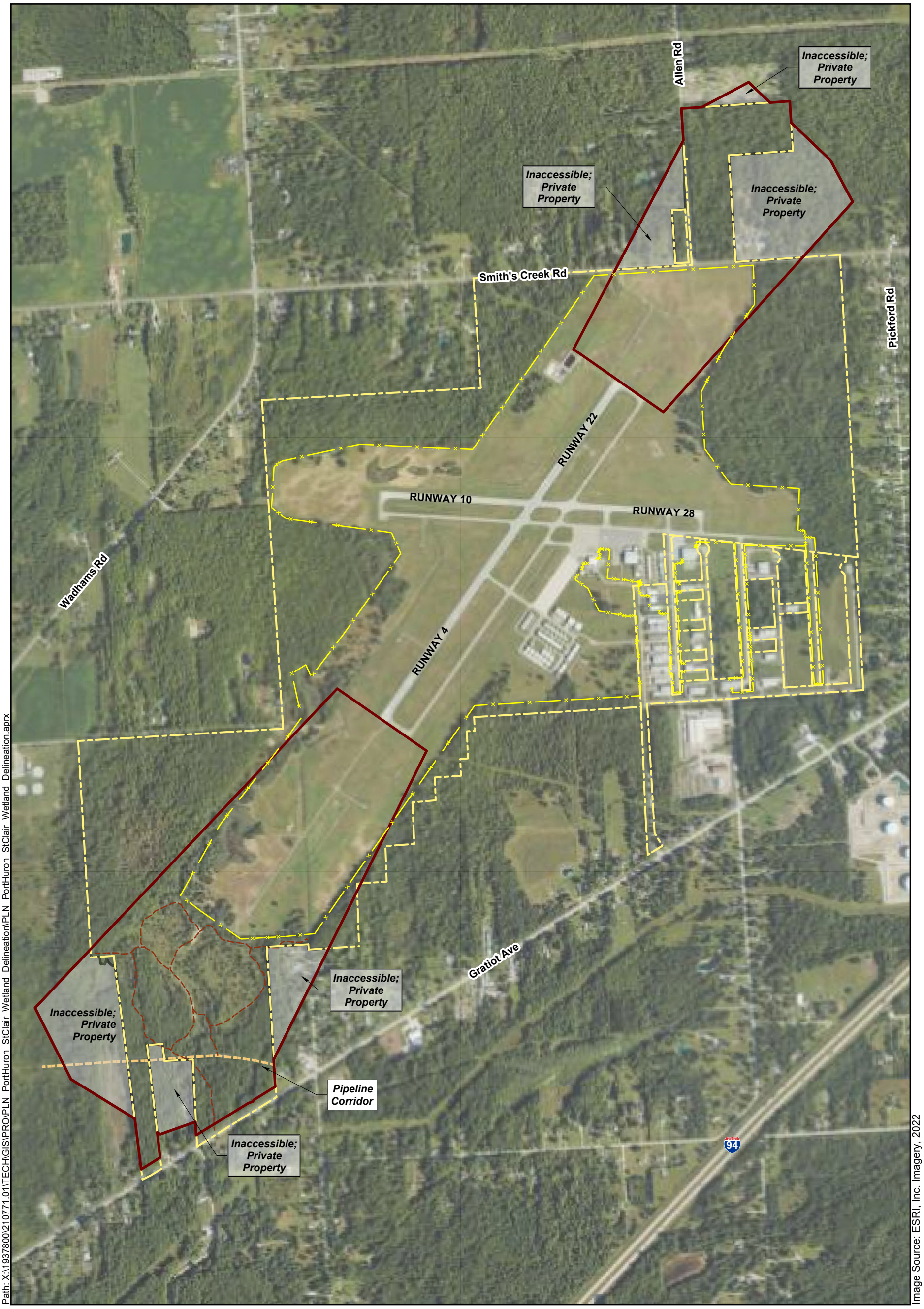
- Project Area of Interest (AOI)
- Airport Property Boundary
- Major Watershed
- County Line
- Municipal Boundary
- PLSS Section Line
- PLSS Township Line

LAND RESOURCE REGION

- K
- L
- M

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



Parcel Accessibility Map

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

0 500 1,000 2,000 Feet

N

LEGEND

- Project Area of Interest (AOI)
- Inaccessible Area/Private Property
- Airport Property Boundary
- Existing Fence
- Pipeline Corridor
- Two-track

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
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USGS Quads: Smiths Creek
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June. 6 - 14, Sept. 25 - Oct. 4, 2023

Appendix B. Proposed Project

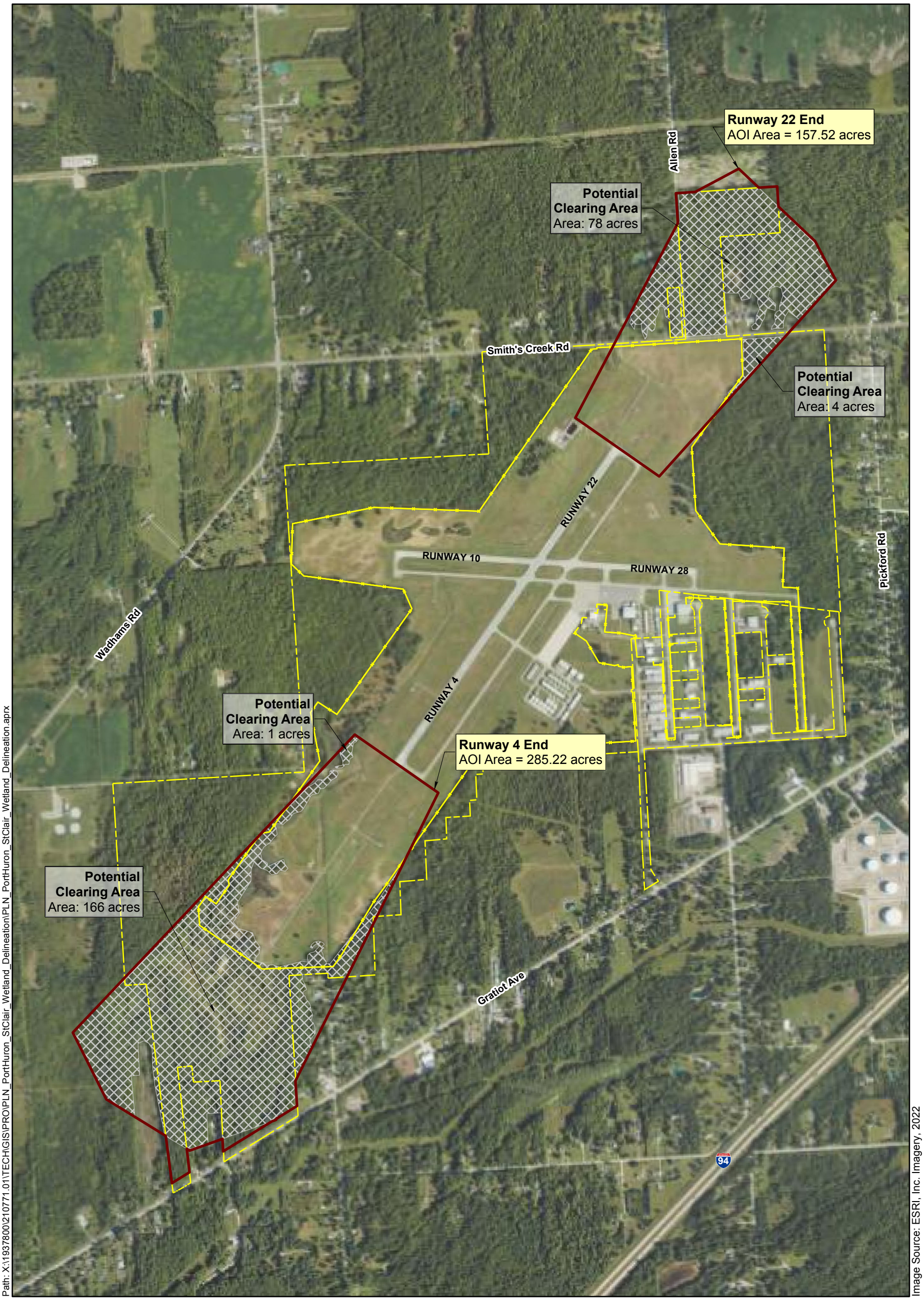

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Image Source: ESRI, Inc. Imagery, 2022

Potential Tree Clearing Overview Map

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

0 600 1,200 1,800 2,400 Feet

N

Legend

- Project Area of Interest (AOI)
- Airport Property Line
- Existing Fence
- Potential Clearing Areas*

* Approximate total potential clearing area = 249 acres.
Final clearing areas to be determined during project design.

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
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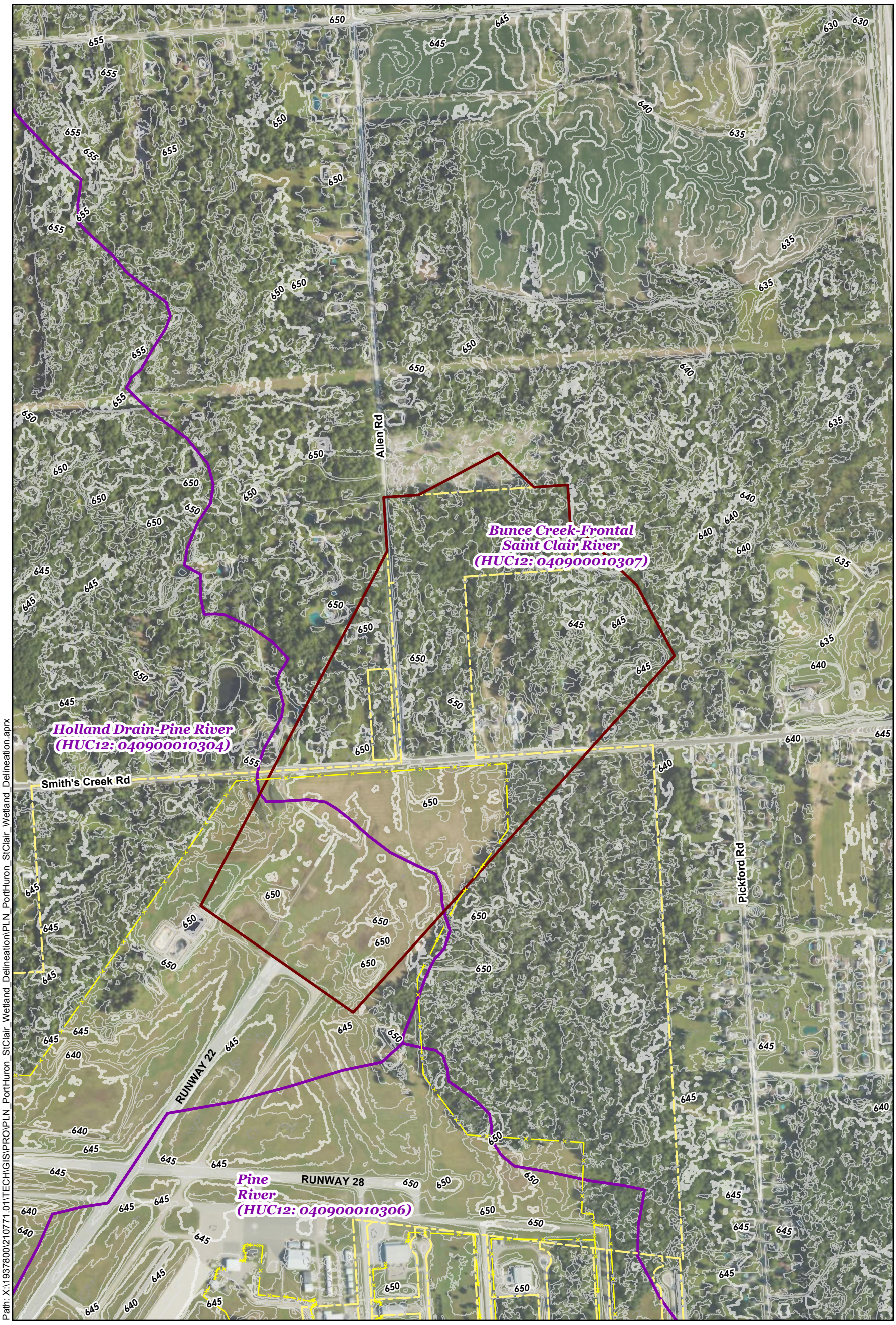
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Appendix C. Site Topography, Aquatic Resources Map, and FEMA Floodplain Map



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TOPOGRAPHY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

Runway 22 End

0 300 600 900 1,200 Feet

N

Legend

- Project Area of Interest (AOI)
- Existing Fence
- Airport Property Boundary
- Major Watershed
- Pipeline Corridor
- Two-track

Contour Type

- Index
- Index Depression
- Intermediate
- Intermediate Depression

Data Sources
1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (https://contours.semcog.org/)
2. Image Source: FSA NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
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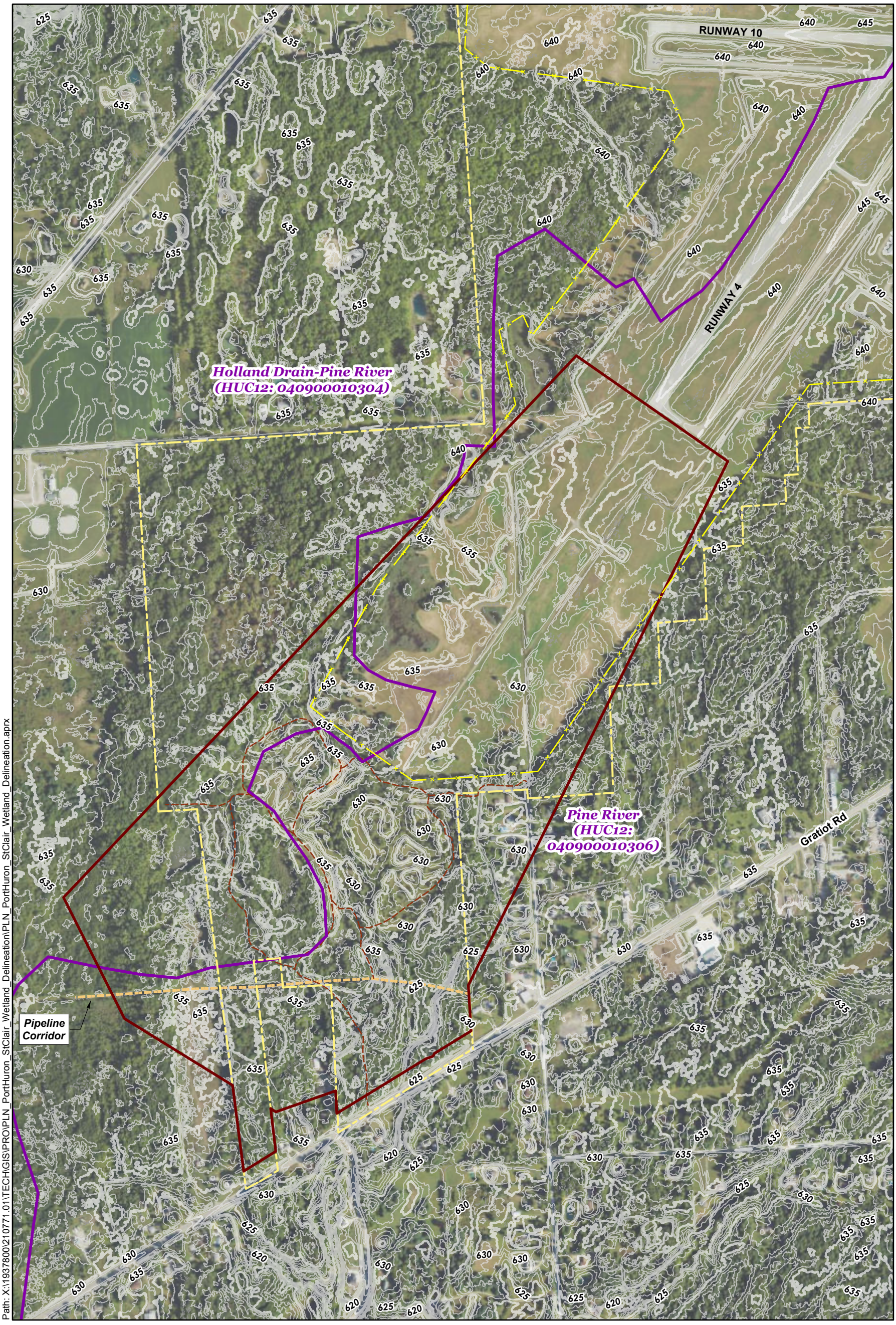

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TOPOGRAPHY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

Runway 4 End

0 300 600 900 1,200 Feet

N

Legend

- Project Area of Interest (AOI)
- Existing Fence
- Airport Property Boundary
- Major Watershed
- Pipeline Corridor
- Two-track

Contour Type

- Index
- Index Depression
- Intermediate
- Intermediate Depression

Data Sources
1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (https://contours.semcog.org/)
2. Image Source: FSA NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
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St. Clair County, MI
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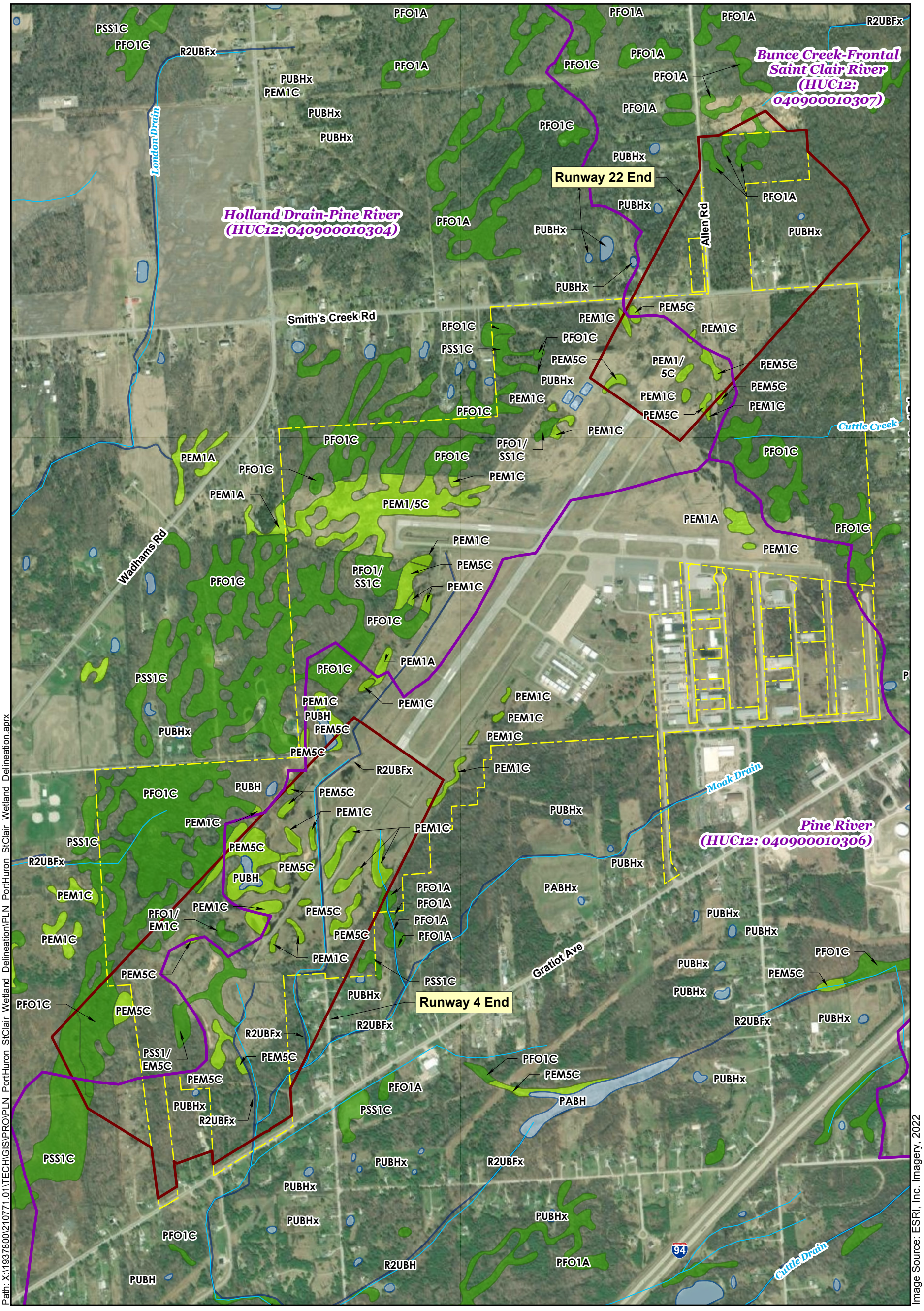
Aquatic Resources Map

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)
- HUC-12 Watershed

NHD Line

- Canal/Ditch

NWI WETLAND TYPE

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

0 500 1,000 2,000 Feet

Data Source:

1. National Wetlands Inventory (NWI) Data downloaded from https://www.fws.gov/program/national-wetlands-inventory/wetlands-data for HUC 04090001; NWI data updated 2015
2. National Hydrography Dataset (NHD) Data downloaded from TNM Download https://apps.nationalmap.gov/downloader/

Project Location

T6N, R16E Sections 25, 26, 35, and 36
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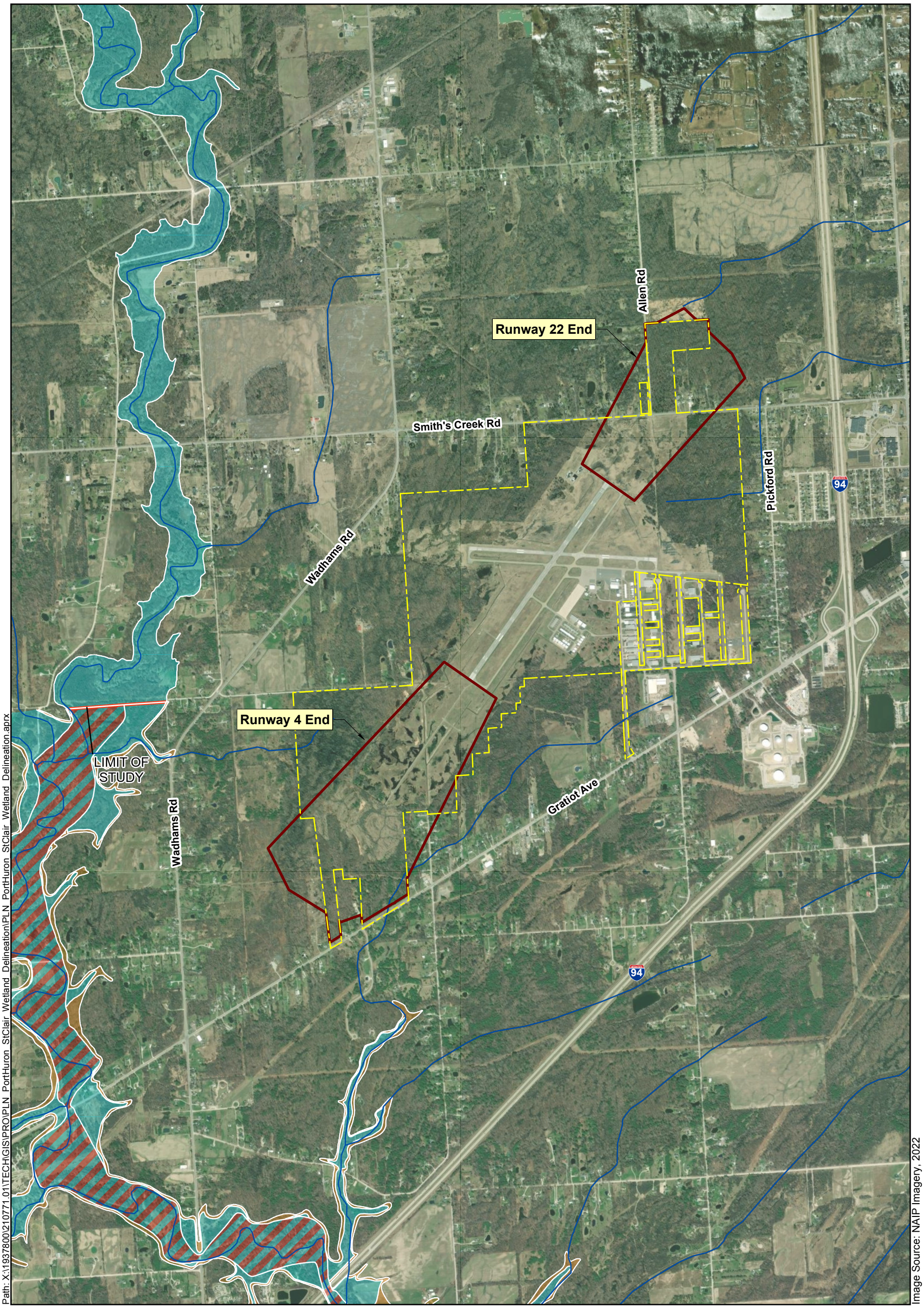
Image Source: ESRI, Inc. Imagery, 2022



FEMA Floodplain Map

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

0 500 1,000 2,000 3,000 Feet

N

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

Flood Hazard Boundaries

- Limit Lines
- SFHA / Flood Zone Boundary

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- 0.2% Annual Chance Flood Hazard

Data Source:
1. FEMA National Flood Hazard Layer (NFHL)
https://hazards.fema.gov/arcgis/rest/services/public/NFHL/MapServer
Map Panel: 26147C0345D (eff. 5/3/2010)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
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Kimball and St. Clair Townships
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June. 6 - 14, Sept. 25 - Oct. 4, 2023

Appendix D. Bird Observations

Sightings, St. Clair State Game Area (SGA), St. Clair County, Michigan
eBird.org

Common Name	Species Name	Count	Year Observed
Eastern Bluebird	*Sialia sialis*	7	2025
Red-tailed Hawk	*Buteo jamaicensis*	1	2025
Dark-eyed Junco	*Junco hyemalis*	12	2024
American Tree Sparrow	*Spizelloides arborea*	6	2024
Black-capped Chickadee	*Poecile atricapillus*	5	2024
American Crow	*Corvus brachyrhynchos*	3	2024
Blue Jay	*Cyanocitta cristata*	3	2024
Northern Cardinal	*Cardinalis cardinalis*	2	2024
American Kestrel	*Falco sparverius*	1	2024
Eastern Screech-Owl	*Megascops asio*	1	2024
Northern Saw-whet Owl	*Aegolius acadicus*	1	2024
American Robin	*Turdus migratorius*	4	2024
Golden-crowned Kinglet	*Regulus satrapa*	3	2024
American Goldfinch	*Spinus tristis*	2	2024
Northern Flicker	*Colaptes auratus*	1	2024
Rough-legged Hawk	*Buteo lagopus*	1	2024
Wild Turkey	*Meleagris gallopavo*	1	2024
Turkey Vulture	*Cathartes aura*	2	2024
White-throated Sparrow	*Zonotrichia albicollis*	2	2024
Killdeer	*Charadrius vociferus*	1	2024
Yellow-rumped Warbler	*Setophaga coronata*	1	2024
Canada Goose	*Branta canadensis*	2	2024
Hairy Woodpecker	*Dryobates villosus*	1	2024
Sandhill Crane	*Antigone canadensis*	1	2024
Savannah Sparrow	*Passerculus sandwichensis*	1	2024
European Starling	*Sturnus vulgaris*	52	2024
Cedar Waxwing	*Bombycilla cedrorum*	15	2024
Downy Woodpecker	*Dryobates pubescens*	1	2024
Mourning Dove	*Zenaida macroura*	1	2024
Red-bellied Woodpecker	*Melanerpes carolinus*	1	2024
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	1	2024
Bobolink*	***Dolichonyx oryzivorus***	**1**	**2024**
Eastern Kingbird	*Tyrannus tyrannus*	1	2024
White-breasted Nuthatch	*Sitta carolinensis*	3	2024
Gray Catbird	*Dumetella carolinensis*	2	2024
Carolina Wren	*Thryothorus ludovicianus*	1	2024
Song Sparrow	*Melospiza melodia*	1	2024
Wood Thrush*	***Hylocichla mustelina***	**1**	**2024**
Red-winged Blackbird	*Agelaius phoeniceus*	3	2024

Common Name	Species Name	Count	Year Observed
Brown-headed Cowbird	*Molothrus ater*	1	2024
Chipping Sparrow	*Spizella passerina*	1	2024
Common Grackle	*Quiscalus quiscula*	1	2024
Common Yellowthroat	*Geothlypis trichas*	1	2024
Indigo Bunting	*Passerina cyanea*	1	2024
Barn Swallow	*Hirundo rustica*	2	2024
Eastern Meadowlark	*Sturnella magna*	2	2024
Ovenbird	*Seiurus aurocapilla*	1	2024
Baltimore Oriole	*Icterus galbula*	1	2024
Eastern Wood-Pewee	*Contopus virens*	1	2024
Green Heron	*Butorides virescens*	1	2024
Red-eyed Vireo	*Vireo olivaceus*	1	2024
Yellow Warbler	*Setophaga petechia*	2	2024
Tree Swallow	*Tachycineta bicolor*	1	2024
Chimney Swift*	*Chaetura pelagica*	3	2024
House Wren	***Troglodytes aedon***	**3**	**2024**
House Finch	*Haemorhous mexicanus*	2	2024
Warbling Vireo	*Vireo gilvus*	2	2024
Blue-winged Warbler	*Vermivora cyanoptera*	1	2024
Great Blue Heron	*Ardea herodias*	1	2024
Horned Lark	*Eremophila alpestris*	1	2024
House Sparrow	*Passer domesticus*	1	2024
Willow Flycatcher	*Empidonax traillii*	1	2024
Magnolia Warbler	*Setophaga magnolia*	1	2024
Tufted Titmouse	*Baeolophus bicolor*	1	2024
Pine Warbler	*Setophaga pinus*	1	2024
Vesper Sparrow	*Pooecetes gramineus*	1	2024
Brown Thrasher	*Toxostoma rufum*	1	2024
Nashville Warbler	*Leiothlypis ruficapilla*	1	2024
Ruby-crowned Kinglet	*Corthylio calendula*	1	2024
Wilson's Snipe	*Gallinago delicata*	1	2024
Northern Harrier	*Circus hudsonius*	1	2024
Mallard	*Anas platyrhynchos*	4	2024
Bald Eagle**	***Haliaeetus leucocephalus***	**1**	**2024**
Pileated Woodpecker	*Dryocopus pileatus*	1	2024
Fox Sparrow	*Passerella iliaca*	1	2024
Northern Shrike	*Lanius borealis*	1	2024
Ring-necked Pheasant	*Phasianus colchicus*	1	2024
Brown Creeper	*Certhia americana*	3	2024
Merlin	*Falco columbarius*	1	2024
Snow Bunting	*Plectrophenax nivalis*	23	2024
Pine Siskin	*Spinus pinus*	6	2023

Common Name	Species Name	Count	Year Observed
Red-breasted Nuthatch	*Sitta canadensis*	4	2023
Purple Finch	*Haemorhous purpureus*	1	2023
Winter Wren	*Troglodytes hiemalis*	1	2023
Eastern Phoebe	*Sayornis phoebe*	1	2023
Hermit Thrush	*Catharus guttatus*	1	2023
Broad-winged Hawk	*Buteo platypterus*	1	2023
Cape May Warbler	*Setophaga tigrina*	1	2023
American Redstart	*Setophaga ruticilla*	1	2023
Great Crested Flycatcher	*Myiarchus crinitus*	1	2023
Cooper's Hawk	*Accipiter cooperii*	1	2023
Eastern Towhee	*Pipilo erythrophthalmus*	1	2023
Field Sparrow	*Spizella pusilla*	2	2023
Ring-billed Gull	*Larus delawarensis*	1	2023
Herring Gull	*Larus argentatus*	1	2023
Belted Kingfisher	*Megaceryle alcyon*	1	2023
Cliff Swallow	*Petrochelidon pyrrhonota*	3	2023
Swainson's Thrush	*Catharus ustulatus*	1	2023
Yellow-billed Cuckoo	*Coccyzus americanus*	1	2022
Black-billed Cuckoo*	***Coccyzus erythropthalmus***	**1**	**2022**
American Woodcock	*Scolopax minor*	1	2022
Double-crested Cormorant	*Phalacrocorax auritus*	18	2022
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	2	2022
Swamp Sparrow	*Melospiza georgiana*	2	2022
Clay-colored Sparrow	*Spizella pallida*	1	2022
Sharp-shinned Hawk	*Accipiter striatus*	1	2022
Rusty Blackbird*	***Euphagus carolinus***	**8**	**2022**
Wood Duck	*Aix sponsa*	2	2022
Purple Martin	*Progne subis*	2	2021
Louisiana Waterthrush	*Parkesia motacilla*	1	2021
Rock Pigeon	*Columba livia*	1	2021

* USFWS Bird of Conservation Concern (BCC)
** Bald and Golden Eagle Protection Act

SOURCE:
e Bird Sightings
Hotspot: St Clair Twp. SGA, St. Clair County, Michigan
https://ebird.org/hotspot/L11538690
accessed January 16, 2025

Bird Observations During June 6 - 15, 2023

Observers: Kim Shannon and Brauna Hartzell

Common Name	Species Name	Date Observed
American crow	*Corvus brachyrhynchos*	June 6, 8, 9
American woodcock and nest	*Scolopax minor*	June 7, 12
Black-capped chickadee	*Peocile atricapillus*	June 9, 12, 13
Blue-gray gnatcatcher	*Polioptila caerulea*	June 8
Blue jay	*Cyanocitta cristata*	June 13
Brown creeper	*Certhia americana*	June 9
Brown-headed cowbird	*Molothrus ater*	June 9
Canada goose	*Branta canadensis*	June 7
Cardinal	*Cardinalis cardinalis*	June 8, 9
Downy woodpecker	*Dryobates pubescens*	June 9
European starling	*Sturnus vulgaris*	June 8
Gray catbird	*Dumetella carolinensis*	June 9, 12, 13
Great blue heron	*Ardea herodias*	June 12
House sparrow	*Passer domesticus*	June 8, 9
Killdeer	*Charadrius vociferus*	Multiple dates
Northern flicker	*Colaptes auratus*	June 8, 9
Ovenbird	*Seiurus aurocapilla*	June 9
Pileated woodpecker	*Dryocuopus pileatus*	June 8, 9, 12, 13
Purple martin	*Progne subis*	June 8
Red-eyed vireo	*Vireo olivaceus*	June 9
Red-headed woodpecker*	***Melanerpes erythrocephalus***	June 8
Red-winged blackbird	*Agelaius phoeniceus*	June 8, 9, 13
Robin	*Turdus migratorius*	June 8, 13
Sandhill cranes	*Grus canadensis*	June 7
Tufted titmouse	*Baeolophus bicolor*	June 8
Turkey vulture	*Cathartes aura*	June 6-9; 12-15
Veery	*Catharus fusecescens*	June 9
White breasted nuthatch	*Sitta carolinensis*	June 8, 9
Wild turkey	*Meleagris gallopavo*	June 6, 8, 9

* USFWS Bird of Conservation Concern (BCC)

Appendix E. Bat Habitat Assessment Report

PREPARED BY

Mead & Hunt

APPENDIX E. BAT HABITAT ASSESSMENT REPORT

ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN)
ENVIRONMENTAL ASSESSMENT FOR RUNWAY 4/22 APPROACH CLEARING
PROJECT NUMBER 1937800-210771.01

FEBRUARY 2025

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CONTENTS

TABLES

APPENDICES

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1. Introduction

Tree clearing within an Action Area is proposed at St. Clair International Airport (PHN or Airport). Clearing areas were identified as obstructions to the Runway 4/22 approaches. The proposed action is needed to remove existing and potential obstructions identified as penetrations to the Federal Aviation Regulation (FAR) Part 77 Imaginary Surfaces, Threshold Siting Surface (TSS), Precision Approach Path Indicator (PAPI) Light Signal Clearance Surface (LSCS) and Obstacle Clearance Surface (OCS), as well as the State of Michigan Licensing Surface. Unmaintained vegetation has the potential to become obstructions to runway approaches in the future.

Mead & Hunt, Inc. (Mead & Hunt) assessed forested areas within the Action Area for potential summer habitat of two federally protected bat species. *Myotis septentrionalis* (Northern long-eared bat or NLEB) and *Myotis sodalis* (Indiana bat or IBAT) are federally protected species wherever found within their range. NLEB and IBAT are both listed as Endangered under the Endangered Species Act of 1973 (ESA). No critical habitat has been identified for either bat within the Action Area.

The Action Area is in Sections 25, 26, 35, and 36, Township 6 North, Range 16 East and in Sections 2 and 3, Township 5N, Range 16 East in Kimball and St. Clair Townships, St. Clair County, Michigan. The Action Area is located on the Smiths Creek 7.5-minute USGS topographic quadrangle and is split into two parts totaling approximately 442.75 acres. A Project Location Map is provided in Appendix E-1.

An assessment of suitable summer bat habitat within the Action Area at PHN was conducted in support of an environmental assessment of proposed actions at the Airport. The objective of the assessment was to determine whether forested areas may provide suitable summer roosting, foraging, or maternity habitat for the protected bats. The assessment was completed based on guidelines from the U.S. Fish & Wildlife Service's (USFWS) *Range-wide Indiana Bat & Northern long-eared bat survey guidelines* (USFWS, 2023). Bat habitat assessments were conducted over two site visits on June 6 –14, 2023, and September 25 – October 4, 2023.

2. Background

2.1 Suitable Summer Habitat Characteristics

2.1.1 Northern Long-eared Bat

Northern long-eared bats hibernate in winter in caves and mines, preferring the constant temperatures, high humidity, and lack of air currents present in these landscape features. The bats generally hibernate from November to early March. Summer finds them in a wide variety of forested habitats roosting singly or in colonies underneath bark, in cavities or crevices of both live trees and snags. Potential roosts can be varied, but suitable roost trees exhibit loose or exfoliating bark and/or dead or dying trees that contain cracks and crevices. The NLEB utilize forests and woodlots that "may be dense or loose aggregates of trees with variable amounts of canopy closure" and "prefer intact mixed-type forests with small gaps (i.e., forest trails, small roads, or forest-covered creeks) in forest with sparse or medium vegetation for foraging and commuting rather than fragmented habitat or areas that have been clear cut." (USFWS, 2023)

Trees suitable for roosts are live trees and/or snags ≥ 3 inches in diameter at breast height (DBH) with exfoliating bark, cracks, crevices, and/or cavities. Individual trees can be suitable roost trees if within 1,000 feet of other forested or wooded habitat; individual trees in highly developed urban areas are extremely unlikely to be suitable habitat for the NLEB (USFWS, 2023).

2.1.2 Indiana Bat

The NLEB and Indiana bat have similar, overlapping habitat requirements. Suitable winter habitat for both bats consists of underground caves and cave-like structures such as abandoned or active mines and railroad tunnels. The ambient temperature requirements for hibernacula favored by Indiana bats are more restricted than NLEBs, with Indiana bats preferring more stable temperatures afforded by larger and more structurally diverse caves or mines (USFWS, 2018).

Suitable summer habitat for Indiana bats, like that of NLEBs, consists of a wide variety of forested/wooded habitats to which they exhibit strong site fidelity. It may also include some adjacent non-forested habitats such as emergent wetlands and agricultural fields and linear features such as fence rows, riparian, or other wooded corridors. In contrast to NLEBs, Indiana bats prefer foraging and hunting along riparian areas.

IBATs form colonies of 60-80 adults and, together with their young, roost in a network of trees comprised of 1-3 primary roost trees along with multiple secondary roost trees. Typical maternity roost trees in southern Michigan are dead or dying trees in more open areas with exposure to solar radiation (USFWS, 2022b).

Similar to NLEBs, Indiana bats prefer forested and wooded areas that "may be dense or loose aggregates of trees with variable amounts of canopy closure" and individual trees exhibiting appropriate bark characteristics may be used as roosts if located within 1,000 feet of other forested or wooded habitat (USFWS, 2023).

Suitable roost trees are live trees and/or snags ≥5 inches DBH that have exfoliating bark, cracks, crevices, and/or hollows.

2.2 Modeled Bat Habitat

USFWS developed a bat habitat suitability model to identify high-priority areas where the bats are most likely to inhabit. The model was initially developed for the Indiana bat and was later extended to include the NLEB.

The USFWS Michigan All-Species Michigan Determination Key (Dkey) provides recommended determination(s) for some species within the Action Area based on information provided by the user through an interview process. USFWS uses modeled bat habitat areas in part to assess whether proposed projects may cause indirect adverse effects or harm to ESA-listed bats.

The Rwy 4 End of the Action Area overlaps modeled bat habitat areas. The Rwy 22 End does not overlap modeled bat habitat in areas proposed for clearing. Modeled areas represent areas where the bats have a higher likelihood of occurring.

2.3 Project Setting

The Action Area covers approximately 442.74 acres, split into two sections covering the runway approach surfaces on airport property and private lands. The Rwy 22 End Action Area is the smaller of the two sections, covering 157.5 acres; the Rwy 4 End Action Area covers 285.2 acres. Approximately 5,100 feet separates the two sections.

St. Clair County is situated within the Huron/Erie Lake Plains Ecoregion (EPA Level III Ecoregion: 57) and is split over two Level IV Ecoregions: the Saginaw Lake Plain Ecoregion (EPA Level IV Ecoregion: 57e) to the north of the City of Port Huron and the Maumee Lake Plain (EPA Level IV Ecoregion: 57a) to the south (US EPA, 2007). The St. Clair River flows to the south from Lake Huron to Lake St. Clair and forms the boundary between the United States and Canada. The Maumee Lake Plain Ecoregion extends from Port Huron along the St. Clair River and the Lake St. Clair and Lake Erie coastlines. Part of the Pleistocene Maumee glacial lake plain, which encompassed the Lake Erie basin, the Maumee Lake Plain contains “clayey lake deposits, poorly drained fertile soils, and water-worked glacial till” (US EPA, 2007). The warmer temperatures of this region and its position to the west of Lake Erie results in little lake effect snow.

Well-drained areas supported closed-canopy forests composed primarily of beech, sugar maple, hickory, and basswood; a mix of American elm, red ash, silver maple, and other deciduous swamp species occupied less well-drained sites. Oak-hickory forest, oak savanna, or dry prairies inhabited sandier beach ridges. The wet prairies of the lake plain were dominated by grasses including bluejoint grass, prairie cordgrass, and big bluestem (US EPA, 2007), and yielded to lowland hardwoods (pin oak, silver maple, swamp white oak, black tupelo, and burr oak) with early settlement drainage practices that effectively lowered the water table.

Pre-settlement vegetation in the vicinity of the Rwy 4 End shows beech-sugar maple forest and patches of mixed hardwood swamp. The Rwy 22 End falls within a large area covered by mixed hardwood swamp (MNFI, 2024).

3. Methodology

Mead & Hunt created CAD/GIS spatial data files for seventy-four (74) areas within an Action Area covering a total of 442.74 acres over two areas in the Runway 4/22 approach surfaces. These areas represent groupings of identified obstructions to the approach surfaces. Seven additional assessments were completed for forested areas identified in the field as containing potential habitat (Areas 500 – 506). The assessment field work was performed from June 7 – 11, 2023 and September 25 – October 4, 2023. Biologists Brauna Hartzell and Kim Shannon (Mead & Hunt, Inc.) completed the field-based bat habitat assessment.

During the on-site assessments, forest characteristics were evaluated and recorded based on procedures and example forms from USFWS bat habitat assessment guidelines (USFWS, 2023).

General forest characteristics recorded include:

- Dominant tree species,
- Density based on canopy > 50 feet, midstory between 20 and 50 feet, and understory less than 20 feet,
- Size composition based on DBH ranging from 3-8 inches DBH for small trees, 9-15 inches DBH for medium trees and > 15 inches DBH for large trees, and
- Presence of suitable snags.

Data at each assessment area was recorded electronically using Survey 123 software (ESRI, Inc.) via a form specifically made for the assessments using the USFWS guidelines (USFWS, 2023). Data recorded at each assessment site included the presence and size of streams, ponds, pools, or wetlands; whether water resources within forested areas are open and accessible to bats; the density of canopy at multiple levels; percentage of trees with exfoliating bark; dominant mature tree species; size composition by DBH; and the number of suitable snags. A final assessment of habitat suitability was made for each bat species.

For large assessment areas, multiple forms were filled out to cover the range of forest characteristics within the assessment area. Multiple photos were also taken at each assessment area to characterize the site by photographing the dominant trees' size and quantity. Perimeter/edge photos were also taken when sites were not located within dense forest.

Several assessment areas located on private property were not accessible. Where possible, the exterior of the assessment area was examined from road rights-of-way (ROW) or from adjacent parcels. Habitat suitability determinations for these areas were made on the basis of desktop resources such as aerial

photography and general site observations.

Modeled bat habitat GIS data (version 1) was downloaded from USFWS (accessed at https://www.fws.gov/media/indiana-bat-habitat-suitability-model-michigan-d-key). A spatial analysis of proposed tree clearing areas and modeled bat habitat was performed to assess the amount of modeled area that may be impacted by proposed tree clearing activities.

4. Results

4.1 General Site Observations

4.1.1 Rwy 22 End Action Area

At the Runway 22 end, regular vegetative maintenance occurs within the perimeter fence; this area is permanently maintained in a grassland state. North of Smiths Creek Road, nearly all lands within the Action Area are forested, with the exception of a few residences along the road corridor.

Forested areas here are comprised of a closed canopy forest dominated by a mature mix of *Acer rubrum* (red maple), *Ulmus americana* (American elm), *Fraxinus pennsylvanica (*green ash), *Quercus bicolor* (swamp white oak), *Tilia americana* (basswood), *Carpinus caroliniana* (American hornbeam), and *Populus deltoides* (cottonwood) on topography marked by shallow depressional areas and slight rises. These areas are seasonally flooded, providing a seasonally restricted water source.

Invasive species have impacted the quality of the forested block north of Smiths Creek Road, especially in conjunction with residential properties. On airport property, the southern portion of the forested block has seen some tree removals and invasive *Celastrus orbiculatus* (Oriental bittersweet) has taken hold. *Frangula alnus* (glossy buckthorn) is also present in abundance in this area.

Further to the north on airport property, the quality of the forested block is more intact with many large (>15 inch DBH) trees in a relatively loose and open understory.

4.1.2 Rwy 4 End Action Area

Habitat is more varied within the Rwy 4 End Action Area, ranging from mature swamp hardwood forests and mature upland forested patches to heavily maintained grassland areas. A large, complex scrub-shrub wetland dominated by *Alnus incana* (speckled alder), *Cornus racemosa* (gray dogwood), *Cephalanthus occidentalis* (buttonbush), *Salix interior* (sandbar willow), and *Salix discolor* (pussy willow) is situated in the open center of the Action Area alongside sand blowouts in the higher landscape positions. Young cottonwoods are also present in some of the drainages. Drainageways throughout the Action Area generally carry drainage to the south to the Moak Drain, located outside of the Action Area.

Mature swamp hardwood forests are located to the south and west of the scrub-shrub wetland complex. Red maple is a prominent component of all these wetlands along with *Acer saccharinum* (silver maple), green ash, cottonwood, swamp white oak, American hornbeam, *Populus tremuloides* (quaking aspen), and *Salix nigra* (black willow). American elm is a minor component of the tree stratum in many of these forests.

Upland forested areas were dominated by conifers such as *Pinus strobus* (white pine), *Pinus sylvestris* (scotch pine), *Populus grandidentata (big tooth aspen), Quercus rubra* (red oak), *Sassafras albidum (sassafras), and Hamamelis virginiana* (American witch-hazel).

A perennial water source is present within several ditches that drain the southern half of the airfield to the Moak Drain. Other areas within this section of the Action Area are marked by seasonal flooding in depressional areas followed by drying in later parts of the growing season. A large shallow marsh located on the airfield is dominated by common reed and, at multiple field visits under varying climatic conditions, consistently contained standing water, potentially providing a reliable source of water and foraging potential despite the lack of roosting habitat.

4.2 Field Assessment

Mature live trees ≥ three inches DBH with furrowed, loose, scaled, or plated bark are those most likely to provide roost trees for the NLEB. Large diameter trees, especially oaks, are suitable roost trees for the IBAT. For the purposes of this survey, trees greater than five inches DBH were considered suitable roost trees for the IBAT.

The mature, dominant trees encountered and their bark characteristics are summarized in **Table 1**. Assessment Area summaries are presented below.

TABLE 1 DOMINANT TREE SPECIES AND MATURE BARK CHARACTERISTICS

Common Name	Species Name	Bark Characteristics	Suitable Roost Tree
Quaking aspen	*Populus tremuloides*	Smooth	No
Red maple	*Acer rubrum*	Furrowed	Yes
Red oak	*Quercus rubra*	Deeply furrowed	Yes
Swamp white oak	*Quercus bicolor*	Furrowed, plated	Yes
White oak	*Quercus alba*	Furrowed	Yes
Black Cherry	*Prunus serotina*	Furrowed, plated	Yes
Big tooth aspen	*Populus grandidentata*	Smooth	No
Silver Maple	*Acer Saccharinum*	Vertical strips, scales	Yes
White pine	*Pinus strobus*	Shallow plates	No
Paper birch	*Betula papyrifera*	Loose, papery	Yes
Cottonwood	*Populus deltoides*	Deeply furrowed	Yes
Red pine	*Pinus resinosa*	Scaled, plated	Yes
Green ash	*Fraxinus pennsylvanica*	Furrowed	Yes
Elm	*Ulmus americana*	Furrowed	Yes

Immature trees (less than 8 inches DBH) were encountered in various locations. Many of these immature tree species do not have the furrowed, scaled, or loose bark required for suitable bat habitat. Other

species, such as quaking aspen, have relatively smooth bark at maturity and do not provide suitable bat habitat. Dead, standing snags of less than three inches DBH also did not provide suitable bat habitat.

Maps showing the Assessment Areas and habitat suitability determinations, along with a summary table, are presented in **Appendix E-3**. Assessment forms are included in **Appendix E-4**.

4.2.1 Habitat Suitability Determination

4.2.1.1 Suitable Summer Habitat

Rwy 4 End Action Area

Suitable summer habitat is found at both ends of the runway in areas outside of the perimeter fence. Nearly all area within the Rwy 4 End Action Area contains modeled bat habitat. Larger assessment areas (Areas 1, 5, 7, 18, 25, and 502) exhibited some general similarities.

Most of these areas contain swamp hardwood habitat which supplies a seasonal water source. Located in a somewhat higher landscape position, Area 18 is an upland forest. It is on private property but is directly adjacent to airport property and was assessed in the field.

The closed canopied, contiguous forested area within these assessment areas is dominated by tall (> 50 ft in height) red maple, white pine, and black cherry with predominantly medium sized trees between 9 and 15 inches DBH and large trees >15 inches DBH. Some large cottonwoods are also present in wetter areas; drier areas included paper birch. These mixed-age stands generally had a varied and fairly open understory, including immature cherry, sassafras, alder, white oak, shagbark hickory, and red oak. Multiple suitable snags are present in each of these assessment areas. Water resources are limited to seasonal availability in depressional areas; however, a perennial ditch does flow through the Action Area, and there is a shallow marsh to the north of these areas that would provide availability to water during the summer months. This part of the Action Area sees little human disturbance except for occasional off-road recreational activities.

Most of the forested area outside of the perimeter fence is determined to contain suitable summer bat habitat. Portions of the Rwy 4 End Action Area within the perimeter fence contain small patches of white pine, isolated individual trees, or patches of small diameter non-exfoliating trees. These assessment areas are determined to not contain suitable summer bat habitat.

Rwy 22 End Action Area

Assessment area 64 is the largest block of forested area at 18.6 acres. Area 67 is the second largest assessment area at almost 12 acres and is on private property. It is assumed to hold similar forested habitat to that contained in Area 64. Located on the

west side of Allen Road and covering about 5 acres, Area 61 was evaluated on airport property, but the majority of the Assessment area is located on private property and could only be assessed from the adjacent airport-owned parcel. The Rwy 22 End Action Area contains no modeled bat habitat.

Seasonal availability of water resources is present in the swamp hardwood habitat of Area 64. The area exhibits a closed canopy with a majority of trees > 50 feet tall and is dominated by large (>15 inches DBH) red maple, cottonwood, and swamp white oak with a fairly cluttered understory of saplings and small trees. Multiple large snags are present. Non-dominant trees are shagbark hickory, elm, paper birch, and American hornbeam.

The south part of Area 64 (see Assessment form 64C) has seen some clearing of planted red pines along the road in the past, with a lot of slash still present. This portion is dominated by small trees <8 inches DBH and invasives, including Oriental bittersweet and glossy buckthorn. Residences and traffic along Smiths Creek Road are regular human and noise disturbances. The north part of Area 64 is more intact and less disturbed by previous clearing activities and invasive species.

The east half of Area 61 (located on airport property) has likely seen previous clearing in the southern half. The understory in the southern half is generally cluttered with small diameter trees and saplings, and in more open areas, invasive common reed is present. The northern half of the assessment area is less disturbed. Dominant trees are small and medium-sized cottonwood, quaking aspen, green ash, and red maple. Larger trees and a more open structure are visible in the western portion of the assessment area on private property. The presence of multiple large cottonwoods and multiple snags within the assessed portion of the Area 61 makes for suitable summer habitat, though it is of lower quality compared to the assessment areas east of Allen Road.

Overall, this end of the Action Area contains lower-quality bat habitat. However, portions of these areas contain suitable summer habitat. Therefore, given that fairly large pockets of suitable habitat are present, the Rwy 22 End is considered as one block for project activities.

4.2.1.2 Unsuitable Habitat

Unsuitable habitat was deemed present for a number of Assessment Areas. Unsuitable habitat consisted of individual trees not exhibiting appropriate bark characteristics, individual trees or small stands of trees associated with residences, stands of immature trees < 8 inches DBH with smooth bark, or larger stands of mature trees such as quaking aspens or white pine with non-exfoliating bark.

Unsuitable habitat covers small assessment areas varying in size from about 500 sq. feet to approximately 1.2 acres, with the median being about 0.05 acres in size.

4.3 Modeled Bat Habitat Spatial Analysis

Appendix E-5 presents the results of a spatial overlay analysis of potential tree clearing areas with modeled NLEB bat habitat areas. The Rwy 22 End Action Area does not contain any modeled bat habitat. The Rwy 4 End Action Area contains approximately 164 acres of potential tree clearing within modeled habitat. Approximately 5,200 feet separates the two sections of the Action Area.

4.4 Assessment Summary

Habitat suitability determinations are summarized in **Table 2** below, along with recommendations for clearing based on guidance provided by USFWS relating to the location of the project within modeled summer habitat and more than five miles from a known hibernaculum (USFWS, 2022b). The more restrictive avoidance dates associated with modeled habitat (April 15 through September 30) are recommended for the whole project despite the Rwy 22 End Action Area containing no modeled habitat. The more restrictive avoidance dates are appropriate given that suitable summer habitat is present within the Rwy 22 End. These dates also provide for a consistent time frame for planning of project activities.

Habitat suitability determinations for Assessment Areas located on private parcels were made on the presence of modeled bat habitat or on observations made from adjacent assessed forested areas where similar habitat was reasonably assumed to be present on inaccessible lands.

TABLE 2 BAT ASSESSMENT SITE SUMMARY WITH RECOMMENDATIONS

Assessment Area	Habitat Description	Suitability Determination	Recommendation
1	Red maple/black cherry mixed forest	Suitable habitat is present for northern long-eared bat (NLEB), Indiana bat	Avoid cutting April 15 through September 30*
2	Assumed red maple mixed forest**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
3	Red maple/swamp white oak mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
4	Red maple/paper birch mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
5	Red maple/black cherry/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
6	Red maple/white oak/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
7	Red maple/white pine/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
8	Red oak/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*

Assessment Area	Habitat Description	Suitability Determination	Recommendation
9	Red maple/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
10	Red maple/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
11	Red maple/swamp white oak mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
12	Red maple mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
13	Assumed red maple mixed forest**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
14	Red maple/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
15	Big tooth aspen/red maple mixed forest	Suitable habitat is present for NLEB; suitable habitat is not present for Indiana bat	Avoid cutting April 15 through September 30*
16	Red maple/white pine/paper birch mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
17	Assumed Red maple/white pine/paper birch/sugar maple/black cherry mixed forest**	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
18	Red maple/white pine/paper birch/sugar maple/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
19	Individual tree (unknown species)	Assume unsuitable habitat	Approved for clearing
20	Individual tree (unknown species)	Assume unsuitable habitat	Approved for clearing
21	Individual white pine	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
22	Individual quaking aspen	Unsuitable habitat	Approved for clearing
23	Individual quaking aspen	Unsuitable habitat	Approved for clearing
24	Individual red maple	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
25	Red maple/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
26	Quaking aspen, big tooth aspen group	Unsuitable habitat	Approved for clearing
27	Quaking aspen, red pine isolated stand	Unsuitable habitat	Approved for clearing
28	Quaking aspen isolated stand	Unsuitable habitat	Approved for clearing
29	Cottonwood cohort	Suitable habitat is present for NLEB; suitable habitat is	Avoid cutting April 15 through September

Assessment Area	Habitat Description	Suitability Determination	Recommendation
		not present for Indiana bat	30*
30	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
31	Cottonwood cohort	Suitable habitat is present for NLEB; suitable habitat is not present for Indiana bat	Avoid cutting April 15 through September 30*
32	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
33	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
34	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
35	Quaking aspen, cottonwood	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
36	Immature (small dbh) cottonwood, willow, dead shrubs	Unsuitable habitat	Approved for clearing
37	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
38	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
39	Immature (small dbh) cottonwood cohort	Unsuitable habitat	Approved for clearing
40	Cottonwood/paper birch mixed forest	Suitable habitat is present for NLEB; suitable habitat is not present for Indiana bat	Avoid cutting April 15 through September 30*
41	Quaking aspen/white pine mixed forest	Unsuitable habitat	Approved for clearing
42	Quaking aspen/white pine mixed forest	Unsuitable habitat	Approved for clearing
43	Quaking aspen stand	Unsuitable habitat	Approved for clearing
44	Immature (small dbh) cottonwood cohort	Unsuitable habitat	Approved for clearing
45	Big tooth aspen/white pine mixed forest	Unsuitable habitat	Approved for clearing
46	Immature (small dbh) cottonwood cohort	Unsuitable habitat	Approved for clearing
47	Immature (small dbh) cottonwood cohort	Unsuitable habitat	Approved for clearing
48	Immature (small dbh) cottonwood cohort	Unsuitable habitat	Approved for clearing
49	Immature quaking aspen/white pine mixed forest	Unsuitable habitat	Approved for clearing
50	Immature (small dbh) cottonwood/quaking aspen	Unsuitable habitat	Approved for clearing
51	Quaking aspen stand	Unsuitable habitat	Approved for clearing

Assessment Area	Habitat Description	Suitability Determination	Recommendation
52	Quaking aspen, big tooth aspen stand (small bbh)	Unsuitable habitat	Approved for clearing
53	Assumed Quaking aspen, big tooth aspen stand (small dbh)	Unsuitable habitat	Approved for clearing
54	Quaking aspen, big tooth aspen stand (small dbh)	Unsuitable habitat	Approved for clearing
55	Quaking aspen/silver maple stand	Unsuitable habitat	Approved for clearing
56	Quaking aspen/white pine stand	Unsuitable habitat	Approved for clearing
57	Quaking aspen stand	Unsuitable habitat	Approved for clearing
58	Assumed red maple mixed forest**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
59	No trees present; wetland site	Unsuitable habitat	Approved for clearing
60	Individual tree (unknown species)**	Assume unsuitable habitat	Approved for clearing
61	Quaking aspen/green ash/cottonwood/red maple	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
62	Individual tree (unknown species)**	Assume unsuitable habitat	Approved for clearing
63	Small copse of trees (unknown species)**	Assume unsuitable habitat	Approved for clearing
64	Large site with red maple, swamp white oak, paper birch, red pine	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
65	Cottonwood	Unsuitable habitat	Avoid cutting April 15 through September 30*
66	Quaking aspen copse with snags	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
67	Assume red maple, swamp white oak, paper birch, red pine**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
68	Assume red maple, swamp white oak, paper birch, red pine**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
69	Assume red maple, swamp white oak, paper birch, red pine**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
70	Cottonwood copse	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
71	White/ red pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
72	White/ red pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
73	Assume isolated tree**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September

Assessment Area	Habitat Description	Suitability Determination	Recommendation
			30*
74	Assume isolated tree**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
500	Willow, alder and aspen copse	Unsuitable habitat	Approved for clearing
501	Isolated jack pine	Unsuitable habitat	Approved for clearing
502	White oak/red oak/paper birch mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
503	Red maple/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
504	Red maple dominant	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
505	White pine dominant	Unsuitable habitat	Approved for clearing
506	Red maple/white pine/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*

* USFWS recommended dates for avoiding reasonable certainty of taking Indiana bats in modeled summer habitat and more than five miles from a known hibernaculum (USFWS, 2022b)

** Assessment area inaccessible in field; habitat suitability based on presence of modeled bat habitat or adjacent assessed forested areas

5. Conclusions

The eighty-one (81) field assessments were completed in areas proposed for tree clearing during field work in August and October 2023. Areas within the Action Area have either been approved for clearing based on the lack of suitable bat habitat or could be cleared after specific dates related to summer habitat use.

6. References

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7. List of Preparers/Contributors

The preparers of this document are:

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Appendix E-1. Project Location Map

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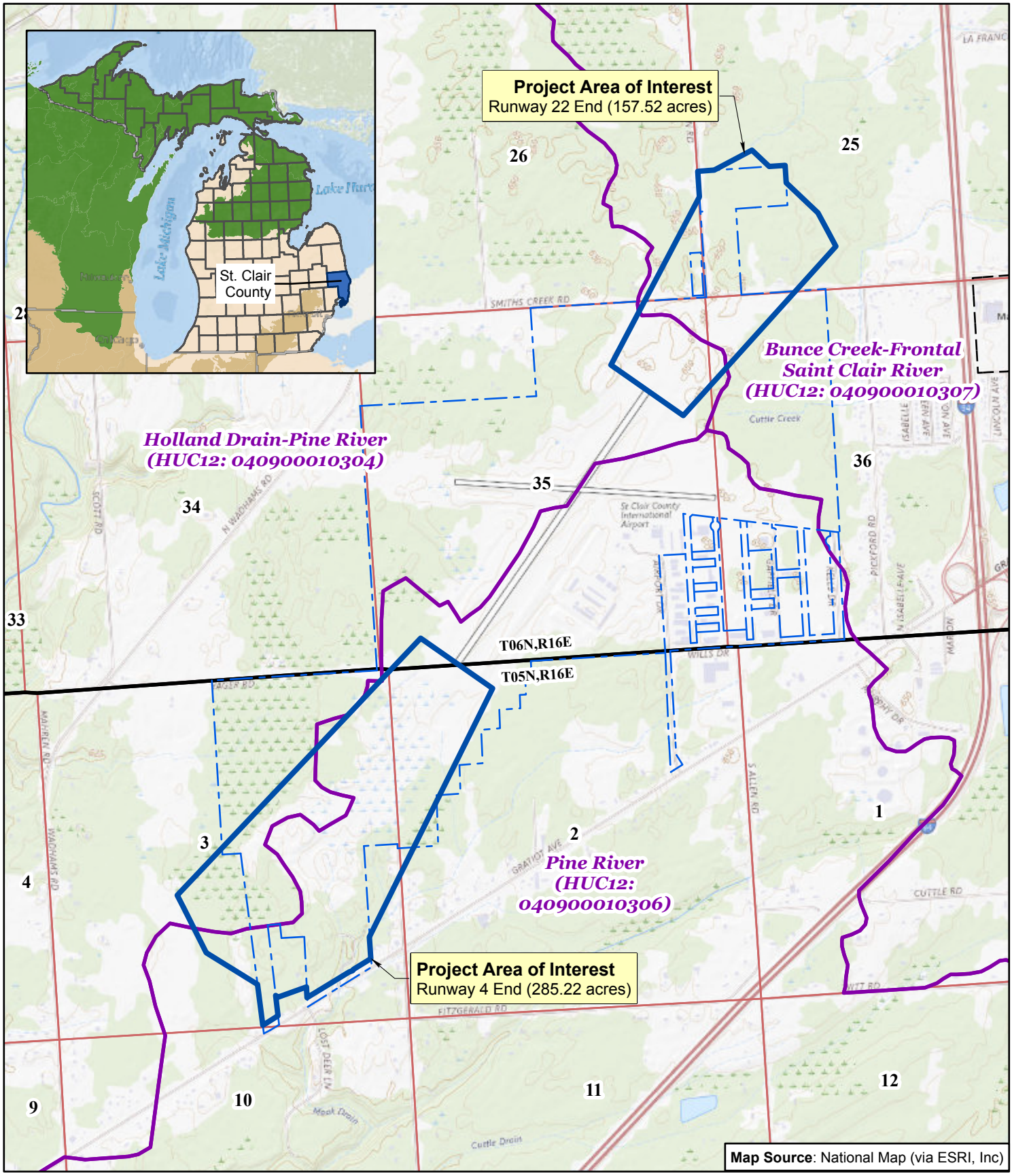

PROJECT LOCATION MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

0 500 1,000 2,000 Feet

N

Legend

- Project Area of Interest (AOI)
- Airport Property Boundary
- Major Watershed
- County Line
- Municipal Boundary
- PLSS Section Line
- PLSS Township Line

LAND RESOURCE REGION

- K
- L
- M

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

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Appendix E-2. Topography and FEMA Floodplain Maps

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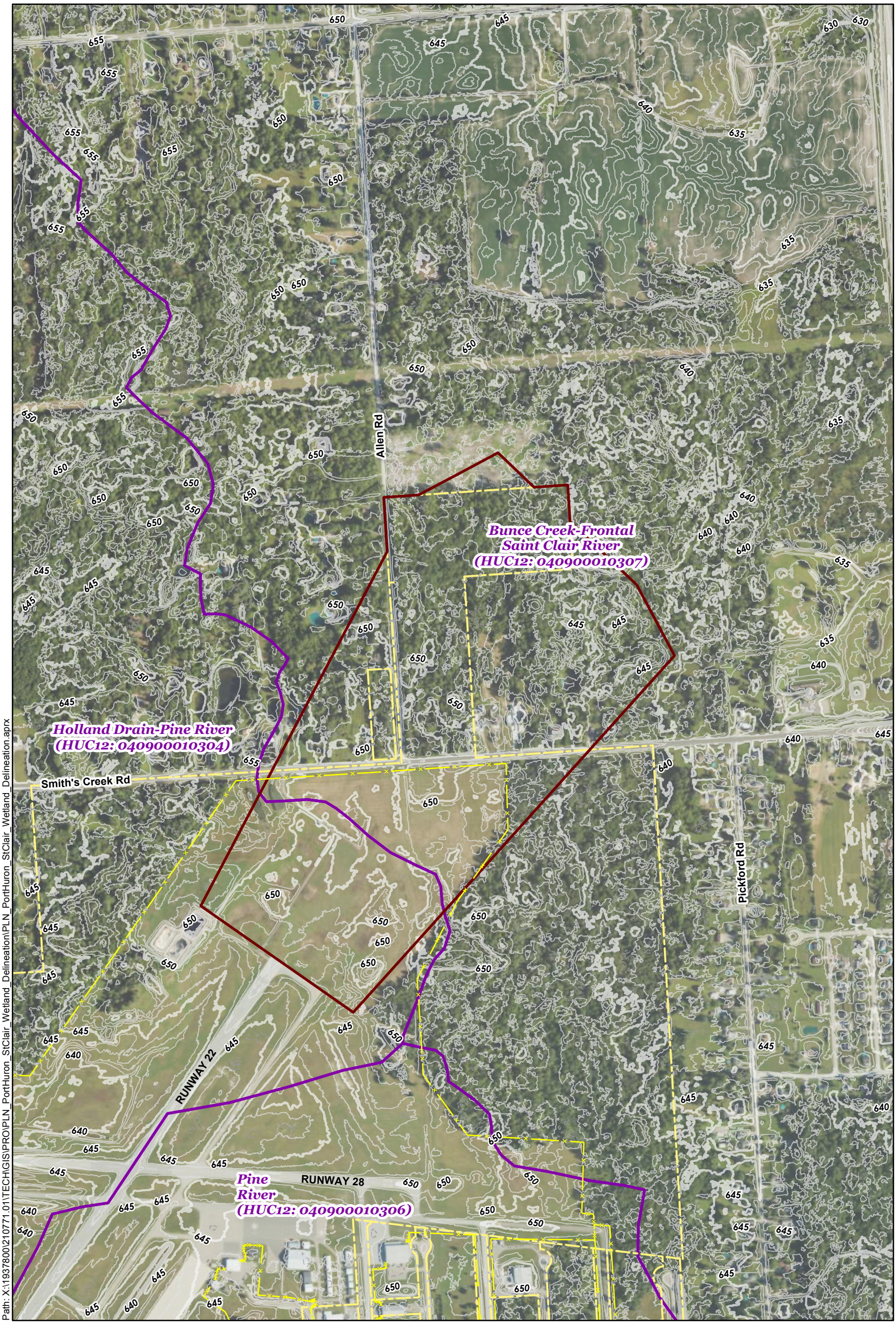

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TOPOGRAPHY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

Runway 22 End

0 300 600 900 1,200 Feet

N

Legend

- Project Area of Interest (AOI)
- Existing Fence
- Airport Property Boundary
- Major Watershed
- Pipeline Corridor
- Two-track

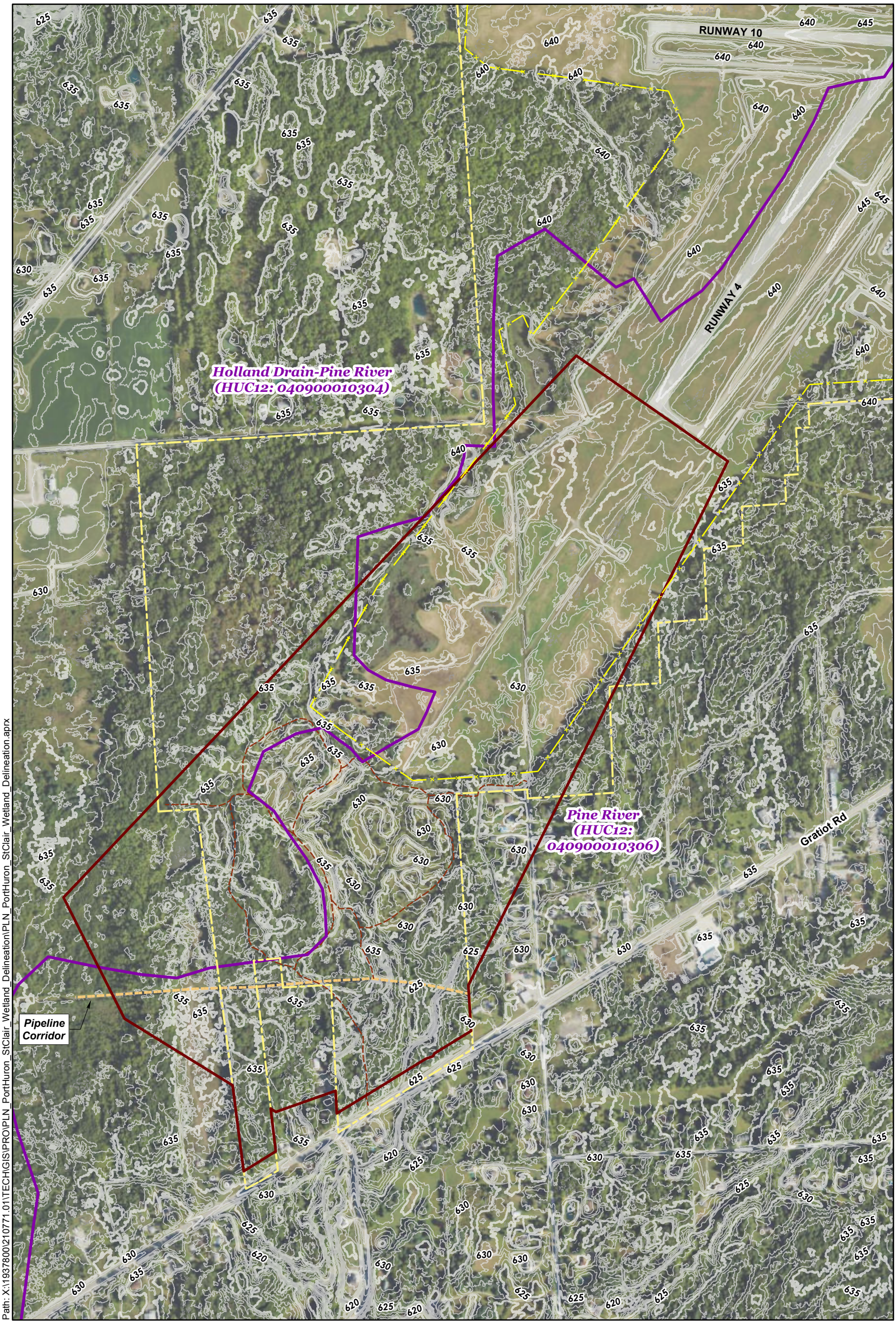
Contour Type

- Index
- Index Depression
- Intermediate
- Intermediate Depression

Data Sources
1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (https://contours.semcog.org/)
2. Image Source: FSA NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Townsip
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



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TOPOGRAPHY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

Runway 4 End

0 300 600 900 1,200 Feet

N

Legend

- Project Area of Interest (AOI)
- Existing Fence
- Airport Property Boundary
- Major Watershed
- Pipeline Corridor
- Two-track

Contour Type

- Index
- Index Depression
- Intermediate
- Intermediate Depression

Data Sources
1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (https://contours.semcog.org/)
2. Image Source: FSA NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Townsip
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
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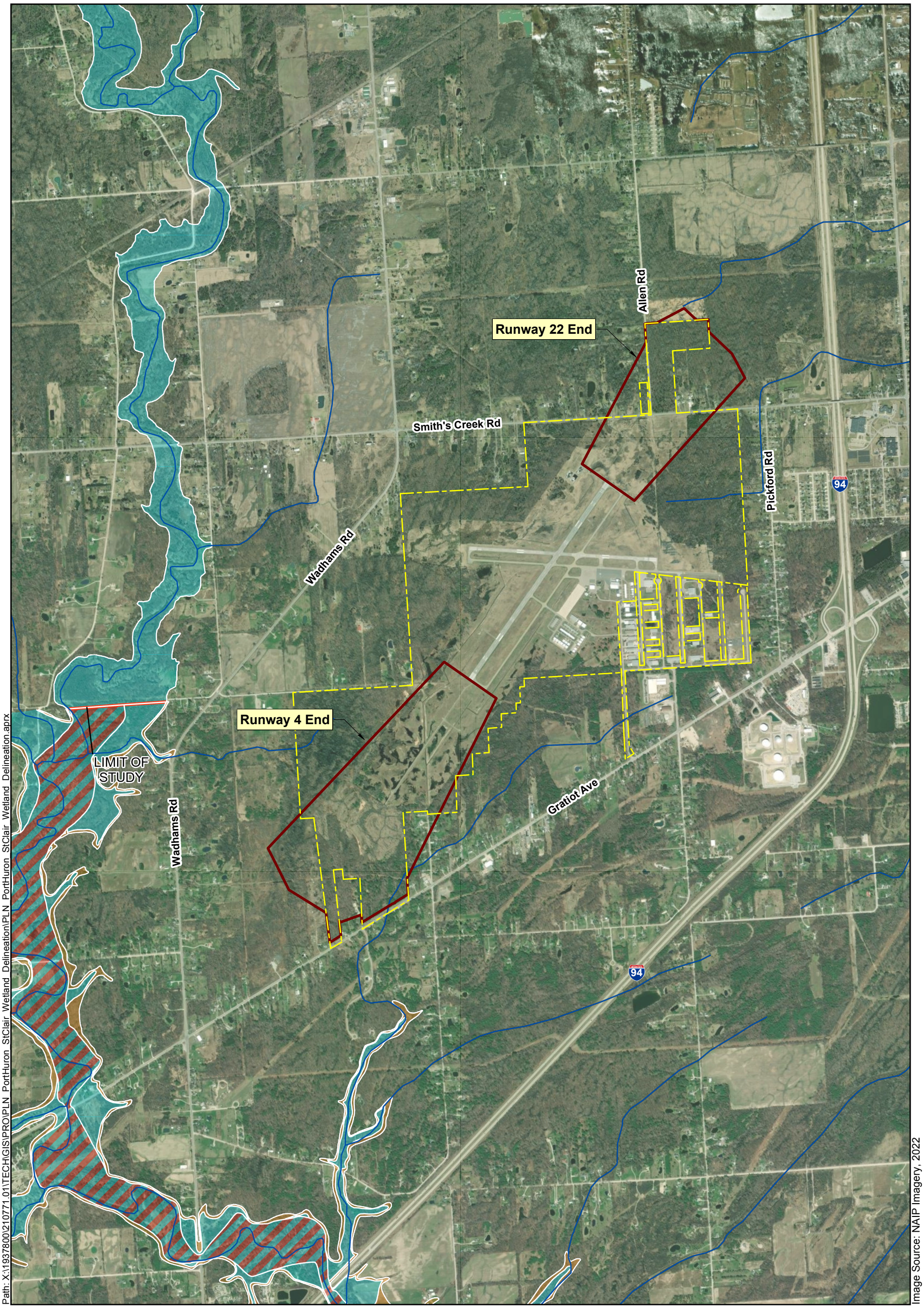
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



FEMA Floodplain Map

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

0 500 1,000 2,000 3,000 Feet

N

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

Flood Hazard Boundaries

- Limit Lines
- SFHA / Flood Zone Boundary

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- 0.2% Annual Chance Flood Hazard

Data Source:
1. FEMA National Flood Hazard Layer (NFHL)
https://hazards.fema.gov/arcgis/rest/services/public/NFHL/MapServer
Map Panel: 26147C0345D (eff. 5/3/2010)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

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Appendix E-3. Bat Habitat Suitability Map and Suitability Determinations

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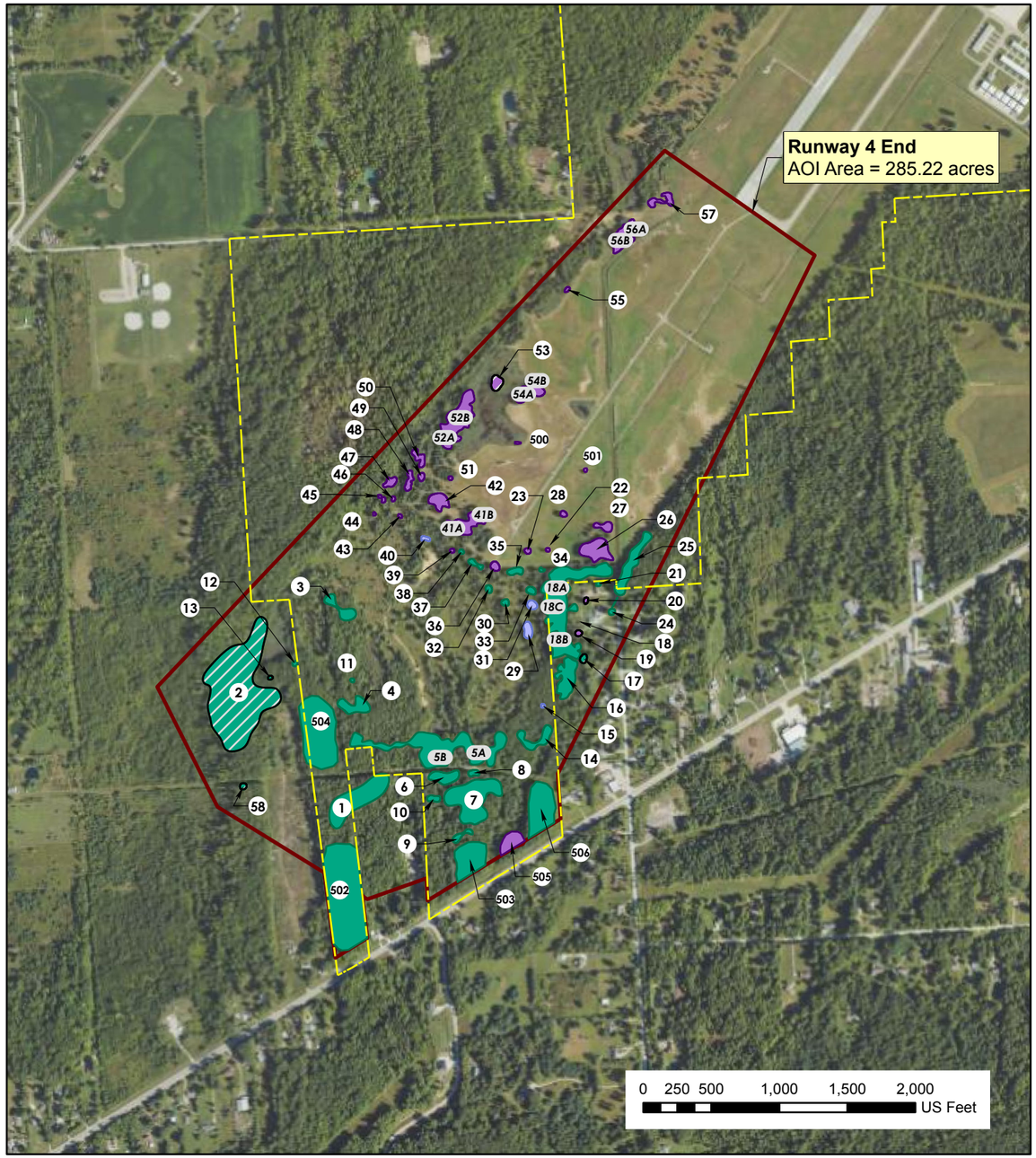

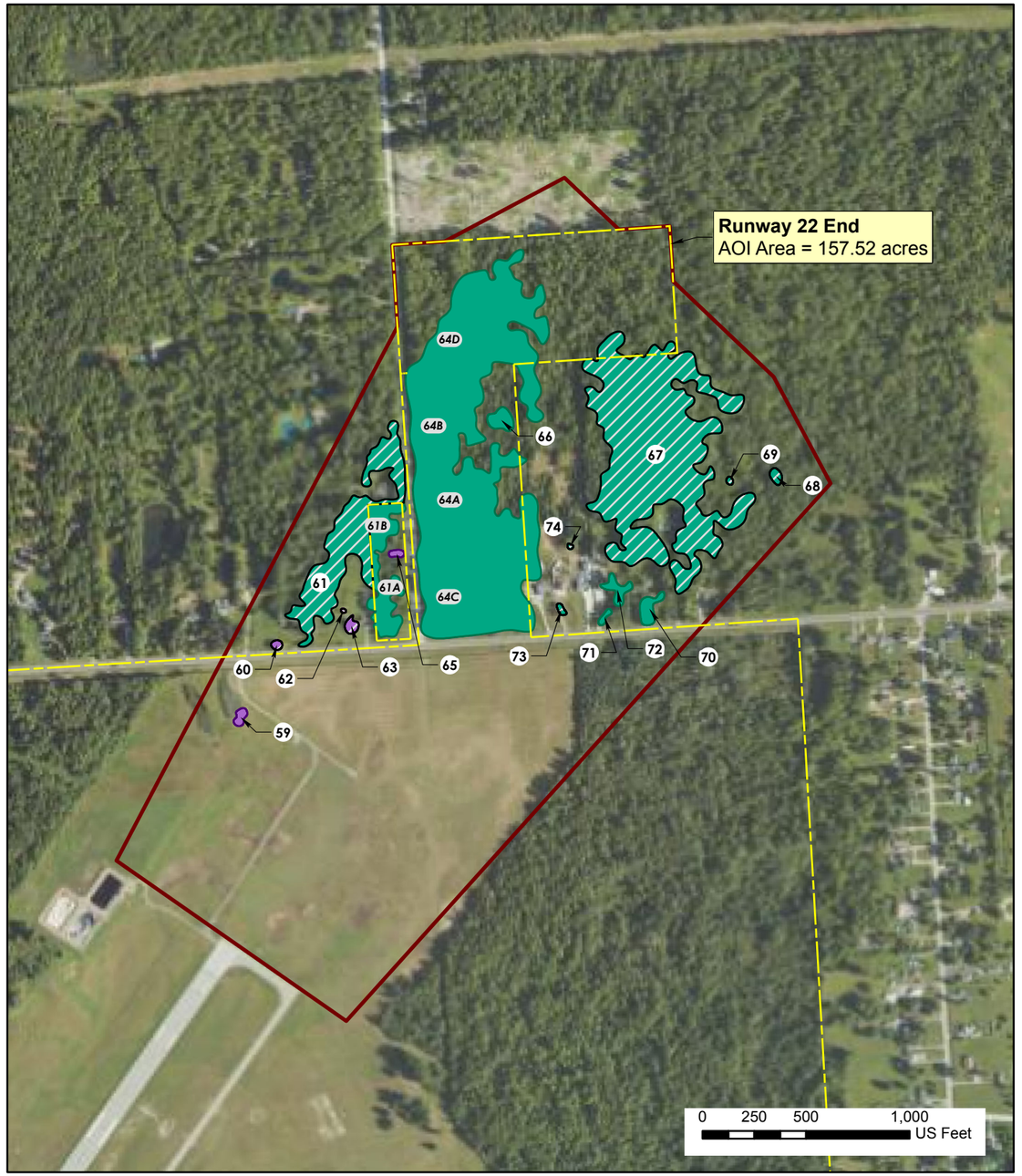

SUMMER BAT HABITAT SUITABILITY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

Legend

- Action Area
- Airport Property Line
- Bat Habitat Assessment Location*
- Inaccessible Assessment Area

Suitability Determination

- Suitable habitat
- Suitable habitat for NLEB; unsuitable for IBAT
- Unsuitable habitat

* Note on Bat Habitat Assessment Location
Each Assessment Area is labeled with an Assessment number. Every accessible area was assessed. Multiple forms were filled out for larger areas to document the range of forest characteristics present. Only the locations of multiple assessments (e.g., 18A, 18B, 18C) are shown for simplicity. See Assessment forms in Appendix E-4.

Data Sources
1. US FWS Modeled Bat Habitat V1 (https://www.fws.gov/media/indiana-bat-habitat-suitability-model-michigan-d-key/)
2. Image Source: FSA NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: June. 6 - 14, 2023 and Sept. 25 - Oct. 4, 2023

Assessm Area	Runway End	Field Surveyed	Habitat Description	Suitability Determination	Recommended Avoidance Dates
1	Rwy 4	Yes	Red maple/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
2	Rwy 4	No	Assumed red maple mixed forest**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
3	Rwy 4	Yes	Red maple/swamp white oak mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
4	Rwy 4	Yes	Red maple/paper birch mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
5	Rwy 4	Yes	Red maple/black cherry/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
6	Rwy 4	Yes	Red maple/white oak/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
7	Rwy 4	Yes	Red maple/white pine/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
8	Rwy 4	Yes	Red oak/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
9	Rwy 4	Yes	Red maple/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
10	Rwy 4	Yes	Red maple/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
11	Rwy 4	Yes	Red maple/swamp white oak mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
12	Rwy 4	Yes	Red maple mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
13	Rwy 4	No	Assumed red maple mixed forest**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
14	Rwy 4	Yes	Red maple/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
15	Rwy 4	Yes	Big tooth aspen/red maple mixed forest	Suitable habitat is present for NLEB; suitable habitat is not present for Indiana bat	Avoid cutting April 15 through September 30*
16	Rwy 4	Yes	Red maple/white pine/paper birch mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
17	Rwy 4	No	Assumed Red maple/white pine/paper birch/sugar maple/black cherry mixed forest**	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
18	Rwy 4	Yes	Red maple/white pine/paper birch/sugar maple/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
19	Rwy 4	No	Individual tree (unknown species)	Assume unsuitable habitat	Approved for clearing
20	Rwy 4	No	Individual tree (unknown species)	Assume unsuitable habitat	Approved for clearing
21	Rwy 4	Yes	Individual white pine	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
22	Rwy 4	Yes	Individual quaking aspen	Unsuitable habitat	Approved for clearing
23	Rwy 4	Yes	Individual quaking aspen	Unsuitable habitat	Approved for clearing
24	Rwy 4	Yes	Individual red maple	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
25	Rwy 4	Yes	Red maple/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
26	Rwy 4	Yes	Quaking aspen, big tooth aspen group	Unsuitable habitat	Approved for clearing
27	Rwy 4	Yes	Quaking aspen, red pine isolated stand	Unsuitable habitat	Approved for clearing
28	Rwy 4	Yes	Quaking aspen isolated stand	Unsuitable habitat	Approved for clearing
29	Rwy 4	Yes	Cottonwood cohort	Suitable habitat is present for NLEB; suitable habitat is not present for Indiana bat	Avoid cutting April 15 through September 30*
30	Rwy 4	Yes	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
31	Rwy 4	Yes	Cottonwood cohort	Suitable habitat is present for NLEB; suitable habitat is not present for Indiana bat	Avoid cutting April 15 through September 30*
32	Rwy 4	Yes	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
33	Rwy 4	Yes	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
34	Rwy 4	Yes	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
35	Rwy 4	Yes	Quaking aspen, cottonwood	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
36	Rwy 4	Yes	Immature (small dbh) cottonwood, willow, dead shrubs	Unsuitable habitat	Approved for clearing
37	Rwy 4	Yes	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
38	Rwy 4	Yes	Cottonwood cohort	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
39	Rwy 4	Yes	Immature (small dbh) cottonwood cohort	Unsuitable habitat	Approved for clearing
40	Rwy 4	Yes	Cottonwood/paper birch mixed forest	Suitable habitat is present for NLEB; suitable habitat is not present for Indiana bat	Avoid cutting April 15 through September 30*
41	Rwy 4	Yes	Quaking aspen/white pine mixed forest	Unsuitable habitat	Approved for clearing
42	Rwy 4	Yes	Quaking aspen/white pine mixed forest	Unsuitable habitat	Approved for clearing
43	Rwy 4	Yes	Quaking aspen stand	Unsuitable habitat	Approved for clearing
44	Rwy 4	Yes	Immature (small dbh) cottonwood cohort	Unsuitable habitat	Approved for clearing
45	Rwy 4	Yes	Big tooth aspen/white pine mixed forest	Unsuitable habitat	Approved for clearing
46	Rwy 4	Yes	Immature (small dbh) cottonwood cohort	Unsuitable habitat	Approved for clearing
47	Rwy 4	Yes	Immature (small dbh) cottonwood cohort	Unsuitable habitat	Approved for clearing
48	Rwy 4	Yes	Immature (small dbh) cottonwood cohort	Unsuitable habitat	Approved for clearing
49	Rwy 4	Yes	Immature quaking aspen/white pine mixed forest	Unsuitable habitat	Approved for clearing
50	Rwy 4	Yes	Immature (small dbh) cottonwood/quaking aspen	Unsuitable habitat	Approved for clearing
51	Rwy 4	Yes	Quaking aspen stand	Unsuitable habitat	Approved for clearing
52	Rwy 4	Yes	Quaking aspen, big tooth aspen stand (small bbh)	Unsuitable habitat	Approved for clearing
53	Rwy 4	No	Assumed Quaking aspen, big tooth aspen stand (small dbh)	Unsuitable habitat	Approved for clearing
54	Rwy 4	Yes	Quaking aspen, big tooth aspen stand (small dbh)	Unsuitable habitat	Approved for clearing
55	Rwy 4	Yes	Quaking aspen/silver maple stand	Unsuitable habitat	Approved for clearing
56	Rwy 4	Yes	Quaking aspen/white pine stand	Unsuitable habitat	Approved for clearing
57	Rwy 4	Yes	Quaking aspen stand	Unsuitable habitat	Approved for clearing
58	Rwy 4	No	Assumed red maple mixed forest**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
500	Rwy 4	Yes	Willow, alder and aspen copse	Unsuitable habitat	Approved for clearing
501	Rwy 4	Yes	Isolated jack pine	Unsuitable habitat	Approved for clearing
502	Rwy 4	Yes	White oak/red oak/paper birch mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
503	Rwy 4	Yes	Red maple/white pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
504	Rwy 4	Yes	Red maple dominant	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
505	Rwy 4	Yes	White pine dominant	Unsuitable habitat	Approved for clearing
506	Rwy 4	Yes	Red maple/white pine/black cherry mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*

* USFWS recommended dates for avoiding reasonable certainty of taking Indiana bats in modeled summer habitat and more than five miles of a known hibernacula(USFWS, 2022b)

** Assessment areas inaccessible in field; habitat suitability based on presence of modeled bat habitat or adjacent assessed forested areas.

SUMMER BAT HABITAT SUITABILITY TABLE - RWY 4 END

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: June. 6 - 14, 2023 and Sept. 25 - Oct. 4, 2023

Assessm Area	Runway End	Field Surveyed	Habitat Description	Suitability Determination	Recommended Avoidance Dates
59	Rwy 22	Yes	No trees present; wetland site	Unsuitable habitat	Approved for clearing
60	Rwy 22	No	Individual tree (unknown species)**	Assume unsuitable habitat	Approved for clearing
61	Rwy 22	No	Quaking aspen/green ash/cottonwood/red maple**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
61	Rwy 22	Yes	Quaking aspen/green ash/cottonwood/red maple	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
62	Rwy 22	No	Individual tree (unknown species)**	Assume unsuitable habitat	Approved for clearing
63	Rwy 22	No	Small copse of trees (unknown species)**	Assume unsuitable habitat	Approved for clearing
64	Rwy 22	Yes	Large site with red maple, swamp white oak, paper birch, red pine	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
65	Rwy 22	Yes	Cottonwood	Unsuitable habitat	Avoid cutting April 15 through September 30*
66	Rwy 22	Yes	Quaking aspen copse with snags	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
67	Rwy 22	No	Assume red maple, swamp white oak, paper birch, red pine**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
68	Rwy 22	No	Assume red maple, swamp white oak, paper birch, red pine**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
69	Rwy 22	No	Assume red maple, swamp white oak, paper birch, red pine**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
70	Rwy 22	Yes	Cottonwood copse	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
71	Rwy 22	Yes	White/ red pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
72	Rwy 22	Yes	White/ red pine mixed forest	Suitable habitat is present for NLEB, Indiana bat	Avoid cutting April 15 through September 30*
73	Rwy 22	No	Assume isolated tree**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*
74	Rwy 22	No	Assume isolated tree**	Suitable habitat is present for NLEB, Indiana bat**	Avoid cutting April 15 through September 30*

* USFWS recommended dates for avoiding reasonable certainty of taking Indiana bats in modeled summer habitat and more than five miles of a known hibernacula (USFWS, 2022b)

** Assessment areas inaccessible in field; habitat suitability based on presence of modeled bat habitat or adjacent assessed forested areas.

SUMMER BAT HABITAT SUITABILITY TABLE - RWY 22 END

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: June. 6 - 14, 2023 and Sept. 25 - Oct. 4, 2023

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Appendix E-4. Bat Habitat Assessment Forms

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Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 1

Date of Assessment: October 3, 2023 11:15 AM **Surveyor**: Brauna Hartzell

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.8		
Open and accessible to bats?	☐ Yes ☑ No		
Describe existing condition of water resources	No water resources present, low quality drain to west, very poor water quality		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	1-10%	1-10%
% Trees w/ exfoliating bark	10	3	0
Dominant Species of Mature Trees	red maple		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	10	45	45
Number of Suitable Snags (enter # or range e.g., 1-5)		3-4	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Several large cherry trees, paper birch, several large cottonwoods. Half of assessment area is on private property but seems to be mostly a drainage swale within a hardwood swamp. Fairly open understory, area dominated by canopy trees. Residence nearby. Seasonal water availability. No perennial high quality water resources nearby.

Assessment Area Photos

Photo description

Interior. Looking down drainageway within hardwood swamp, several large cottonwoods to the left. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Interior. Trees associated with hardwood swamp area. Fairly open understory dominated by large canopy trees. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 3

Date of Assessment: June 9, 2023 9:27 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.13		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	1-10%	61-80%	11-20%
% Trees w/ exfoliating bark	100	100	0
Dominant Species of Mature Trees	red maple, swamp white oak, other		*Other Dominant Species*: Alder
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	60	10	10
Number of Suitable Snags (enter # or range e.g., 1-5)		2-3	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site is dominated by swamp white oak and red maple with understory of dominant alder. Understory trees with DBH of 2 inches or less, majority of trees with DBH between three and 8 inches. White pine is also present in understory. Suitable bat habitat is present.

Assessment Area Photos

Photo description

Exterior view. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of small DBH trees in understory and trunks of dominant trees. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 4

Date of Assessment: June 9, 2023 9:04 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.15		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	21-40%	1-10%
% Trees w/ exfoliating bark	65	5	30
Dominant Species of Mature Trees	red maple, paper birch		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	40	25	30
Number of Suitable Snags (enter # or range e.g., 1-5)		3-5	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant and tallest trees include paper birch and red maple. Understory species include alder and white oak. Site is littered with downed trees. Suitable bat habitat is present. Some white pine also present at the site.

Assessment Area Photos

Photo description

General view of multiple size trees with downed trees. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of site showing trees with variable sizes DBH. View to the south.

Photo description

Exterior view. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 5 A

Date of Assessment: June 9, 2023 8:21 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.5		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	1-10%	1-10%
% Trees w/ exfoliating bark	60	0	0
Dominant Species of Mature Trees	red maple, black cherry		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	20	35	40
Number of Suitable Snags (enter # or range e.g., 1-5)		6-8	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant species in this area include red maple and black cherry with paper birch also present but not dominant. Majority of trees are 50 feet or taller. Majority of DBH falls between 9 inches to 15 inches and larger. Understory trees include cherry, sassafras, alder, white oak, and red oak. Suitable bat habitat is present. Some large trees have been taken down close to this site.

Assessment Area Photos

Photo description

General view of open forested area with red maple as dominant. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of 5A showing combination of large and medium size DBH trees. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 5 B

Date of Assessment: June 9, 2023 10:31 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.14		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources, but surrounded by wetland		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	11-20%
% Trees w/ exfoliating bark	75	50	0
Dominant Species of Mature Trees	red maple, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	20	40	25
Number of Suitable Snags (enter # or range e.g., 1-5)		1-3	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant trees include red maple, and white pine with a small group of mature and tall cottonwoods nearby. Suitable bat habitat is present. Area is littered with downed trees of various size DBH but mostly above 9 inches DBH. Understory non-dominants include Ironwood, red oak, cherry. Many birds present.

Assessment Area Photos

Photo description

General view of dominant white pine and red maple with downed trees in background. View to the southwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

More evidence of downed trees within this site. View to the southeast.

Photo description

Exterior view from utility right of way. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 6

Date of Assessment: June 9, 2023 10:13 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.01		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	21-40%
% Trees w/ exfoliating bark	75	8	15
Dominant Species of Mature Trees	red maple, white oak, black cherry		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	40	35	10
Number of Suitable Snags (enter # or range e.g., 1-5)		2-3	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site is dominated by red maple, white oak, and cherry. There are many large downed trees within the site. Understory dominants include cherry, alder, and sassafras. Suitable Bat habitat is present. One large white pine at edge of site.

Assessment Area Photos

Photo description

General view of downed trees and open area with dominant trees of red maple, cherry, and white oak surrounding. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 7

Date of Assessment: June 9, 2023 12:53 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.2		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	11-20%
% Trees w/ exfoliating bark	75	35	0
Dominant Species of Mature Trees	red maple, white pine, black cherry		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	10	25	35
Number of Suitable Snags (enter # or range e.g., 1-5)		7-10	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant trees of the site include red maple, white pine and cherry. Non-dominant trees include alder, green ash, white oak, and saplings of the dominant trees. Suitable bat habitat is present. The entire site is littered with downed trees of various DBH but mostly are over 9 inches.

Assessment Area Photos

Photo description

General view of dominant trees, and their trunks with exfoliating bark or furrowed bark and downed trees that litter the site. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of dominant trees, along with downed trees that litter the site. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Stump of tree cut previously. View to the southwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 8

Date of Assessment: June 9, 2023 2:22 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)			
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	None	1-10%
% Trees w/ exfoliating bark	70	0	0
Dominant Species of Mature Trees	red oak, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	15	70	5
Number of Suitable Snags (enter # or range e.g., 1-5)		1-2	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site is dominated by white pine and red oak with majority of trees 50 feet or taller. Most trees have DBH between nine and 15 inches. Understory includes alder and witch hazel with saplings of white pine and oaks. Suitable bat habitat is present. Site is located along utility right of way, high point and Sand blowout.

Assessment Area Photos

Photo description

General view of dominant pine and oaks that are present within a sand blowout. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view at Sand blow out along utility right of way. View to the southwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 9

Date of Assessment: June 9, 2023 1:16 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.04		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	21-40%	1-10%
% Trees w/ exfoliating bark	75	50	0
Dominant Species of Mature Trees	red maple, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	15	35	45
Number of Suitable Snags (enter # or range e.g., 1-5)		2-3	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant trees within the site include white, pine and red maple. Multiple snags in the area with obvious woodpecker holes. Downed trees litter the site. Cherry trees also present but not dominant. Suitable bat habitat is present. Site is also surrounded with previously harvested tree stumps occur on the site. No exterior photo provided since site is in the middle of forested area.

Assessment Area Photos

Photo description

General view of downed trees and white pine with wood pecker holes. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 10

Date of Assessment: June 9, 2023 1:36 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources.		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	11-20%
% Trees w/ exfoliating bark	99	80	0
Dominant Species of Mature Trees	red maple, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	20	25	55
Number of Suitable Snags (enter # or range e.g., 1-5)		4-5	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site is dominated by white pine and red maple, these trees are typically very large with over 15 inch DBH. Cherry is also present, but is not dominant. Multiple large snags are present on the site. Understory and saplings include black, oak, cherry, and alder. The site is bisected by an existing dirt road. Suitable bat habitat is present. Exterior view, not feasible since site is integrated into surrounding forest.

Assessment Area Photos

Photo description

General view of dominant trees, large snag and downed trees. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of site with road. View to the southwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 11

Date of Assessment: June 9, 2023 8:49 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.02		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%		
% Trees w/ exfoliating bark	100	0	5
Dominant Species of Mature Trees	red maple, swamp white oak		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	3	0	95
Number of Suitable Snags (enter # or range e.g., 1-5)	0		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Small site comprised of large DBH red maple and swamp white oak with smaller DBH but still 50 foot tall, red maple, with understory species of white oak and black oak. Down trees abundant in the general area.

Assessment Area Photos

Photo description

General view of large DBH trunks of red maple and swamp white oak. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Limited exterior view. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 12

Date of Assessment: June 14, 2023 9:53 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	Nearby man made small pond fortified with concrete paving remnants		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	61-80%	11-20%	11-20%
% Trees w/ exfoliating bark			
Dominant Species of Mature Trees	red maple		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	75	5	3
Number of Suitable Snags (enter # or range e.g., 1-5)		1-3	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant red maple with some beech. At high point within forest. Minimal snags in area. Suitable bat habitat due to exfoliating and furrowed bark.

Assessment Area Photos

Photo description

General view of site . View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of site. View to the southwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 14

Date of Assessment: June 9, 2023 2:05 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water sources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	81-100%	None	1-10%
% Trees w/ exfoliating bark	85	0	0
Dominant Species of Mature Trees	red maple, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	25	10	60
Number of Suitable Snags (enter # or range e.g., 1-5)	4-5		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site is dominated by red maple and white pine. Non-dominant trees include cherry with saplings of oak in understory. Site has downed trees, but not as many as surrounding sites. Suitable bat habitat is present. No exterior photo taken since integrated into surrounding forest.

Assessment Area Photos

Photo description

General view of dominant trees with large DBH and exfoliating or furrowed bark. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of dominant trees. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 15

Date of Assessment: June 13, 2023 11:59 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources			

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
% Trees w/ exfoliating bark	35	45	20
Dominant Species of Mature Trees	big tooth aspen, red maple		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	50	5	0
Number of Suitable Snags (enter # or range e.g., 1-5)		5-6	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant trees include big tooth aspen and red maple. White pine present but not dominant. Snags present and some suitable bat habitat is present. Many downed trees and branches and in close proximity to residential area. Paper birch also present. Most trees of 5” or less DBH.

Assessment Area Photos

Photo description

General view of understory and trunks of dominant trees. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 16

Date of Assessment: June 13, 2023 6:53 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	61-80%	11-20%	1-10%
% Trees w/ exfoliating bark	50	10	0
Dominant Species of Mature Trees	red maple, white pine, paper birch		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	25	45	10
Number of Suitable Snags (enter # or range e.g., 1-5)		6-7	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Suitable bat habitat present. Snags present. No wetland. Dominant trees include red maple, paper birch, white pine. Did not venture more into assessment area due to proximity of private property. Dense canopy, dark under it.

Assessment Area Photos

Photo description

General view of dominant tree trunks and snags. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 18 A

Date of Assessment: June 8, 2023 7:17 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)			
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	11-20%	41-60%	11-20%
% Trees w/ exfoliating bark	15	30	0
Dominant Species of Mature Trees	red maple, white pine, paper birch		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	35	25	5
Number of Suitable Snags (enter # or range e.g., 1-5)		1-2	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site has dominant trees of Paper birch, red maple and white pine with understory of cherry and maple and pine saplings. Majority of trees have DBH between 0 to 8 inches, snags consist of trees of less than 3 inches DBH.

Assessment Area Photos

Photo description

Suitable bat habitat with dominant maple, pine and birch. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Suitable bat habitat with red maple, white pine and paper birch. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 18 B

Date of Assessment: June 8, 2023 10:37 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)			
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%		11-20%
% Trees w/ exfoliating bark	50	0	0
Dominant Species of Mature Trees	sugar maple, white pine, black cherry		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	40	35	5
Number of Suitable Snags (enter # or range e.g., 1-5)		3	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

This point within site 18 is dominated by black, cherry, red, maple and white pine with DBH is between 3 to 9 inches mostly. The understory does contain many small saplings of the same species with 1 to 2 inch DBH. Other understory tree species include white oak and red oak.

Assessment Area Photos

Photo description

Exterior view View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view inside canopy of 18 B View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 18 C

Date of Assessment: June 8, 2023 1:46 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	11-20%
% Trees w/ exfoliating bark	60	0	0
Dominant Species of Mature Trees	red maple, white pine, black cherry		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	65	3	20
Number of Suitable Snags (enter # or range e.g., 1-5)	3-4		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

This portion of site 18 is dominated by red maple and black cherry with a combination of DBH at 15 or more inches or under 3 inches. Understory, and non-dominant trees include green ash and red oak. Suitable bat habitat is present.

Assessment Area Photos

Photo description

General view at 18 C of mostly small DBH trees. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of dominant trees with small and large DBH. View to the northeast.

Photo description

Exterior view. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 21

Date of Assessment: June 8, 2023 1:15 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	81-100%		
% Trees w/ exfoliating bark	100	0	0
Dominant Species of Mature Trees	white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	0	0	100
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site consists of individual white pine.

Assessment Area Photos

Photo description

White pine. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 22

Date of Assessment: June 6, 2023 1:45 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	81-100%	None	None
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	0	100	0
Number of Suitable Snags (enter # or range e.g., 1-5)	0		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Isolated aspen with no suitable roost tree

Assessment Area Photos

Photo description

Isolated aspen. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Isolated aspen with no suitable bark. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 23

Date of Assessment: June 6, 2023 1:37 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	81-100%	None	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	0	99	0
Number of Suitable Snags (enter # or range e.g., 1-5)	0		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Isolated trees with no suitable roost trees.

Assessment Area Photos

Photo description

Isolated copse of aspen trees. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Isolated aspens. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 24

Date of Assessment: June 14, 2023 8:22 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	81-100%	None	None
% Trees w/ exfoliating bark	100	0	0
Dominant Species of Mature Trees	red maple		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	0	0	100
Number of Suitable Snags (enter # or range e.g., 1-5)	0		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Individual red maple.

Assessment Area Photos

Photo description

Red maple. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 25

Date of Assessment: June 8, 2023 12:51 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)		0.07	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	Ephemeral pond in swamp wetland		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	41-60%	11-20%	11-20%
% Trees w/ exfoliating bark	50	10	0
Dominant Species of Mature Trees	red maple, black cherry		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	45	20	15
Number of Suitable Snags (enter # or range e.g., 1-5)		5-7	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site has multiple trees within 50 feet of assessment point that are 15 inches or greater in DBH. These trees have exfoliating bark. Dominant trees, include red maple and black cherry; other trees on the site include red oak and white pine. Immature, shagbark hickory, cherry and maple are found in the understory. Site has suitable bat habitat. Tree species are consistent within the site.

Assessment Area Photos

Photo description

General view of interior of site with cherry bark in foreground. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of trees within site with large and small DBH. View to the south.

Photo description

Exterior view from road at edge of residence. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 26

Date of Assessment: June 6, 2023 2:50 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.3		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	21-40%
% Trees w/ exfoliating bark	0	3	0
Dominant Species of Mature Trees	quaking aspen, big tooth aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	65	8	0
Number of Suitable Snags (enter # or range e.g., 1-5)		1-3	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Small snags of less 3” dbh. Dominated by aspens with no suitable bark characteristics.

Assessment Area Photos

Photo description

Exterior view. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of aspens. View to the east.

Photo description

General view of understory. View to the north.

Photo description

Exterior view. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 27

Date of Assessment: June 6, 2023 2:01 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	41-60%	21-40%	1-10%
% Trees w/ exfoliating bark	0	15	0
Dominant Species of Mature Trees	quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	80	8	0
Number of Suitable Snags (enter # or range e.g., 1-5)	0		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Isolated group of trees dominated by aspens with 3 red pines.

Assessment Area Photos

Photo description

Eastern most portion of tree group. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description
Trees at western portion of area. View to the west.

Photo description
Exterior view. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 28

Date of Assessment: June 6, 2023 2:22 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	81-100%	None	None
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	80	1	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Isolated aspens with no suitable bark.

Assessment Area Photos

Photo description

Isolated aspens View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Isolated aspens View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 29

Date of Assessment: June 8, 2023 1:58 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.07		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	None	1-10%
% Trees w/ exfoliating bark	5	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	85	5	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site consists of cottonwoods ranging inside with DBH from 4 to 9 inches, none greater than 9 to 10 inches. Most bark is not deeply furrowed due to immaturity, size and small DBH of trees. Potential habitat present for northern long eared, or tri-colored bat.

Assessment Area Photos

Photo description

Exterior view. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of trunks of small DBH cottonwoods. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 30

Date of Assessment: June 8, 2023 2:44 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)			
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	11-20%	1-10%
% Trees w/ exfoliating bark	50	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	80	5	5
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site dominated by cottonwood trees, trees of 9 inches or more DBH and have furrowed bark. Trees of 4 inches are less DBH do not have furrowed bark, and others have minimally furrowed bark.

Assessment Area Photos

Photo description

Exterior view View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of cottonwoods with largest tree and foreground. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 31

Date of Assessment: June 8, 2023 2:08 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.04		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	1-10%	1-10%
% Trees w/ exfoliating bark	5	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	85	2	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site dominated by cottonwoods all 8 inches or less DBH, many with DBH of less than 3 inches. Furrowed bark suitable for bats present on larger trees.

Assessment Area Photos

Photo description

Exterior view. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of small DBH trunks of cottonwoods. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 32

Date of Assessment: June 8, 2023 2:55 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.025		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	21-40%	41-60%	1-10%
% Trees w/ exfoliating bark	25	10	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	70	5	15
Number of Suitable Snags (enter # or range e.g., 1-5)	0		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Cottonwoods with DBH larger than 9 inches provide furrowed bark and suitable bat habitat. Most trees within 3 to 8 inch DBH and do not have furrowed bark. Some Willow is present as understory.

Assessment Area Photos

Photo description

General view of trunks of large cottonwoods with furrowed bark and smaller DBH trees in background. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 33

Date of Assessment: June 8, 2023 2:29 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.035		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	1-10%
% Trees w/ exfoliating bark	50	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	80	5	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site is dominated by cottonwoods with DBH ranging from less than three up to 10 inches approximately. Furrowed bark is present on larger trees. Small Willow shrubs present in understory.

Assessment Area Photos

Photo description

General view of Cottonwood trunks with furrowed bark. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 34

Date of Assessment: June 8, 2023 3:25 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.02		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	11-20%
% Trees w/ exfoliating bark	80	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	25	5	35
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site dominated by cottonwood trees, two of which, with greater than 15 inch DBH others have between 3 to 8 DBH with less furrowed bark. Suitable bat habitat is present in large trees.

Assessment Area Photos

Photo description

General view of trunks of cottonwood trees within this small site. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 35

Date of Assessment: June 8, 2023 3:06 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.05		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	Ditch runs through site.		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	21-40%	21-40%	11-20%
% Trees w/ exfoliating bark	2	0	0
Dominant Species of Mature Trees	quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	70	2	0
Number of Suitable Snags (enter # or range e.g., 1-5)	2-3		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Aspens dominate this site and do not have exfoliating bark. Snags are less than 3 inches DBH. Non-dominant trees at this site include willow and Paperbirch. One cottonwood present does provide suitable bat habitat.

Assessment Area Photos

Photo description

Exterior view. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of tree trunks, many without furrowed bark. One cottonwood of approximately 9 inches DBH has furrowed bark. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 36

Date of Assessment: June 8, 2023 10:20 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.07		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	1-10%
% Trees w/ exfoliating bark	55	10	35
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	50	10	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

While site is comprised of cottonwoods, most are 8 inches or less in DBH, some 3 inches or less DBH with no furrowed bark. Understory includes Willow and dead shrubs, these dead shrubs do not make for adequate snags.

Assessment Area Photos

Photo description

General view of small DBH, immature, cottonwoods, and dead shrubs. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 37

Date of Assessment: June 8, 2023 10:09 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.08		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources, but within wetland		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	1-10%	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	100	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant trees at this site consist of immature cottonwoods with < 8 inches DBH and furrowed bark is present only in very lowest portion of trunks.

Assessment Area Photos

Photo description

Exterior view. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of immature yet furrowed bark on cottonwood trees. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 38

Date of Assessment: June 8, 2023 10:01 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	81-100%	None	None
% Trees w/ exfoliating bark	100	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	0	0	100
Number of Suitable Snags (enter # or range e.g., 1-5)	0		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site is comprised of one large DBH, mature cottonwood.

Assessment Area Photos

Photo description

Exterior view of single large cottonwood. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of furrowed bark. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 39

Date of Assessment: June 8, 2023 9:52 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☐ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	21-40%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	85	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site comprised of young cottonwoods with < 8 inches DBH, no exfoliating or furrowed bark present.

Assessment Area Photos

Photo description

Exterior view View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of small DBH cottonwoods with immature bark that is not deeply furrowed or exfoliating. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 40

Date of Assessment: June 8, 2023 7:44 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.02		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources, but at edge of wetland.		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	41-60%	11-20%	11-20%
% Trees w/ exfoliating bark	35	10	0
Dominant Species of Mature Trees	cottonwood, paper birch		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	55	7	0
Number of Suitable Snags (enter # or range e.g., 1-5)	1		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Tallest of trees are all cottonwood. Other tree species include paper birch, and at the edge, black willow. There is also one red pine present.

Assessment Area Photos

Photo description

Exterior view. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of small assessment area. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 41 A

Date of Assessment: June 7, 2023 2:00 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.25		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	41-60%	21-40%	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen, other		*Other Dominant Species*: Alder
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	45	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		1	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Assessment area is dominated by quaking aspen, and understory of alder. Most trees have < 3 inches DBH.

Assessment Area Photos

Photo description

Aspens with < 3 inches DBH which are majority of trees. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 41 B

Date of Assessment: June 7, 2023 2:09 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.25		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	41-60%	21-40%	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	55	2	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant trees include quaking aspen, and white pine with some saplings of red maple. No snags.

Assessment Area Photos

Photo description

Aspens and white pine dominate the site, most trees with DBH of 8 inches or less. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view of, 41 View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 42

Date of Assessment: June 7, 2023 12:42 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.25		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	41-60%	21-40%	11-20%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	70	5	0
Number of Suitable Snags (enter # or range e.g., 1-5)	2-3		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Assessment area is dominated by quaking aspen and white pine. Neither species have exfoliating bark. Snags on the site are mostly smaller than 3 inches DBH.

Assessment Area Photos

Photo description

Quaking aspens and white pine, dominate the site and comprise mostly of smaller trees. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description
Exterior view. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 43

Date of Assessment: June 8, 2023 9:38 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)			
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	1-10%	61-80%	11-20%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	80	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Assessment area is comprised of small DBH quaking aspens with understory of cherry, small aspen, and serviceberry.

Assessment Area Photos

Photo description

General view to show small DBH trunks and understory. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 44

Date of Assessment: June 8, 2023 9:23 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	81-100%		
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	99	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Due to small DBH of 8 inches or less for this group of cottonwoods, there is no suitable habitat present. Furrowed bark is not well developed.

Assessment Area Photos

Photo description

Exterior view View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of small DBH cottonwoods. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 45

Date of Assessment: June 8, 2023 9:12 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)			
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	21-40%	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	big tooth aspen, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	65	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant trees of big tooth aspen and white pine do not have exfoliating or furrowed bark. No snags present. Cherry saplings present a long edge.

Assessment Area Photos

Photo description

General view to show small DBH trees. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 46

Date of Assessment: June 8, 2023 9:02 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)			
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources, but at edge of wetland		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	1-10%	11-20%
% Trees w/ exfoliating bark	15	1	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	85	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		1	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Cottonwood trees are over 50 feet tall. They are small in DBH and do not have deeply furrowed bark. No other trees at site have exfoliating or furrowed bark. Willows under 20 feet also present.

Assessment Area Photos

Photo description

General view of understory with Willows and small DBH cottonwoods. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 47

Date of Assessment: June 8, 2023 8:29 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.05		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources			

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	1-10%
% Trees w/ exfoliating bark	20	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	80	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

While most trees present at the site are over 50 feet tall, they have a DBH typically between three and 8 inches. Exfoliating or furrowed bark is not present in most of the small trees. Shrubby willows are also present at this site.

Assessment Area Photos

Photo description

Exterior view. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the northeast.

Photo description

General view of small DBH size of cottonwoods. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 48

Date of Assessment: June 8, 2023 8:16 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.06		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources.		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	11-20%	11-20%	41-60%
% Trees w/ exfoliating bark	0	35	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	45	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		1-2	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

All trees at this site are of < 8 inches DBH, and most are less than 3 inches DBH. Site is overgrown with roses and blackberry. No suitable habitat present. Many birds present.

Assessment Area Photos

Photo description

General view of overgrown understory of roses. Most trees at site have DBH of less than 3 inches. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 49

Date of Assessment: June 7, 2023 12:28 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☐ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	11-20%	21-40%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	50	2	0
Number of Suitable Snags (enter # or range e.g., 1-5)		1	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Assessment area is dominated by trees with < 3 inches DBH. Snags are also less than 3 inches DBH. Deer resting at this site.

Assessment Area Photos

Photo description

Site dominated by aspens and white pine, most trees smaller than 3 inches DBH. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 50

Date of Assessment: June 8, 2023 8:01 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources but site is within a wetland		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	1-10%	21-40%	41-60%
% Trees w/ exfoliating bark	0	5	0
Dominant Species of Mature Trees	cottonwood, quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	55	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)	2-3		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Area is comprised primarily of trees less than 3 inches DBH, and multiple species of shrubs, including some Rhus. The snags are all less than 3 inches DBH. Cottonwoods provide very small amount of exfoliating or furrowed bark.

Assessment Area Photos

Photo description

Exterior view. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of sight, with thick understory of wetland, grasses and shrubs, and other tree species of less than 3 inches DBH. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 51

Date of Assessment: June 7, 2023 1:10 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	81-100%	None	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	1	95	0
Number of Suitable Snags (enter # or range e.g., 1-5)	0		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Small site consists of large quaking aspens with no exfoliating bark and some saplings. No snags present.

Assessment Area Photos

Photo description

Aspen-dominated area with no snags. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 52 A

Date of Assessment: June 7, 2023 9:47 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	1.2		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water but surrounded by wetland		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	1-10%	61-80%	11-20%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen, big tooth aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	70	1	0
Number of Suitable Snags (enter # or range e.g., 1-5)		2	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Snags have less than 3” DBH. Wetlands surround assessment point. Aspen dominated

Assessment Area Photos

Photo description

Wetland surrounded point, small dbh trees, aspen dominated. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Wetland surrounded point, small dbh trees, aspen dominated. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 52 B

Date of Assessment: June 7, 2023 10:05 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	1.2		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water but within wetland		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	1-10%	61-80%	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen, big tooth aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	55	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		4-5	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Area is dominated by small DBH aspens and is surrounded by wetland. Birds and nests are present.

Assessment Area Photos

Photo description

Area dominated by small DBH, aspens and saplings of ash. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Area is within a wetland, and dominated by small aspens with no exfoliating bark. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 54 A

Date of Assessment: June 7, 2023 8:42 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.4		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	1-10%	81-100%	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen, big tooth aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	45	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Majority of aspens less than 3” DBH; all others between 3-8” DBH

Assessment Area Photos

Photo description

Aspen dominated with small DBH trees, wetland at edge to NW. Birds present. Red-winged blackbirds, chickadee. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Aspen-dominated at edge of open area. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 54 B

Date of Assessment: June 7, 2023 8:54 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.4		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources			

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	1-10%	81-100%	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen, big tooth aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	45	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		2	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Additional comments

All snags smaller than 3” DBH. Small DBH, less than 3”, dominant aspens at edge of wetland. Fern understory.

Assessment Area Photos

Photo description

Small DBH aspens with fern understory. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description
Small DBH aspens. View to the southeast.

Photo description
Exterior view. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 55

Date of Assessment: June 7, 2023 8:19 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.023		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	Within wetland boundary		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	21-40%	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen, silver maple		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	95	1	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Small group of aspens and maple with minimal understory.

Assessment Area Photos

Photo description

Exterior view View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

View of tree trunks and bark; no exfoliating bark. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 56 A

Date of Assessment: June 7, 2023 7:29 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)			
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	11-20%	21-40%	21-40%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	80	10	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Aspen and white pine dominated with cherry and green ash saplings in understory. Birds present and active, catbird?, robin, chickadee

Assessment Area Photos

Photo description

Exterior at north end. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Pine and aspen dominated area. View to the north.

Photo description

Aspen-dominant area. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 56 B

Date of Assessment: June 7, 2023 7:44 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	1, 180 feet
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
	0.04		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	Perennial ditch wetland		

Forest Resources

Closure/Density	*Canopy (>50 ft)*	*Midstory (20-50ft)*	*Understory (<20 ft)*
	21-40%	11-20%	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	70	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)	1		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Assessment site has many downed trees, smaller trees and those near wetlands left standing. Only snag was leaning dead tree. Area adjacent to ditch cleared previously.

Assessment Area Photos

Photo description

Larger trees cut down, disturbed. Birds present. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 57

Date of Assessment: June 7, 2023 6:53 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	1, 90 feet
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.05		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	Between ditch wetland and phragmites stand with standing water		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	11-20%	11-20%	21-40%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	70	1	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

No trees with exfoliating bark at this assessment point. Perennial ditch wetland on east side; phragmites stand to west with fringe of aspen and shrubs. Most of area cleared previously.

Assessment Area Photos

Photo description

Exterior view. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Trees at edge of wetland. View to the northeast.

Photo description

Aspen at edge of wetland. Bullfrog present. View to the southwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 59

Date of Assessment: June 9, 2023 6:40 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.09		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	Wetland		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	None	None	None
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees			*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	0	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☐ No ☑ N/A

Is the habitat suitable for NLEB? ☐ Yes ☐ No ☑ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Site is a wetland with phragmites dominant, no trees present.

Assessment Area Photos

Photo description

Phragmites dominant wetland. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 61 A

Date of Assessment: June 6, 2023 10:55 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	3		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	41-60%	1-10%	21-40%
% Trees w/ exfoliating bark	2	0	0
Dominant Species of Mature Trees	quaking aspen, green ash, other		*Other Dominant Species*: Ulmus Americana, unknown maple
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	45	15	0
Number of Suitable Snags (enter # or range e.g., 1-5)		3	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Only suitable habitat due to snags/potential roosting.

Assessment Area Photos

Photo description

Open canopy due to swamp wetland habitat. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Aspen copse. View to the northeast.

Photo description

Vine in canopy, some snags. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 61 B

Date of Assessment: June 6, 2023 11:20 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	3		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	21-40%
% Trees w/ exfoliating bark	7	2	0
Dominant Species of Mature Trees	cottonwood, red maple		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	30	45	4
Number of Suitable Snags (enter # or range e.g., 1-5)		5-7	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Trees are larger in DBH on west side of fence and more open understory; smaller and denser trees otherwise.

Assessment Area Photos

Photo description

At western property line where larger trees are present west of fence. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Thick, cluttered understory. View to the north.

Photo description

Fence line present. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description
Exterior 61B. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 64 A

Date of Assessment: June 6, 2023 8:05 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	7		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	11-20%	41-60%
% Trees w/ exfoliating bark	45	0	0
Dominant Species of Mature Trees	red maple, swamp white oak		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	15	5	70
Number of Suitable Snags (enter # or range e.g., 1-5)		3-4	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Red maple and swamp white oak dominated with shagbark hickory (not dominant). Canopy dominated by tall trees in swampy wetland. No perennial water source; signs of seasonal water sources present.

Assessment Area Photos

Photo description

General interior view of large trees. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General interior view of large trees dominated area. View to the south.

Photo description

Under canopy general view. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior view near assessment point 64A. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 64 B

Date of Assessment: June 6, 2023 8:57 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	7		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	11-20%	41-60%
% Trees w/ exfoliating bark	3	0	0
Dominant Species of Mature Trees	red maple, paper birch		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	70	1	3
Number of Suitable Snags (enter # or range e.g., 1-5)	4-5		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Part of connected and continuing swamp wetland dominated by red maple and paper birch. Non dominant trees include shagbark hickory, cottonwood, green ash, swamp white oak and perhaps a beech or other birch species. Oriental bittersweet invading area and dominant within 50 feet of this data point.

Assessment Area Photos

Photo description

General view within swamp wetland. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view within swamp wetland. View to the north.

Photo description

General site with cluttered understory. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Exterior Assessment point 64B View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 64 C

Date of Assessment: June 6, 2023 10:31 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	7	0	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	41-60%	1-10%	21-40%
% Trees w/ exfoliating bark	15	0	0
Dominant Species of Mature Trees	red pine, other		*Other Dominant Species*: Elm
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	50	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		1-2	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Degraded habitat due to oriental bittersweet and downed pines left in place. Open canopy.

Assessment Area Photos

Photo description

Assessment point 64C. General view of open canopy due to downed pines in combination with invasive vines. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Assessment point 64C. General view of site understory. View to the southwest.

Photo description

Exterior Assessment point 64C. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 64 D

Date of Assessment: June 12, 2023 7:40 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	7		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	11-20%
% Trees w/ exfoliating bark	95	80	5
Dominant Species of Mature Trees	red maple		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	25	15	50
Number of Suitable Snags (enter # or range e.g., 1-5)		5-7	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant tree is red maple with elm and swamp white oak also present in fewer numbers. Suitable bat habitat present with snags.

Assessment Area Photos

Photo description

General view of dominant trees and furrowed or exfoliating bark. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description
General view with snag. View to the west.

Photo description
General view with understory. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 65

Date of Assessment: June 12, 2023 8:45 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.025		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	11-20%	21-40%	21-40%
% Trees w/ exfoliating bark	10	0	0
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	60	5	0
Number of Suitable Snags (enter # or range e.g., 1-5)		4-5	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Dominant trees are cottonwood with few swamp white oak of small DBH. Most trees under 8” DBH. Understory trees < 3” DBH. Snags present but 3” or less DBH. Thick understory.

Assessment Area Photos

Photo description

General view of thick understory with small DBH snag. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view of cottonwood trunks and dense understory. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 66

Date of Assessment: June 6, 2023 9:34 AM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.1		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	None	21-40%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	quaking aspen		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	1	85	0
Number of Suitable Snags (enter # or range e.g., 1-5)		1-2	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Area dominated by quaking aspen copse; site covers wetlands and upland. Snags offer best habitat/potential roost trees.

Assessment Area Photos

Photo description

Edge of aspen copse. View to the southeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

General view edge of wetland. View to the west.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 70

Date of Assessment: September 25, 2023 10:08 AM **Surveyor**: Brauna Hartzell

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0	0	
Open and accessible to bats?	☐ Yes ☑ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	1-10%	1-10%
% Trees w/ exfoliating bark	80	10	1
Dominant Species of Mature Trees	cottonwood		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	10	2	80
Number of Suitable Snags (enter # or range e.g., 1-5)		Unkn0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Suitable roost trees. Next to heavily trafficked road and residential area. Forest resources within 1000 ft. No water resources present.

Assessment Area Photos

Photo description

Line of large cottonwoods along residential driveway. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 71 & 72

Date of Assessment: September 25, 2023 9:54 AM **Surveyor**: Brauna Hartzell

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0	0	
Open and accessible to bats?	☐ Yes ☑ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	11-20%	1-10%
% Trees w/ exfoliating bark	5	20	2
Dominant Species of Mature Trees	white pine, red pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	50	30	10
Number of Suitable Snags (enter # or range e.g., 1-5)		Unknown	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Assessed from road. Suitable roost trees present. Next to heavily trafficked road and residential area. No water resources present. Large forest patches to north within 1000 ft.

Assessment Area Photos

Photo description

Large white pine plus some red pine. View to the north.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 500

Date of Assessment: June 6, 2023 2:21 PM **Surveyor**: Brauna Hartzell

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0.014		
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	None	21-40%	41-60%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	other		*Other Dominant Species*: Alnus incana
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	50	0	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Small copse of willow, alder, and one quaking aspen; likely to be removed if possible; fringe along a phragmites dominated swamp; no suitable habitat or roost trees

Assessment Area Photos

Photo description

Exterior Assessment area. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 501

Date of Assessment: June 6, 2023 3:19 PM **Surveyor**: Kim Shannon

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)			
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	No water resources		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	None	None	1-10%
% Trees w/ exfoliating bark	0	100	0
Dominant Species of Mature Trees	other		*Other Dominant Species*: Jack pine
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	0	100	0
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Isolated jack pine 660 to 1000ft from forest canopy

Assessment Area Photos

Photo description

Isolated jack pine View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 502

Date of Assessment: October 1, 2023 1:13 PM **Surveyor**: Brauna Hartzell

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0		
Open and accessible to bats?	☐ Yes ☑ No		
Describe existing condition of water resources	None present		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	1-10%	1-10%
% Trees w/ exfoliating bark	10	2	1
Dominant Species of Mature Trees	white oak, red oak, paper birch		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	10	30	60
Number of Suitable Snags (enter # or range e.g., 1-5)		1-2	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Airport property south of pipeline corridor. Suitable roost trees present. Mature hardwood swamp in this area. No other streams or water resources present, proximity to residential house houses.

Assessment Area Photos

Photo description

Interior with large canopy trees dominating, fairly open understory. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 503

Date of Assessment: October 3, 2023 3:05 PM **Surveyor**: Brauna Hartzell

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)	0	0.05	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	Drainage ditch with poor water quality		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density		1-10%	1-10%
% Trees w/ exfoliating bark	1	1	1
Dominant Species of Mature Trees	red maple, white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	10	70	20
Number of Suitable Snags (enter # or range e.g., 1-5)		2-3	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Area near gate access to east. Some suitable roost trees present. Close to heavily trafficked road. Drainage ditch provides poor quality water source.

Assessment Area Photos

Photo description

White pines and red maples dominant, open understory. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Some paper birches provide suitable roost trees. View to the northwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 504

Date of Assessment: October 1, 2023 10:54 AM **Surveyor**: Brauna Hartzell

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	NA
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)		0	
Open and accessible to bats?	☐ Yes ☑ No		
Describe existing condition of water resources	None present		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	1-10%	1-10%
% Trees w/ exfoliating bark	5	1	1
Dominant Species of Mature Trees	red maple		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	85	10	5
Number of Suitable Snags (enter # or range e.g., 1-5)		1-2	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

West side of Airport property. Suitable roost trees are present, dominated by small size trees. No water resources present.

Assessment Area Photos

Photo description

Interior dominated by small DBH trees. View to the south.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 505

Date of Assessment: October 2, 2023 1:28 PM **Surveyor**: Brauna Hartzell

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	Yes, 1, measure on his
Ponds/Pools (# and size)	NA		
	Permanent	*Seasonal*	
Wetlands (approx.. acres)		0	
Open and accessible to bats?	☐ Yes ☑ No		
Describe existing condition of water resources	Drainage ditch from airport, water appears clear, no odors		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	61-80%	1-10%	1-10%
% Trees w/ exfoliating bark	0	0	0
Dominant Species of Mature Trees	white pine		*Other Dominant Species*:
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	15	60	25
Number of Suitable Snags (enter # or range e.g., 1-5)		0	

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☐ Yes ☑ No ☐ N/A

Is the habitat suitable for NLEB? ☐ Yes ☑ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Wooded area south adjacent to Gratiot Ave. Dominated by white pine next to a constructed drainage ditch (Moak Drain) with heavily trafficked road to south.

Assessment Area Photos

Photo description

Open understory with canopy dominated by white pine. View to the east.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Relatively open under Story with canopy, dominated by white pine View to the southwest.

Project Name: St. Clair International Airport Obstruction Clearing EA

Assessment Area No : 506

Date of Assessment: October 2, 2023 1:47 PM **Surveyor**: Brauna Hartzell

Water Resources

Stream Type (# and length)	*Ephemeral*	*Intermittent*	*Perennial*
	NA	NA	Yes, 1 constructed, measure
Ponds/Pools (# and size)	NA		
Wetlands (approx.. acres)	*Permanent*	*Seasonal*	
		0	
Open and accessible to bats?	☑ Yes ☐ No		
Describe existing condition of water resources	Constructed ditch along west side, water appears clear, no odors		

Forest Resources

	Canopy (>50 ft)	*Midstory (20-50ft)*	*Understory (<20 ft)*
Closure/Density	81-100%	1-10%	1-10%
% Trees w/ exfoliating bark	8	2	1
Dominant Species of Mature Trees	red maple, white pine, other		*Other Dominant Species*: Several black cherry
Size composition of live trees (%)	*Small (3-8 in dbh)*	*Medium (9-15 in dbh)*	*Large (>15 in dbh)*
	20	60	20
Number of Suitable Snags (enter # or range e.g., 1-5)	1-2		

Habitat Assessment

Is the habitat suitable for Indiana Bats? ☑ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB? ☑ Yes ☐ No ☐ N/A

Project Name: St. Clair International Airport Obstruction Clearing EA

Additional comments

Wooded area to east of Moak Drain. Suitable roost trees present with water resources nearby. Heavily trafficked road to east and residences nearby.

Assessment Area Photos

Photo description

Somewhat cluttered understory with a lot of woody debris present on the ground. View to the northeast.

Project Name: St. Clair International Airport Obstruction Clearing EA

Photo description

Several medium sized canopy trees, black cherry make suitable roosts. View to the south.

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Appendix E-5. Modeled Bat Habitat and Proposed Clearing Areas

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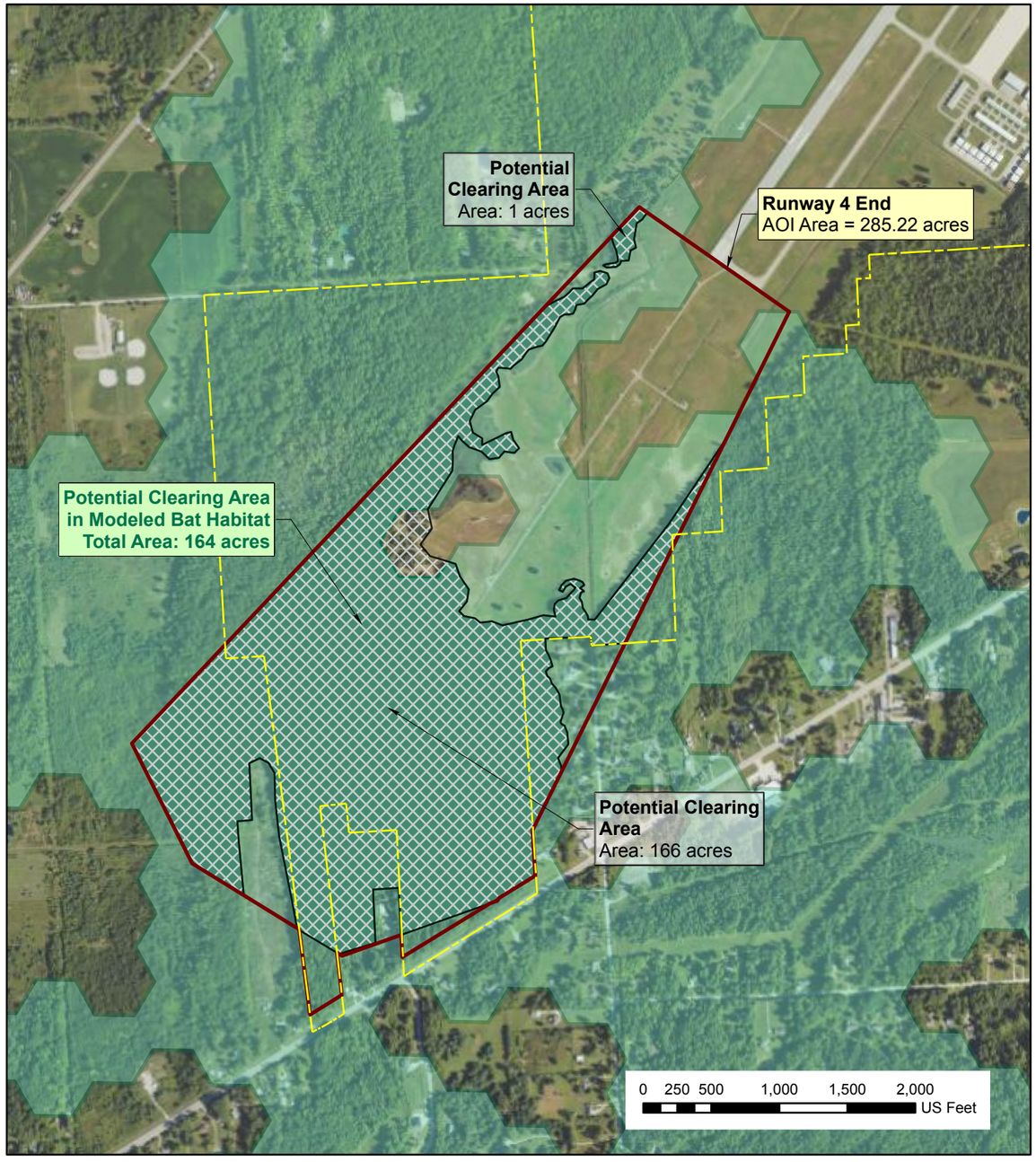

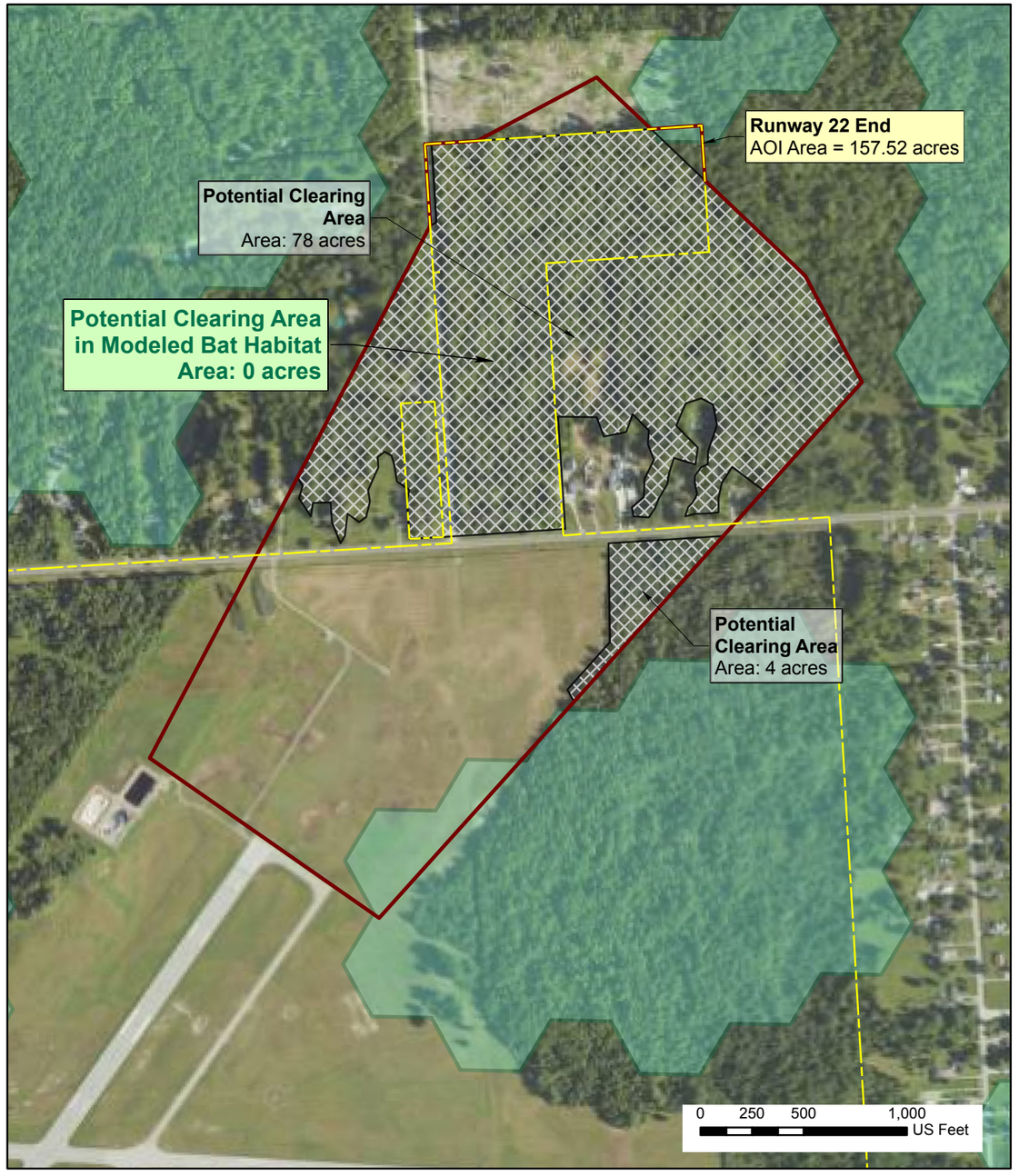

MODELED BAT HABITAT AND POTENTIAL CLEARING AREAS MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

Legend

- Action Area
- Airport Property Line
- Potential Clearing Areas
- Modeled Bat Habitat (v1)
- Potential Clearing Area in Modeled Bat Habitat

Data Sources
1. US FWS Modeled Bat Habitat V1 (https://www.fws.gov/media/indiana-bat-habitat-suitability-model-michigan-d-key/)
2. Image Source: FSA NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: June. 6 - 14, 2023 and Sept. 25 - Oct. 4, 2023

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Appendix F. Bat Acoustic Survey Report & Agency Concurrence

September 4, 2024

Ms. Jenny Wong
U.S. Fish & Wildlife Service
2651 Coolidge Road, Suite 101
East Lansing, MI 48823

Dear Ms. Wong:

Subject: Bat Acoustic Survey Findings Report
St. Clair County International Airport (IPaC #2024-0090531)
Kimball, St. Clair County, Michigan
CEC Project 344-056

Civil & Environmental Consultants, Inc., (CEC) has prepared this report of findings for a bat acoustic survey associated with the proposed St. Clair County International Airport located in Kimball, St. Clair County, Michigan (Project; see attached Figure 1). This survey was undertaken to determine the presence or probable absence of the federally endangered Indiana bats (*Myotis sodalis*) and northern long-eared bats (*M. septentrionalis*), and proposed federally endangered tricolored bats (*Perimyotis subflavus*) at the Project location.

1.0 INTRODUCTION

The Project area of interest is approximately 442 acres, of which approximately 190 acres is forested. Habitat consists of fields, shrublands, early growth forest, emergent/scrub-shrub/forested wetlands, and more mature forest. The herbaceous, tree, and shrub species that comprised the habitat surrounding the acoustic units were green ash (*Fraxinus pennsylvanica*), eastern cottonwood (*Populus deltoides*), quaking aspen (*Populus tremuloides*), narrow leaf cattail (*Typha angustifolia*), eastern white pine (*Pinus strobus*), Canada goldenrod (*Solidago canadensis*), buckthorn (*Rhamnus cathartica*), Norway spruce (*Picea abies*), and oriental bittersweet (*Celastrus orbiculatus*).

The survey followed the methods set forth in the U.S. Fish and Wildlife Service (USFWS) document, *2024 Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines*, dated March 2024. The survey followed the Study Plan provided to your office on July 24, 2024, for which email concurrence was received by CEC on July 24, 2024.

2.0 METHODS

2.1 Acoustic Monitoring

On July 25, 2024, CEC ecologist Jennifer Mayer installed four (4) Anabat Chorus (Titley Scientific, Columbia, Missouri) acoustic detectors along two (2) forest edges and in two (2) interior

forests at the Project (Figure 2). The Project was sampled for a total of 28 detector-nights (four [4] detectors for seven [7] nights). The detectors were placed adhering to Appendix C of the USFWS guidance document. Photographs of the detector installation locations are shown in Attachment A.

2.2 Data Analysis

Acoustic data was downloaded using an SD card and automated identification was made using Kaleidoscope Pro v. 5.4.2 (Wildlife Acoustics – Maynard, Massachusetts).

Kaleidoscope computed a maximum likelihood estimator (MLE) for each species identified on each survey night. The MLE was a probability of certainty for the software's respective identifications, and a value of 0.05 or less indicated that presence of a species on the respective site-night was "likely". Therefore, if Kaleidoscope assigned one or more files an identification to a species, but the MLE for that species was greater than 0.05, presence of that species on that site-night was considered "unlikely" (i.e., not present).

If Indiana bats, northern long-eared bats, or tricolored bats were determined "likely" to be present on a site-night (i.e., the MLE is less than 0.05) by Kaleidoscope, CEC biologist J.D. Wilhide would perform a qualitative assessment of all files recorded on that particular site-night (even those that did not receive an identification from Kaleidoscope). Qualitative assessment involves visually comparing the file in question with known files of that species to determine similarities. It also involves more statistical comparisons using measurements of frequency (minimum/maximum), slope, and call duration. If a call file was determined to have the characteristics of the species as initially identified, it remained as originally identified. If the call file was not consistent with the initial identification, it was reclassified as the species it was considered most consistent with.

3.0 RESULTS

3.1 Summary

Four (4) sites were sampled for seven (7) nights each (28 complete detector-nights) from the evening of July 25, 2024 through July 31, 2024. Weather conditions from the nights of July 25-31, 2024 were within the recommendations set forth by USFWS (e.g., no precipitation longer than 30 minutes, temperature >50° F, etc.).

All recorded call files from the detectors were initially screened with the auto ID program (Kaleidoscope) to determine what bat species were present. The program generated a summary table of the identified calls (Table 1). The summary table organizes the calls by species identified with the number of calls identified for that particular species. Kaleidoscope identified nine (9) species as being "present" at a file level on at least one (1) night of the survey.

Table 1. St. Claire Co. International Airport initial results from Kaleidoscope Pro 5.4.2.

Species	Unit 1	Unit 2	Unit 3	Unit 4
Big Brown Bat (*Eptesicus fuscus*)		905	302	649
Eastern Red Bat (*Lasiurus borealis*)		3	71	3
Hoary Bat (*Lasiurus cinereus*)	1	26	87	12
Silver-Haired Bat (*Lasionycteris noctivagans*)	5	55	20	60
Seminole Bat (*Lasiurus seminolus*)		3	46	8
Little brown bat (*Myotis lucifugus*)		2	5	1
Northern Long-eared Bat (*Myotis septentrionalis*)			1	1
Indiana bat (*Myotis sodalis*)		1	3	
Tricolored Bat (*Perimyotis subflavus*)		3	3	2
Total	**6**	**998**	**538**	**736**

3.2 Qualitative Analysis

Because the presence of tricolored bats, Indiana bats, and northern long-eared bats were determined to be possible based on the results of the automated analysis (MLE > 0.05;), qualitative analysis was performed for the nights of July 25-29 and July 31, 2024. The results of the qualitative analysis for the call files identified as potential tricolored, northern long-eared, Indiana, and little brown bat calls are shown in Table 2. Of these calls, three (3) were identified as little brown bats and two (2) were identified as tricolored bats. All the other calls were determined to be blank after the noise filter was applied or too short for accurate species identification.

Table 2. St. Claire Co. International Airport qualitative review of call files identified as tricolored bats.

Unit	Date	File	Initial Auto ID*	Comments	ID After Individual Qualitative Review
Unit 2	7/25	2024-07-25 2234.28	MYLU		*Myotis lucifugus*
Unit 2	7/25	2024-07-25 2323.38	MYLU	Not consistent with MYLU	*Perimyotis subflavus*
Unit 2	7/27	2024-07-27 2225.45	MYSO	Blank after noise filter	No Id
Unit 2	7/27	2024-07-27 2241.57	PESU	Blank after noise filter	No Id
Unit 2	7/25	2024-07-25 2358.53	PESU	Short 1 pulse	No Id
Unit 2	7/31	2024-08-01 0239.31	PESU	Short 1 pulse	No Id
Unit 3	7/26	2024-07-26 2324.30	MYLU		*Myotis lucifugus*
Unit 3	7/25	2024-07-25 2206.24	MYLU		*Myotis lucifugus*
Unit 3	7/25	2024-07-25 2356.17	MYLU	Blank after noise filter	No Id
Unit 3	7/26	2024-07-27 0126.58	MYLU	Short 4 pulses	No Id

Unit	Date	File	Initial Auto ID*	Comments	ID After Individual Qualitative Review
Unit 3	7/25	2024-07-26 0057.23	MYLU	Short 1 pulse	No Id
Unit 3	7/31	2024-08-01 0310.10	MYSE	Blank after noise filter	No Id
Unit 3	7/25	2024-07-25 2210.24	MYSO	Short 4 pulses	No Id
Unit 3	7/27	2024-07-28 0159.52	MYSO	Short 1 pulse	No Id
Unit 3	7/27	2024-07-27 2342.55	MYSO	Short 2 pulses	No Id
Unit 3	7/29	2024-07-30 0434.44	PESU		*Perimyotis subflavus*
Unit 3	7/25	2024-07-25 2214.16	PESU	Blank after noise filter	No Id
Unit 3	7/29	2024-07-30 0346.58	PESU	Blank after noise filter	No Id
Unit 4	7/29	2024-07-29 2257.56	MYLU	Blank after noise filter	No Id
Unit 4	7/25	2024-07-25 2122.38	MYSE	Short 1 pulse	No Id
Unit 4	7/28	2024-07-29 0302.56	PESU	Short 3 pulses	No Id
Unit 4	7/26	2024-07-26 2238.05	PESU	Short 1 pulse	No Id

* MYLU = Little brown bat (*Myotis lucifugus*), MYSE = Northern long-eared bat (*Myotis septentrionalis*), MYSO = Indiana bat (*Myotis sodalis*), PESU = Tricolored bat (*Perimyotis subflavus*).

4.0 CONCLUSIONS

Acoustic monitoring occurred during the nights of July 25-31, 2024, using four (4) Anabat Chorus acoustic detectors at the Project location in St. Clair County, Michigan. A total of 2,278 bat calls from nine (9) species were identified by the Kaleidoscope automated ID program. After qualitative analysis, northern long-eared bats and Indiana bats were removed from the species list. Specifically, qualitative analysis confirmed the presence of tricolored bats and little brown bats with two (2) verified tricolored bat calls and three (3) verified little brown bat calls. A total of 17 other calls identified as little brown bats, Indiana bats, northern long-eared bats, or tricolored bats by the automated ID program were determined to be blank after the noise filter was applied or too short for accurate species identification.

Based on these results, the presence of Indiana and northern long-eared bats within the Project area is unlikely, and therefore, CEC has concluded that that proposed clearing of forest within the Project area is not likely to adversely affect these species. This report requests concurrence from the USFWS with our opinion regarding Indiana bats and northern long-eared bats, and requests further information regarding any potential impacts to tricolored bats given the two (2) confirmed calls that were identified.

5.0 CLOSING

If you have any questions regarding this letter, or require any additional information, please contact Ryan Slack at (513) 237-5051 or via email at rslack@cecinc.com.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

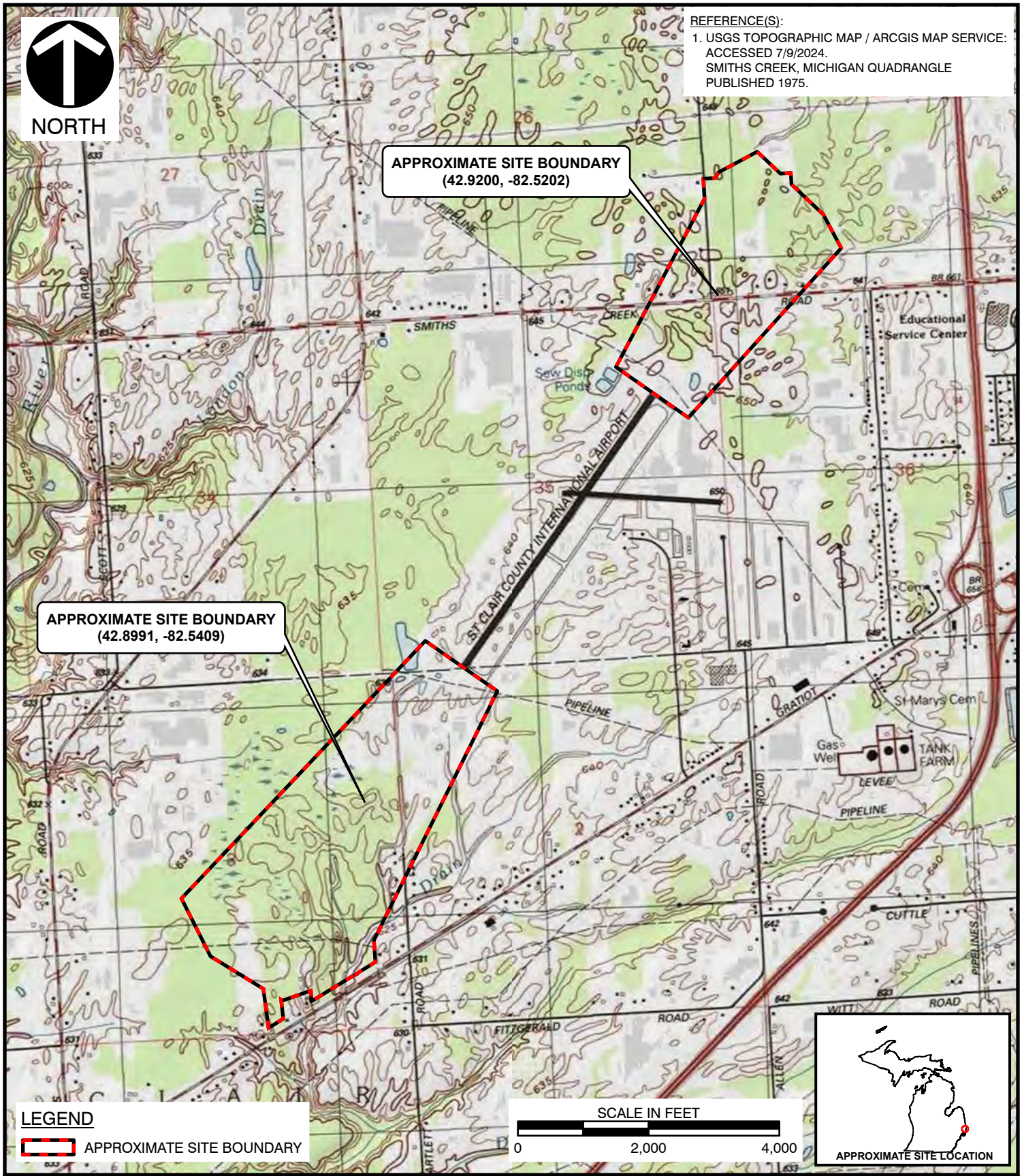
Scott Goodfellow
Project Manager

Ryan A. Slack
Principal

Figures: Figure 1 – Bat Study Topographic Map
Figure 2 – Bat Study Aerial Map

Attachments: Attachment A – Site Photographs

FIGURES



Civil & Environmental Consultants, Inc.

530 E. Ohio Street
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MEAD & HUNT, INC.
ACOUSTIC BAT SURVEY; ST. CLAIR COUNTY INTERNATIONAL AIRPORT; KIMBALL, ST CLAIR COUNTY, MI
ST. CLAIR COUNTY, MICHIGAN

SITE LOCATION MAP

DRAWN BY:	BPT	CHECKED BY:	STG	APPROVED BY:	RAS*	FIGURE NO:	1
DATE:	7/9/2024	SCALE:	1"=2,000'	PROJECT NO:	344-056		

*Hand Signature on file

P:\340-000\344-056\-GIS\Maps\EC01_Kimball_MI_BatSurvey_Delineation\344056_EC01_Kimball_MI_BatSurvey_Delineation.aprx 7/9/2024 9:34 AM (bthompson)

P:\340-000\344-056\-GIS\Maps\EC01_Kimball_MI_BatSurvey_AcousticLocations\344056_EC01_Kimball_MI_BatSurvey_Delineation.aprx 8/28/2024 2:09 PM (sgoodfellow)

NORTH

Allen Rd

Allen Rd

Unit 4

Smiths Creek Rd

Smiths Creek Rd

Creek Rd

Runway 22 End

Unit 3

22

REFERENCES

1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY, ACCESSED 8/28/2024

2. MAP WAS DEVELOPED FOR PLANNING PURPOSES ONLY AND MAY NOT BE SUITABLE FOR CERTAIN LEGAL, ENGINEERING, OR SURVEYING PURPOSES. USERS OF THIS INFORMATION SHOULD REVIEW OR CONSULT THE PRIMARY DATA AND INFORMATION SOURCES TO ASCERTAIN THE APPROPRIATE USE OF THE INFORMATION.

3. ALL LENGTHS AND AREAS ARE APPROXIMATE.

SCALE IN FEET

0 200 400 600 800 1,000

LEGEND

- APPROXIMATE SITE BOUNDARY
- ACOUSTIC DETECTOR LOCATION

Civil & Environmental Consultants, Inc.

530 E. Ohio Street
Suite G
Indianapolis, IN 46204
Ph: 317.655.7777 · 877.746.0749

www.cecinc.com

MEAD & HUNT, INC.
ST. CLAIR COUNTY INTERNATIONAL AIRPORT
KIMBALL, ST. CLAIR COUNTY, MI

BAT STUDY PLAN AERIAL MAP

DRAWN BY:	BPT	CHECKED BY:	STG	APPROVED BY:	RAS*	FIGURE NO:	2
DATE:	8/28/2024	SCALE:	1"=350'	PROJECT NO:	344-056		

*Hand signature on file

P:\340-000\344-056\-GIS\Maps\EC01_Kimball_MI_BatSurvey_AcousticLocations\344056_EC01_Kimball_MI_BatSurvey_Delineation.aprx 8/28/2024 2:09 PM (sgoodfellow)

REFERENCES

1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY, ACCESSED 8/28/2024
2. MAP WAS DEVELOPED FOR PLANNING PURPOSES ONLY AND MAY NOT BE SUITABLE FOR CERTAIN LEGAL, ENGINEERING, OR SURVEYING PURPOSES. USERS OF THIS INFORMATION SHOULD REVIEW OR CONSULT THE PRIMARY DATA AND INFORMATION SOURCES TO ASCERTAIN THE APPROPRIATE USE OF THE INFORMATION.
3. ALL LENGTHS AND AREAS ARE APPROXIMATE.

SCALE IN FEET

0 275 550 825 1,100 1,375

LEGEND

- APPROXIMATE SITE BOUNDARY
- ACOUSTIC DETECTOR LOCATION

Civil & Environmental Consultants, Inc.

530 E. Ohio Street
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www.cecinc.com

MEAD & HUNT, INC.
ST. CLAIR COUNTY INTERNATIONAL AIRPORT
KIMBALL, ST. CLAIR COUNTY, MI

BAT STUDY PLAN AERIAL MAP

DRAWN BY:	BPT	CHECKED BY:	STG	APPROVED BY:	RAS*	FIGURE NO:	2
DATE:	8/28/2024	SCALE:	1"=475'	PROJECT NO:	344-056		

*Hand signature on file

ATTACHMENT A
SITE PHOTOGRAPHS

Photo 1: Unit 1 Acoustic Detector

Photo 2: Unit 1 Acoustic Detector Habitat

Photo 3: Unit 1 Acoustic Detector Habitat

Photo 4: Unit 1 Acoustic Detector Habitat

Photo 5: Unit 2 Acoustic Detector

Photo 6: Unit 2 Acoustic Detector Habitat

Photo 7: Unit 2 Acoustic Detector Habitat

Photo 8: Unit 2 Acoustic Detector Habitat

Photo 9: Unit 3 Acoustic Detector Habitat

Photo 10: Unit 3 Acoustic Detector Habitat

Photo 11: Unit 3 Acoustic Detector Habitat

Photo 12: Unit 3 Acoustic Detector Habitat

Photo 13: Unit 4 Acoustic Detector Habitat

Photo 14: Unit 4 Acoustic Detector Habitat

Photo 15: Unit 4 Acoustic Detector Habitat

Photo 16: Unit 4 Acoustic Detector Habitat

From:	Wong, Jennifer (Jenny)
To:	Slack, Ryan; Goodfellow, Scott
Cc:	Brauna Hartzell; East Lansing, FW3; MIFO TE, FW3; dnr-statetepermit@michigan.gov; William Ballard; DePue, John (DNR)
Subject:	Re: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)
Date:	Monday, September 16, 2024 8:33:53 AM
Attachments:	image001.png image002.png R LR 344-056 2024 09-04 M&H - Kimball, MI - Acoustic Bat Survey Results.pdf

---

Ryan,

The USFWS has reviewed your September 4, 2024 bat acoustic survey report for the proposed St. Clair County International Airport in Kimball, St. Clair County, Michigan (CEC Project 344-056, IPaC code 024-0090531).

Acoustic monitoring occurred during the nights of July 25-31, 2024, using four (4) acoustic detectors, totaling 28 detector-nights. A total of 2,278 bat calls from nine (9) species were auto-identified by USFWS-approved auto-identification software. Four (4) calls initially auto-classified as Indiana bat and two (2) calls auto-classified as northern long-eared bat were ruled out through subsequent qualitative analysis. Qualitative analysis did verify two (2) tricolored bat calls and three (3) little brown bat calls, suggesting these species are present within the project area.

We have found your survey methodology and level of effort to be appropriate and consistent with USFWS Guidelines. Because the results indicate the probable absence of Indiana and northern long-eared bat within the project area, tree clearing and other activities associated with the project are unlikely to affect these species regardless of when the activities occur.

The tricolored bat is not a federally listed species but is currently proposed for listing as endangered under the federal Endangered Species Act and is also state-listed as threatened in Michigan. Little brown bats are also listed as state threatened. Therefore, we recommend the project coordinate with the Michigan DNR on obtaining a state threatened and endangered species permit.

The project requires clearing up to 190 acres of forest habitat. NLCD (2019) forest cover within 5x5-km grid cells overlapping the project area is greater than 50%, and greater than 60% in cells overlapping the detector locations where tricolored bat calls were confirmed. Tricolored bats roost (typically among live or dead foliage) in a wide variety of trees, and suitable roosts are abundant in Michigan. Therefore, we do not expect this project to adversely affect tricolored bats if the trees can be cut outside the species' summer roosting period (May 15 through July 31), as is planned."

In accordance with the Guidelines, the results of the survey will remain valid for a minimum of five (5) complete summer maternity seasons.

Thank you for your coordination, and please reach out if you have any questions or concerns.

Jenny Wong
(she/her)
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
*****NEW OFFICE NUMBER*** 517-580-5440**
Jennifer_Wong@fws.gov
<<^.*.^>>

From: Slack, Ryan <rslack@cecinc.com>
Sent: Thursday, September 5, 2024 6:46 AM
To: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>; Goodfellow, Scott <sgoodfellow@cecinc.com>
Cc: brauna.hartzell@meadhunt.com <brauna.hartzell@meadhunt.com>; East Lansing, FW3 <EastLansing@fws.gov>; MIFO TE, FW3 <MIFO_TE@fws.gov>; dnr-statetepermit@michigan.gov <DNR-StateTEPermit@michigan.gov>; William Ballard <william.ballard@meadhunt.com>
Subject: RE: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Hi Jenny,

This is the report of results for this acoustic survey. We are seeking your review, concurrence, and comments.

Thanks,
Ryan

Ryan A. Slack | *Principal*
Civil & Environmental Consultants, Inc.
530 E. Ohio Street, Suite G, Indianapolis, IN 46204
direct 317.613.4505 **office** 317.655.7777 **mobile** 513.237.5051
www.cecinc.com

From: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Sent: Wednesday, July 24, 2024 5:16 PM
To: Goodfellow, Scott <sgoodfellow@cecinc.com>
Cc: brauna.hartzell@meadhunt.com; Slack, Ryan <rslack@cecinc.com>; East Lansing, FW3 <EastLansing@fws.gov>; MIFO TE, FW3 <MIFO_TE@fws.gov>; dnr-statetepermit@michigan.gov
Subject: Re: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Thanks, Scott- signed version attached. As I let Ryan know per an earlier survey request, MYLE are not known to occur in Michigan, but there's evidence to suggest that LASE may be colonizing/migrating through the state. Therefore, we would recommend omitting

MYLE and including LASE in the automated analysis.
Let me know if we can provide any further assistance,

Jenny Wong
(she/her)
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
*****NEW OFFICE NUMBER*** 517-580-5440**
Jennifer_Wong@fws.gov
<<^.*.^>>

From: Goodfellow, Scott <sgoodfellow@cecinc.com>
Sent: Wednesday, July 24, 2024 8:06 AM
To: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Cc: brauna.hartzell@meadhunt.com <brauna.hartzell@meadhunt.com>; Slack, Ryan <rslack@cecinc.com>
Subject: RE: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Hi Jenny,

Please see the attached.

Thanks,

Scott T. Goodfellow, PWS | *Project Manager*
Civil & Environmental Consultants, Inc.
530 E. Ohio Street, Suite G, Indianapolis, IN 46204
direct 317.613.4504 **office** 317.655.7777 **mobile** 317.503.0458
www.cecinc.com

From: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Sent: Tuesday, July 23, 2024 4:59:14 PM
To: Slack, Ryan <rslack@cecinc.com>
Cc: brauna.hartzell@meadhunt.com <brauna.hartzell@meadhunt.com>; MIFO TE, FW3 <MIFO_TE@fws.gov>
Subject: Re: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Hi Ryan, did you attach an earlier version by mistake? I'm still not seeing the fed agency or acres of suitable habitat to be cleared.

Jenny Wong
(she/her)
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
*****NEW OFFICE NUMBER*** 517-580-5440**
Jennifer_Wong@fws.gov
<<^.*.^>>

From: Slack, Ryan <rslack@cecinc.com>
Sent: Wednesday, July 17, 2024 12:23 PM
To: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Cc: brauna.hartzell@meadhunt.com <brauna.hartzell@meadhunt.com>
Subject: RE: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Jenny,

The attached should answer both your needs.

Thanks,
Ryan

Ryan A. Slack | *Principal*
Civil & Environmental Consultants, Inc.
530 E. Ohio Street, Suite G, Indianapolis, IN 46204
direct 317.613.4505 **office** 317.655.7777 **mobile** 513.237.5051
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From: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Sent: Monday, July 15, 2024 3:01 PM
To: Slack, Ryan <rslack@cecinc.com>
Cc: brauna.hartzell@meadhunt.com
Subject: Re: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Hi Ryan,
You indicated that this project has a federal nexus. Can you please indicate the federal action agency and specify the number of acres of overall suitable (or assumed suitable)

bat habitat and acres that may be impacted on pg. 2? Thanks!

Jenny Wong
(she/her)
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
*****NEW OFFICE NUMBER*** 517-580-5440**
Jennifer_Wong@fws.gov
<<^.*.^>>

From: Slack, Ryan <rslack@cecinc.com>
Sent: Wednesday, July 10, 2024 2:06 PM
To: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Cc: brauna.hartzell@meadhunt.com <brauna.hartzell@meadhunt.com>
Subject: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Hi Jenny,

Attached is a study plan with shapefiles to conduct an acoustic presence/probable absence survey in St. Claire County for your review and concurrence. The client is interested in having us start the survey as early as July 22.

Thank you for your time. Please let me know if you have any questions.

Ryan

Ryan A. Slack / Principal
Civil & Environmental Consultants, Inc.
530 E. Ohio Street, Suite G · Indianapolis, IN 46204
Toll-Free: (877) 746-0749 · Fax: (317) 655-7778
Mobile: (513) 237-5051 · http://www.cecinc.com
Senior Leadership · Integrated Services · Personal Business Relationships

Appendix G. Eastern Prairie Fringed Orchid Survey

PREPARED BY

Mead & Hunt

APPENDIX G. EASTERN PRAIRIE FRINGED ORCHID SURVEY

ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN)
ENVIRONMENTAL ASSESSMENT FOR RUNWAY 4/22 APPROACH CLEARING
PROJECT NUMBER 1937800-210771.01

FEBRUARY 2025

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CONTENTS

APPENDICES

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1. Introduction

Platanthera leucophaea (eastern prairie fringed orchid or prairie white-fringed orchid) is an orchid found in wet prairies and other wet open sites with alkaline and lacustrine soils. Its current range covers eight states from eastern Iowa and northeastern Missouri, the northern portions of Illinois, Indiana, and Ohio, and the southern half of Wisconsin and Michigan. A small portion of the plant's range is found at the northern tip of the Lower Peninsula of Michigan. A disparate population is found in northern Maine.

The plant is listed as an endangered plant by the state of Michigan and is critically imperiled (S1). This orchid was listed as threatened by the U.S. Fish and Wildlife Service in October 1989 and is protected under the Endangered Species Act. During field work between June 8-15, 2023, multiple populations of *Cypripedium parviflorum* (yellow lady-slipper orchid) and other known habitat associates were identified within the Rwy 4 End Action Area along Gratiot Avenue. This site is located directly south of the main airport facility.

Other associated species identified within this portion of the Action Area included: *Schizachyrium scoparium* (little bluestem), *Cornus alba* (red osier) and *C. amomum* (silky dogwood), *Pycnanthemum virginianum* (mountain mint), *Gentianopsis crinita* (fringed gentian), and *Cladium mariscoides* (twig-rush).

Upon the identification of known associated species within this lakeplain wet prairie site, and due to its protected status, a meander search was conducted for the eastern prairie fringed orchid. The search was conducted by biologist and botanist Kim Shannon (Mead & Hunt).

2. Methodology

The eastern prairie fringed orchid is a perennial characterized by a leafy stem, that may grow up to one meter in height, that has lanceolate leaves at the base and along the smooth stem. The stem and leaves are a distinct yellowish-green color. The terminal flowering stalk, or panicle, can produce between 5 to 40 showy flowers that are creamy-white with a prominent 3-lobed fringed lower lip. The blooming period in Michigan is typically late June to early July. This orchid is a hydrophytic species and is listed as FACW within the North Central and Northeast (NCNE) U.S. Army Corps of Engineers (USACE) wetland region. This species is known to be long-lived with individuals documented as living for more than 30 years (MNFI, 2004).

In Michigan, this plant is found in wet to moist sites with alkaline and lacustrine soils, typically in moist prairie remnants associated with lakeplains. It may also be found in semi-open to open bogs. While this orchid is rare, it can colonize disturbed sites like ditches, unmown old fields, and other sites when appropriate soil fungi are present.

On June 9, 2023, a meander search was conducted for the eastern prairie fringed orchid within the northern third of the Rwy 4 End Action Area. See **Appendix G-1** for an Orchid Survey Map. This portion of the site is characterized by open/lightly maintained grassland with trees and shrubs along a network of drainages and man-made ditches. The drainages and ditches are functioning wetlands that may or may not be jurisdictional based on current USACE guidelines and definitions. Multiple populations of the

yellow lady-slipper orchid were found within or near this wetland habitat. Surrounding forested areas were not searched due to the lack of open and sunny conditions required for this orchid. Areas within the perimeter fence to the north were not searched due to the likelihood that regular maintenance activities would limit reliable vegetation identification. In addition, these regular mowing activities would likely severely restrict the viable habitat for the orchid.

The meander search was concentrated along the wetland ditches and drainages in this portion of the Action Area. The locations of the yellow lady-slipper (a FAC wetland species within the NCNE region) populations were used to direct efforts for the meander search, due to similar habitat requirements. Due to the time of year, prior to the typical bloom time for the orchid, only vegetative parts of the plant were searched for.

3. Results

No stems resembling the eastern prairie fringed orchid were identified within the area of the meander search. While yellow lady-slipper populations, a facultative wetland species in this region, were found along the edges of drainageways, potential eastern prairie fringed orchid populations would need the more consistent long-term moisture conditions found within ditches and drainageways to thrive.

The moist and wet habitats within the meander search area needed to accommodate this FACW species were often overgrown with trees and shrubs including *Populus deltoides* (cottonwood), *Alnus incana* (speckled alder), and dogwoods. *Phragmites australis* (common reed) commonly dominated other drainageways not covered by woody vegetation. The orchid requires open areas, with little to no tree or shrub canopy. Representative site photos are presented in **Appendix G-2**.

4. References

Eastern prairie fringed orchid overview. US Fish and Wildlife Service. Accessed at Eastern Prairie Fringed Orchid (*Platanthera leucophaea*) | U.S. Fish & Wildlife Service (fws.gov)

Michigan Natural Features Inventory (MNFI) (2004). *Platanthera leucophaea* abstract. 3 pages. Michigan State University, Lansing, MI. Retrieved from https://mnfi.anr.msu.edu/abstracts/botany/Platanthera_leucophaea.pdf

5. List of Preparers and Contributors

The preparers of this document are:

Kim Shannon
110 S. Hartford Avenue
Suite 100, Office 1010
Tulsa, OK 74120
Mead & Hunt, Inc.

Brauna Hartzell, GISP, PWS
2440 Deming Way
Middleton, WI 53562
Mead & Hunt, Inc.

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Appendix G-1. Orchid Survey Map

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Image Source: NAIP Imagery, 2022

ORCHID SURVEY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

0 250 500 Feet

N

Legend

- Project Area of Interest (AOI)
- Fringed Orchid Meander Survey Area
- Airport Property Boundary
- Pipeline Corridor
- Two-track road
- Existing Fence

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
Area of Interest: 41.3 acres
USGS Quad: Smiths Creek
Field work: June 9, 2023

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Appendix G-2. Site Photographs

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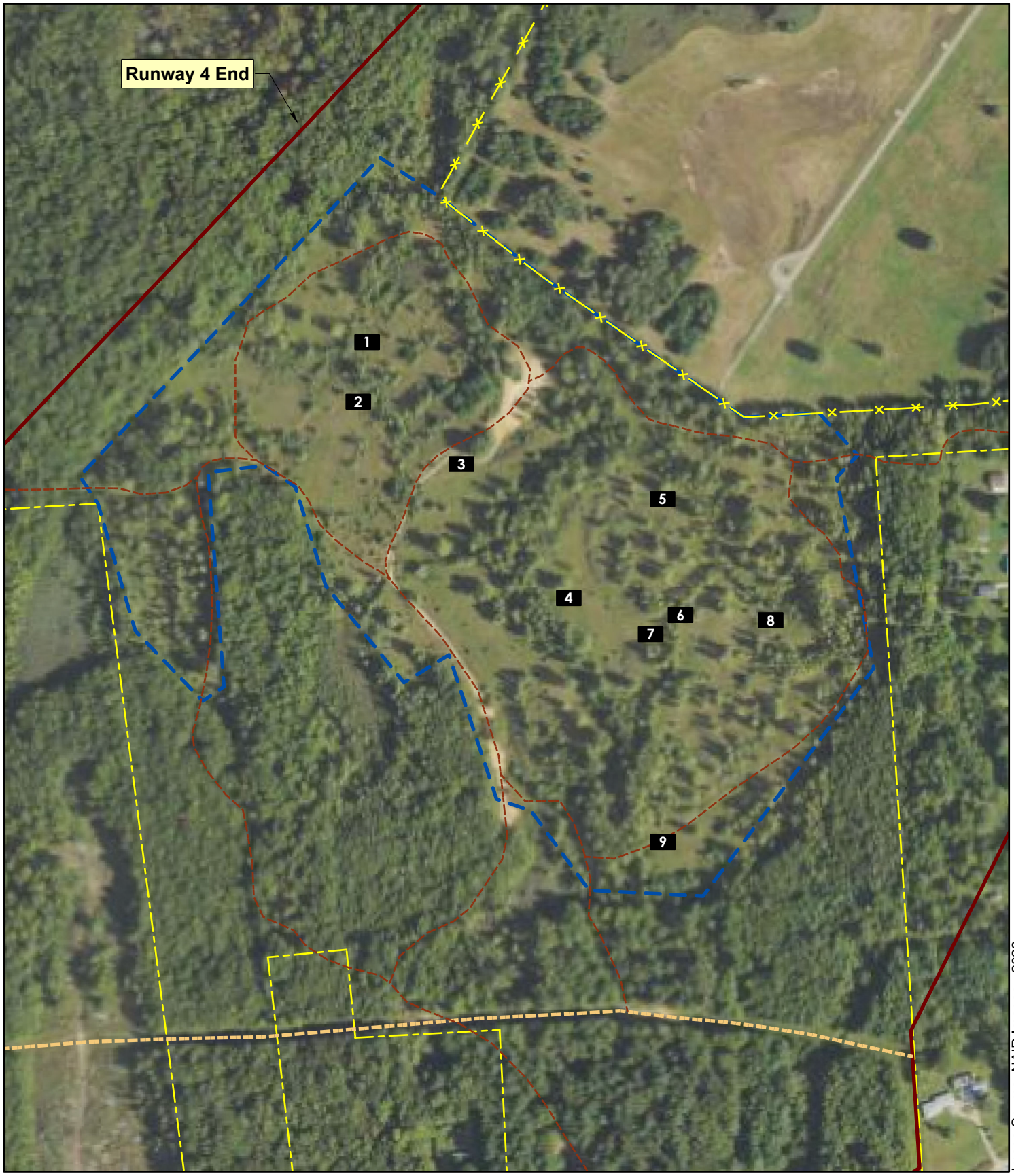


Image Source: NAIP Imagery, 2022

ORCHID SURVEY SITE PHOTOGRAPH LOCATIONS

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

0 250 500 Feet

Legend

- Project Area of Interest (AOI)
- Fringed Orchid Meander Survey Area
- Airport Property Boundary
- Photo Location
- Pipeline Corridor
- Two-track road
- Existing Fence

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
Area of Interest: 41.3 acres
USGS Quad: Smiths Creek
Field work: June 9, 2023

Photo 1. General site. View to the northeast. (09-26-2023)

Photo 2. General site upland area. View to the south. (09-30-2023)

Photo 3. General site. View to the south. (09-30-2023)

Photo 4. Wetland drainageway general site. View to the southwest. (09-28-2023)

Photo 5. Phragmites-dominated drainageway. View to the southeast. (09-28-2023)

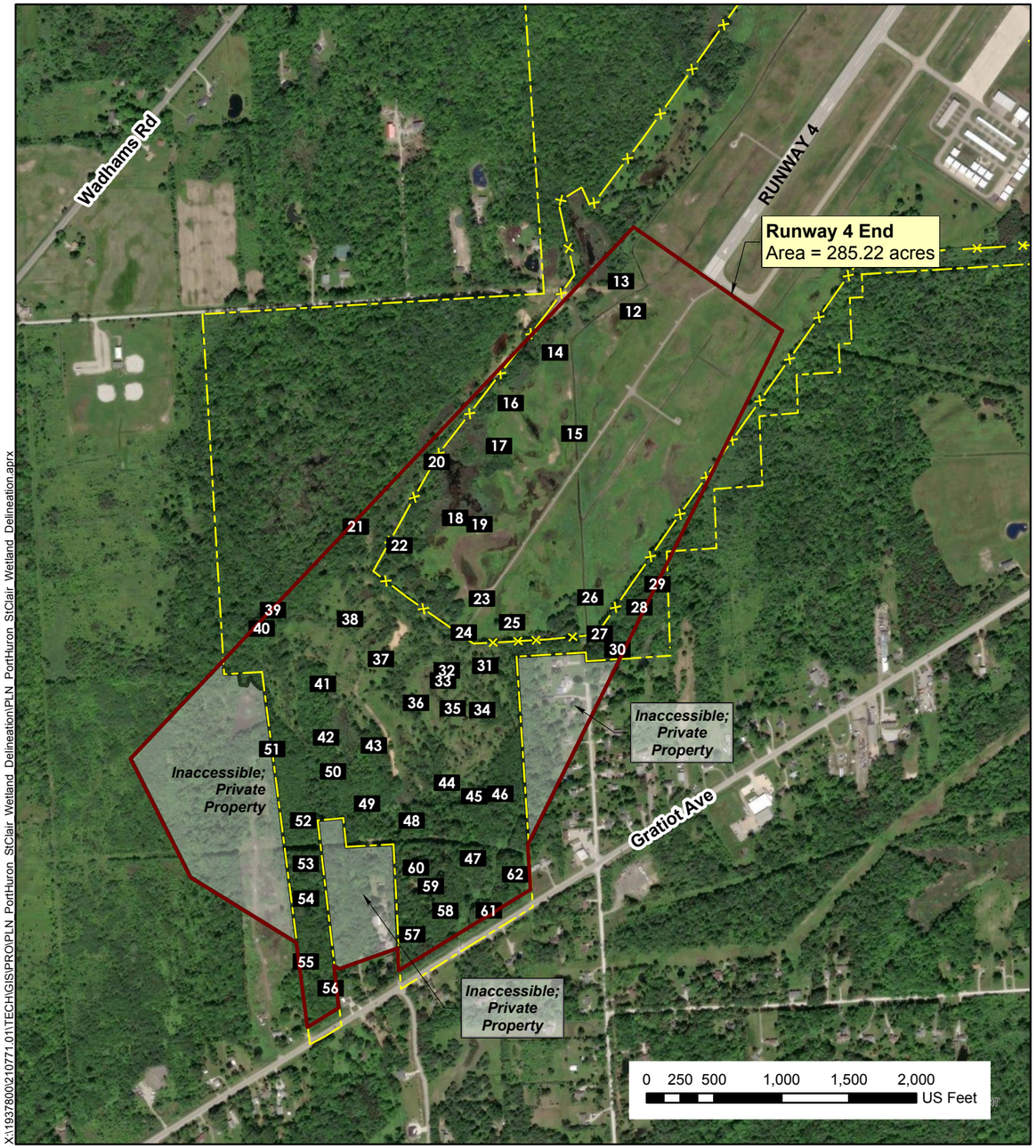
Photo 6. Narrow drainageway segment. View to the north. (06-09-2023)

Photo 7. General site. View to the north. (09-28-2023)

Photo 8. Drainageway with young cottonwoods. View to the northwest. (09-30-2023)

Photo 9. General site upland area. View to the northeast. (09-28-2023)

Appendix H. Site Photographs



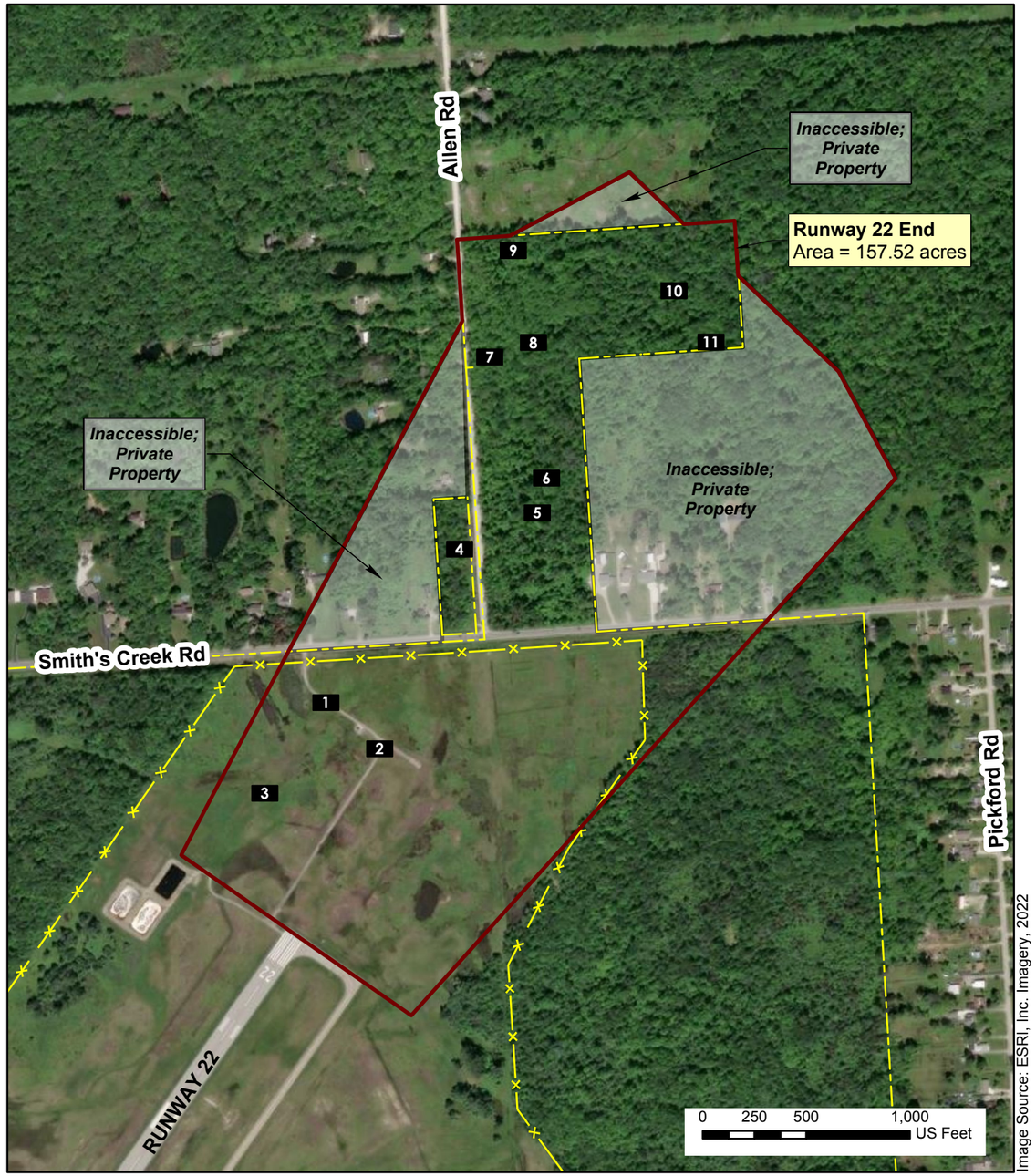


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Image Source: ESRI, Inc. Imagery, 2022

PHOTO LOCATION MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

N

Legend

- Project Area of Interest (AOI)
- Inaccessible Area/Private Property
- Photo Location
- Existing Fence
- Airport Property Boundary

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: June. 6 - 14, 2023 and Sept. 25 - Oct. 4, 2023

Photo 1. Infield Rwy 22 end, general site. View to the southeast. (08-16-2022)

Photo 2. Infield Rwy 22 end, general site. View to the southwest. (08-16-2022)

Photo 3. Infield Rwy 22 end, general site. View to the east. (08-16-2022)

Photo 4. Forested area, Rwy 22 end, general site. View to the west. (08-18-2022)

Photo 5. Forested area, Rwy 22 end, general site. View to the southeast. (08-19-2022)

Photo 6. Forested area, Rwy 22 end, general site. View to the south. (08-19-2022)

Photo 7. Forested area, Rwy 22 end, general site. View to the south. (08-22-2022)

Photo 8. Forested area, Rwy 22 end, central depressional area. View to the north. (08-19-2022)

Photo 9. Forested area, Rwy 22 end, general site. View to the north. (06-12-2023)

Photo 10. Forested area, Rwy 22 end, general site. View to the east. (08-22-2022)

Photo 11. Forested area, Rwy 22 end, general site. View to the east. (8-22-2022)

Photo 12. Infield Rwy 4 end, mown regularly. View to the southwest. (8-17-2022)

Photo 13. Rwy 4 end, ditch, general site. Looking downstream. View to the east. (08-17-2022)

Photo 14. Rwy 4 end, general site. View to the southwest. (10-04-2022)

Photo 15. Rwy 4 end, general site. Looking upstream. View to the north. (08-17-2022)

Photo 16. Rwy 4 end, general site. View to the northeast. (10-04-2022)

Photo 17. Rwy 4 end, general site. View to the northwest. (10-04-2022)

Photo 18. Rwy 4 end, general site. View to the north. (06-07-2023)

Photo 19. Rwy 4 end, general site. View to the west. (10-05-2022)

Photo 20. Rwy 4 end, general site. View to the southeast. (06-07-2023)

Photo 21. Forested area, Rwy 4 end, general site. View to the northeast. (06-13-2023)

Photo 22. Forested area, Rwy 4 end, general site. View to the north. (10-05-2022)

Photo 23. Infield, Rwy 4 end, general site. View to the southwest. (10-06-2022)

Photo 24. Infield, Rwy 4 end, general site. View to the north. (10-06-2022)

Photo 25. Fenceline, general site. View to the south. (10-06-2022)

Photo 26. Infield, Rwy 4 end, general site. View to the northeast. (10-07-2022)

Photo 27. Forested area, Rwy 4 end, general site. View to the northeast. (10-07-2022)

Photo 28. Forested area, Rwy 4 end, general site. View to the northeast. (06-07-2023)

Photo 29. Forested area, Rwy 4 end, general site. View to the southwest. (06-08-2023)

Photo 30. Forested area, Rwy 4 end, general site. View to the northwest. (06-08-2023)

Photo 31. Scrub-shrub area, Rwy 4 end, drainage ditch. View to the west. (06-09-2023)

Photo 32. Scrub-shrub area, Rwy 4 end,, phragmites. View to the southeast. (09-28-2023)

Photo 33. Scrub-shrub area, Rwy 4 end, general site. View to the south. (09-28-2023)

Photo 34. Scrub-shrub area, Rwy 4 end, with young cottonwoods. View to the northwest. (09-30-2023)

Photo 35. Scrub-shrub area, Rwy 4 end, ditch segment, narrow. View to the north. (06-09-2023)

Photo 36. Scrub-shrub area, Rwy 4 end, drainage general site. View to the southwest. (09-28-2023)

Photo 37. Scrub-shrub area, Rwy 4 end, general site. View to the south. (09-30-2023)

Photo 38. Scrub-shrub area, Rwy 4 end, general site. View to the northeast. (09-26-2023)

Photo 39. Forested area, Rwy 4 end, general site. View to the north. (09-26-2023)

Photo 40. Forested area, Rwy 4 end, general site. View to the south. (09-30-2023)

Photo 41. Forested area, Rwy 4 end, general site. View to the northwest. (06-14-2023)

Photo 42. Forested area, Rwy 4 end, general site. View to the north. (10-01-2023)

Photo 43. Forested area, Rwy 4 end, general site. View to the southwest. (06-13-2023)

Photo 44. General site upland area, Rwy 4 end. View to the northeast. (09-28-2023)

Photo 45. Forested wetland area, standing water. View to the west. (09-29-2023)

Photo 46. Immature white pine dominated area, Rwy 4 end. View to the south. (9-29-2023)

Photo 47. Forested area, Rwy 4 end, ditch floodplain. View to the south. (10-02-2023)

Photo 48. Forested area, Rwy 4 end, downed trees. View to the northwest. (10-04-2023)

Photo 49. Forested area, Rwy 4 end, general site. View to the northwest. (06-13-2023)

Photo 50. Forested area, Rwy 4 end, general site.. View to the northeast. (06-14-2023)

Photo 51. Forested area, Rwy 4 end, general site. View to the northeast. (10-01-2023)

Photo 52. Forested area, Rwy 4 end, general site. View to the west. (10-02-2023)

Photo 53. Forested area, Rwy 4 end, general site. View to the south. (10-01-2023)

Photo 54. Forested area, Rwy 4 end, general site. View to the south. (10-01-2023)

Photo 55. Forested area, Rwy 4 end, general site. View to the south. (10-01-2023)

Photo 56. Forested area, Rwy 4 end, sparsely vegetated concave surface. View to the north. (10-01-2023)

Photo 57. Forested area, Rwy 4 end, drainage to north. View to the north. (10-03-2023)

Photo 58. Forested area, Rwy 4 end, narrow ditch flowing to east. View to the northwest. (10-03-2023)

Photo 59. Forested area, Rwy 4 end, general site. View to the south. (10-02-2023)

Photo 60. Forested area, Rwy 4 end, depressional basin. View to the southeast. (10-03-2023)

Photo 61. Forested area, Rwy 4 end, dominated by white pine. View to the southeast. (10-02-2023)

Photo 62. Forested area, Rwy 4 end, interior. View to the north. (10-02-2023)

Appendix I. Agency Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To: 01/16/2025 15:19:20 UTC
Project Code: 2024-0090531
Project Name: Port Huron/St. Clair (PHN) County Airport Environmental Assessment for Approach Clearing

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:

Official Species List
The attached species list identifies any Federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement section 7 of the Endangered Species Act), the accuracy of this species list should be verified after 90 days. You may verify the list by visiting the IPaC website (https://ipac.ecosphere.fws.gov/) at regular intervals during project planning and implementation. To update an Official Species List in IPaC: from the My Projects page, find the project, expand the row, and click Project Home. In the What's Next box on the Project Home page, there is a Request Updated List button to update your species list. Be sure to select an "official" species list for all projects.

Consultation requirements and next steps
Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize Federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-Federal representative) must consult with the Fish and Wildlife Service if they determine their project may affect listed species or critical habitat.

There are two approaches to evaluating the effects of a project on listed species.

Approach 1. Use the All-species Michigan determination key in IPaC. This tool can assist you in

making determinations for listed species for some projects. In many cases, the determination key will provide an automated concurrence that completes all or significant parts of the consultation process. Therefore, we strongly recommend screening your project with the **All-Species Michigan Determination Key (Dkey)**. For additional information on using IPaC and available Determination Keys, visit https://www.fws.gov/media/mifo-ipac-instructions (and click on the attachment), or for a video overview, please visit: https://www.youtube.com/watch?v=FfcerNCiL0I. Please carefully review your Dkey output letter to determine whether additional steps are needed to complete the consultation process.

Approach 2. Evaluate the effects to listed species on your own without utilizing a determination key. Once you obtain your official species list, you are not required to continue in IPaC, although in most cases using a determination key should expedite your review. If the project is a Federal action, you should review our section 7 step-by-step instructions before making your determinations: https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance. If you evaluate the details of your project and conclude "no effect," document your findings, and your listed species review is complete; you do not need our concurrence on "no effect" determinations. If you cannot conclude "no effect," you should coordinate/consult with the Michigan Ecological Services Field Office. The preferred method for submitting your project description and effects determination (if concurrence is needed) is electronically to EastLansing@fws.gov. Please include a copy of this official species list with your request.

For all **wind energy projects**, please contact this field office directly for assistance, even if no Federally listed plants, animals or critical habitat are present within your proposed project area or may be affected by your proposed project.

Migratory Birds
Please see the "Migratory Birds" section below for important information regarding incorporating migratory birds into your project planning. Our Migratory Bird Program has developed recommendations, best practices, and other tools to help project proponents voluntarily reduce impacts to birds and their habitats. The Bald and Golden Eagle Protection Act prohibits the take and disturbance of eagles without a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at https://www.fws.gov/program/eagle-management to help you avoid impacting eagles or determine if a permit may be necessary.

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 consideration of threatened and endangered species during your project

planning. Please include a copy of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

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

This species list is provided by:

Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
(517) 351-2555

PROJECT SUMMARY

Project Code: 2024-0090531

Project Name: Port Huron/St. Clair (PHN) County Airport Environmental Assessment for Approach Clearing

Project Type: Clearing Land

Project Description: Obstruction clearing is proposed on both Airport owned property as well as private property in the approaches of Runway 4/22. Potential obstructions are found on Airport owned property, private property with existing easements, and approximately 23 private properties requiring new easements. Federal funding will be utilized for the proposed Runway 4/22 easement acquisition and obstruction removals.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.897665950000004,-82.54281475133206,14z

Counties: St. Clair County, Michigan

ENDANGERED SPECIES ACT SPECIES

There is a total of 10 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. Note that 2 of these species should be considered only under certain conditions.

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

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

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

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis*	Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5949
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/XLAIG2ZZPJGMFJH5LAIFR5U67E/documents/generated/6982.pdf

Northern Long-eared Bat *Myotis septentrionalis*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9045

BIRDS

NAME	STATUS
Rufa Red Knot *Calidris canutus rufa*	Threatened

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
This species only needs to be considered under the following conditions:
- Only actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30.

Species profile: https://ecos.fws.gov/ecp/species/1864

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*	Threatened

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- For all Projects: Project is within EMR Range

Species profile: https://ecos.fws.gov/ecp/species/2202
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/XLAIG2ZZPJGMFJH5LAIFR5U67E/documents/generated/5280.pdf

CLAMS

NAME	STATUS
Rayed Bean *Villosa fabalis*	Endangered

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5862

Round Hickorynut *Obovaria subrotunda*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/9879

NAME	STATUS
Salamander Mussel *Simpsonaias ambigua* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6208	Proposed Endangered
Snuffbox Mussel *Epioblasma triquetra* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4135	Endangered

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

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

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

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

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow

appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

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

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/ activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

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

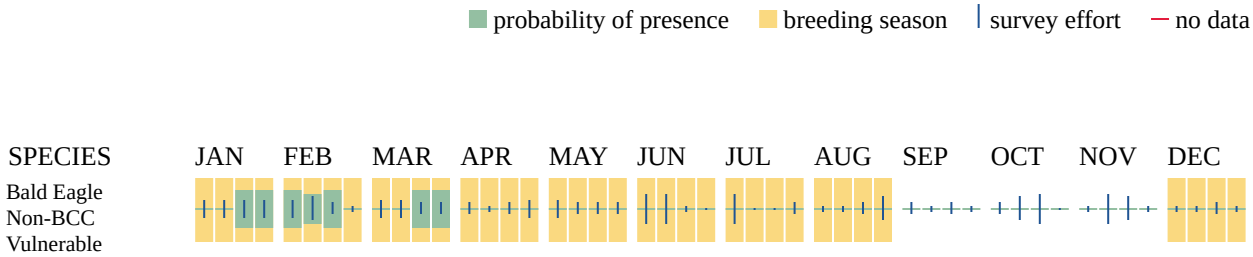
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9454	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9643	Breeds May 20 to Aug 10
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Henslow's Sparrow *Centronyx henslowii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31

NAME	BREEDING SEASON
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Semipalmated Sandpiper *Calidris pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9603	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Upland Sandpiper *Bartramia longicauda* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9294	Breeds May 1 to Aug 31
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

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

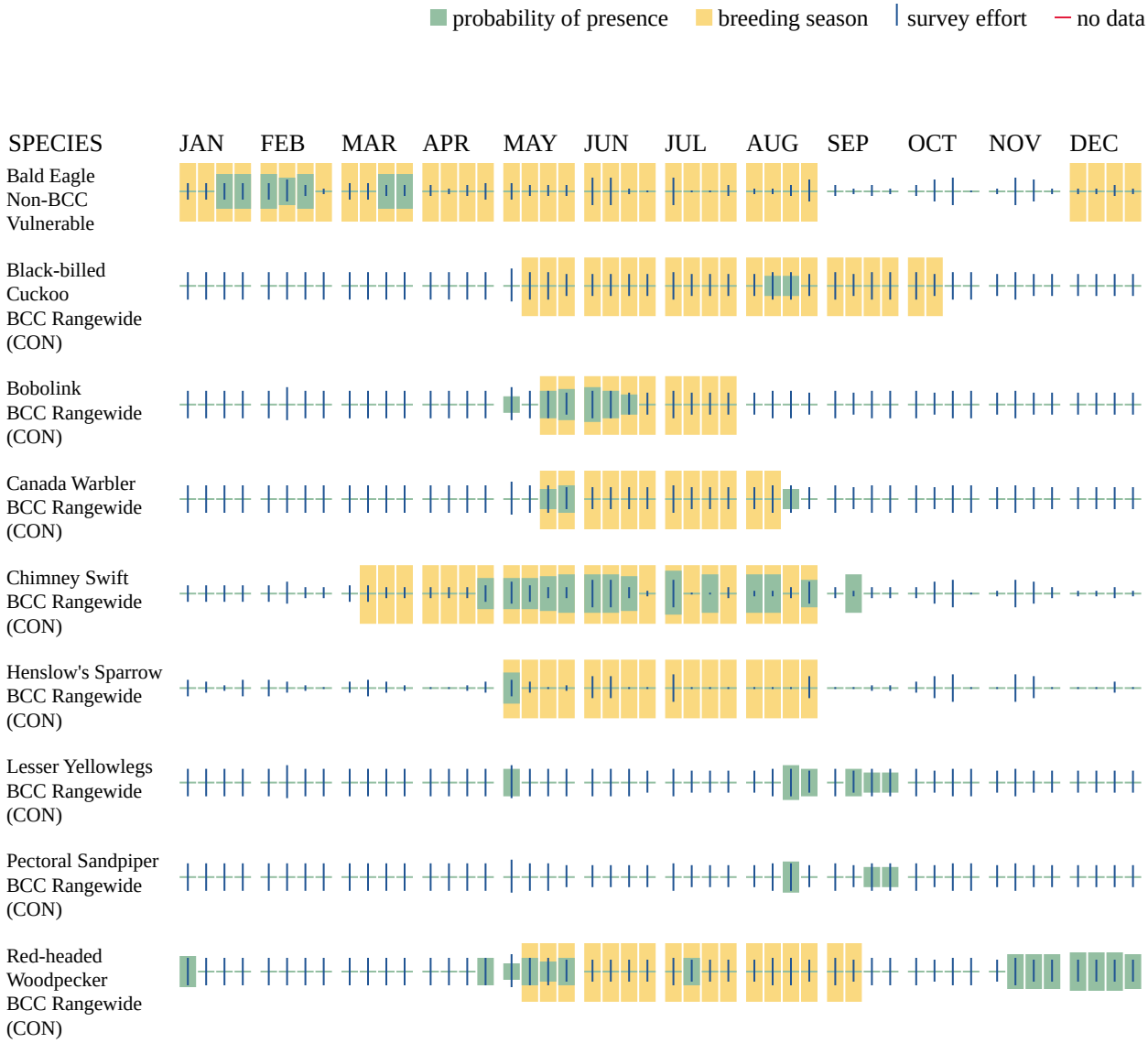
Probability of Presence (■)

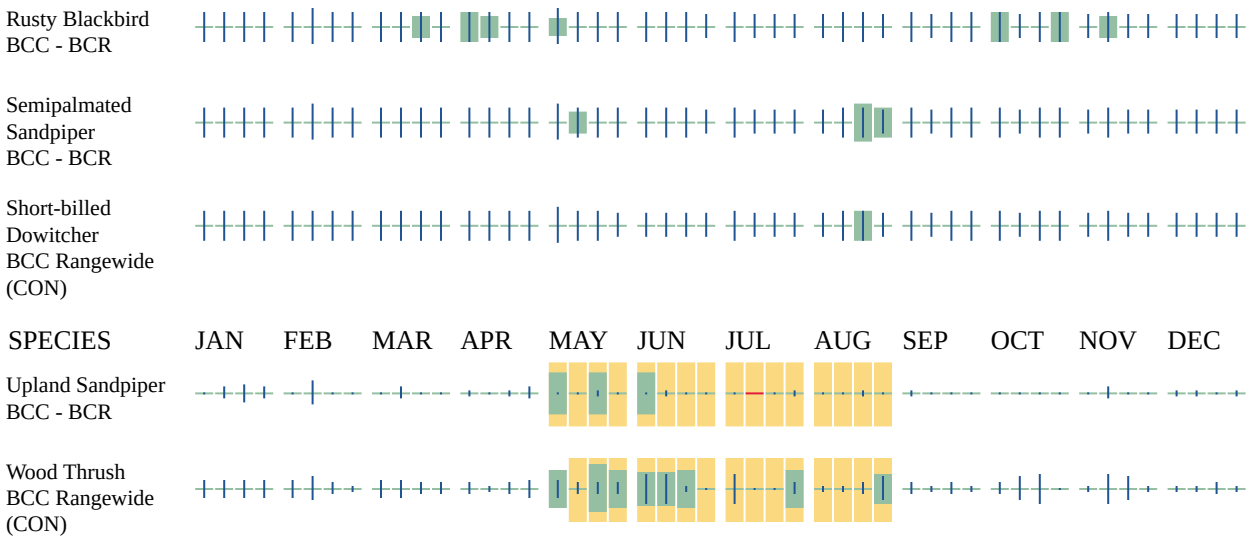
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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





Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

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

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

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

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1A
- PFO1/EM1C
- PSS1/EM5C
- PSS1C
- PFO1C

FRESHWATER EMERGENT WETLAND

- PEM1/5C
- PEM5C
- PEM1C

RIVERINE

- R2UBFx

FRESHWATER POND

- PUBH
- PUBHx

IPAC USER CONTACT INFORMATION

Agency: Mead & Hunt, Inc.
Name: Brauna Hartzell
Address: 2440 Deming Way
City: Middleton
State: WI
Zip: 53562
Email brauna.hartzell@meadhunt.com
Phone: 6082736380

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To: 02/06/2025 16:38:13 UTC
Project code: 2024-0090531
Project Name: Port Huron/St. Clair (PHN) County Airport Environmental Assessment for Approach Clearing

Subject: Verification letter for the project named 'Port Huron/St. Clair (PHN) County Airport Environmental Assessment for Approach Clearing' for specified threatened and endangered species that may occur in your proposed project location consistent with the Michigan Endangered Species Determination Key (Michigan DKey)

Dear Brauna Hartzell:

The U.S. Fish and Wildlife Service (Service) received on **February 06, 2025** your effect determination(s) for the 'Port Huron/St. Clair (PHN) County Airport Environmental Assessment for Approach Clearing' (the Action) using the Michigan DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Michigan DKey, you made the following effect determination(s) for the proposed Action:

Species	**Listing Status**	**Determination**
Eastern Massasauga (=rattlesnake) (*Sistrurus catenatus*)	Threatened	NLAA
Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)	Threatened	No effect
Indiana Bat (*Myotis sodalis*)	Endangered	No effect
Monarch Butterfly (*Danaus plexippus*)	Proposed Threatened	No effect
Northern Long-eared Bat (*Myotis septentrionalis*)	Endangered	No effect
Rayed Bean (*Villosa fabalis*)	Endangered	No effect
Round Hickorynut (*Obovaria subrotunda*)	Threatened	No effect
Rufa Red Knot (*Calidris canutus rufa*)	Threatened	No effect
Salamander Mussel (*Simpsonaias ambigua*)	Proposed Endangered	No effect
Snuffbox Mussel (*Epioblasma triquetra*)	Endangered	No effect

The Service will notify you within 30 calendar days if we determine that this proposed Action does not meet the criteria for a “may affect, not likely to adversely affect” (NLAA) determination for Federally listed species in Michigan. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the Michigan Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, the Michigan Ecological Services Field Office may request additional information to verify the effects determination reached through the Michigan DKey.

Your agency has met consultation requirements by informing the Service of your “No Effect” determination(s). No consultation is required for species that you determined will not be affected by the Action.

Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions and the Service’s 30-day review period. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

The Service recommends that you contact the Service or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

For non-Federal representatives: Please note that when a project requires consultation under section 7 of the Act, the Service must consult directly with the Federal action agency unless that agency formally designates a non-Federal representative (50 CFR 402.08). Non-Federal representatives may prepare analyses or conduct informal consultations; however, the ultimate responsibility for section 7 compliance under the Act remains with the Federal agency. If the Federal agency concurs with your determination, the project as proposed has completed section 7 consultation. All documents and supporting correspondence should be provided to the Federal agency for their records.

Freshwater Mussels:
Based on your answers to the Michigan DKey, the Action will have ”No Effect” on Federally listed mussels. **However, state-listed mussels may occur in your Action area. Contact the Michigan Department of Natural Resources to determine effects to state-listed mussels.**

Freshwater mussels are one of the most critically imperiled groups of organisms in the world. In North America, 65% of the remaining 300 species are vulnerable to extinction (Haag and Williams 2014). Implementing measures to conserve and restore freshwater mussel populations

directly improves water quality in lakes, rivers, and streams throughout Michigan. An adult freshwater mussel filters anywhere from 1 to 38 gallons of water per day (Baker and Levinton 2003, Barnhart pers. comm. 2019). A 2015 survey found that in some areas mussels can reduce the bacterial populations by more than 85% (Othman et al. 2015 in Vaughn 2017). Mussels are also considered to be ecosystem engineers, stabilizing substrate and providing habitat for other aquatic organisms (Vaughn 2017). In addition to ecosystem services, mussels play an important role in the food web, contributing critical nutrients to both terrestrial and aquatic habitats, including those that support sport fish (Vaughn 2017). Taking proactive measures to conserve and restore freshwater mussels will improve water quality, which has the potential to positively impact human health and recreation in the State of Michigan.

Bald and Golden Eagles:
Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the "taking" of bald and golden eagles and defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Eagle Act's implementing regulations define disturb as "…to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

If the Action may impact bald or golden eagles, additional coordination with the Service under the Eagle Act may be required. For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit https://www.fws.gov/library/collections/all-about-eagles. In addition, the Service developed the National Bald Eagle Management Guidelines (May 2007) in order to assist landowners in avoiding the disturbance of bald eagles. The full Guidelines are available at https://www.fws.gov/media/national-bald-eagle-management-guidelines-0.

If you have further questions regarding potential impacts to eagles, please contact Chris Mensing, Chris_Mensing@fws.gov or 517-351-2555.

Monarch butterfly and other pollinators
In December 2020, after an extensive status assessment of the monarch butterfly, we determined that listing the monarch under the Endangered Species Act is warranted but precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. Therefore, the Service added the monarch butterfly to the candidate list. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary.

For all projects, we recommend the following best management practices (BMPs) to benefit monarch and other pollinators.

Monarch and Pollinator BMP Recommendations

Consider monarch and other pollinators in your project planning when possible. Many pollinators are declining, including species that pollinate key agricultural crops and help maintain natural plant communities. Planting a diverse group of native plant species will help support the nutritional needs of Michigan's pollinators. We recommend a mix of flowering trees, shrubs, and herbaceous plants so that something is always blooming and pollen is available during the active periods of the pollinators, roughly early spring through fall (mid-March to mid-October). To benefit a wide variety of pollinators, choose a wide range of flowers with diverse colors, heights, structure, and flower shape. It is important to provide host plants for any known butterfly species at your site, including native milkweed for Monarch butterfly. Incorporating a water source (e.g., ephemeral pool or low area) and basking areas (rocks or bare ground) will provide additional resources for pollinators.

Many pollinators need a safe place to build their nests and overwinter. During spring and summer, leave some areas unmowed or minimize the impacts from mowing (e.g., decrease frequency, increase vegetation height). In fall, leave areas unraked and leave plant stems standing. Leave patches of bare soil for ground nesting pollinators.

Avoid or limit pesticide use. Pesticides can kill more than the target pest. Some pesticide residues can kill pollinators for several days after the pesticide is applied. Pesticides can also kill natural predators, which can lead to even worse pest problems.

Planting native wildflowers can also reduce the need to mow and water, improve bank stabilization by reducing erosion, and improve groundwater recharge and water quality.

Resources:

https://www.fws.gov/initiative/monarchs
https://www.fws.gov/library/collections/pollinators

Wetland impacts:
Section 404 of the Clean Water Act of 1977 (CWA) regulates the discharge of dredged or fill material into waters (including wetlands) of the United States. Regulations require that activities permitted under the CWA (including wetland permits issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE)) not jeopardize the continued existence of species listed as endangered or threatened. Permits issued by the U.S. Army Corps of Engineers must also consider effects to listed species pursuant to section 7 of the Endangered Species Act. The Service provides comments to the agencies that may include permit conditions to help avoid or minimize impacts to wildlife resources including listed species. For this project, we consider the conservation measures you agreed to in the determination key and/or as part of your proposed action to be non-discretionary. If you apply for a wetland permit, these conservation measures should be explicitly incorporated as permit conditions. Include a copy of this letter in your wetland permit application to streamline the threatened and endangered species review process.

Mussel References
Baker, S.M. and J. Levinton. 2003. Selective feeding by three native North American freshwater mussels implies food competition with zebra mussels. Hydrobiologia 505(1):97-105.
Haag, W. R. and J.D. Williams, 2014. Biodiversity on the brink: an assessment of conservation strategies for North American freshwater mussels. Hydrobiologia 735:45-60.

Morowski, D., L. James and D. Hunter. 2009. Freshwater mussels in the Clinton River, southeastern Michigan: an assessment of community status. Michigan Academician XXXIX: 131-148.
Othman, F., M.S. Islam, E.N. Sharifah, F. Shahrom-Harrison and A. Hassan. 2015. Biological control of streptococcal infection in Nile tilapia Oreochromis niloticus (Linnaeus, 1758) using filter-feeding bivalve mussel Pilsbryoconcha exilis (Lea, 1838). Journal of Applied Ichthyology 31: 724-728.
Vaughn, C.C. 2017. Ecosystem services provided by freshwater mussels. Hydrobiologia DOI: 10.1007/s10750-017-3139-x.

1.The Group 3 is a specific list of stream segments within known counties that contain habitat likely to be occupied by listed mussels (see Michigan Freshwater Mussel Survey Protocol and Relocation Procedures for additional information).

Summary of conservation measures for your project You agreed to the following conservation measures to avoid adverse effects to listed species and our concurrence is only valid if the measures are fully implemented. These must be included as permit conditions if a permit is required and/or included in any contract language.

Eastern massasauga: Materials used for erosion control and site restoration must be wildlife-friendly. Do not use erosion control products containing plastic mesh netting or other similar material that could entangle eastern massasauga rattlesnake (EMR). Several products for soil erosion and control exist that do not contain plastic netting including net-less erosion control blankets (for example, made of excelsior), loose mulch, hydraulic mulch, soil binders, unreinforced silt fences, and straw bales. Others are made from natural fibers (such as jute) and loosely woven together in a manner that allows wildlife to wiggle free.

Eastern massasauga: To increase human safety and awareness of EMR, those implementing the project must first review the EMR factsheet (available at https://www.fws.gov/media/eastern-massasauga-rattlesnake-fact-sheet), and watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://www.youtube.com/watch?v=-PFnXe_e02w).

Eastern massasauga: During project implementation, report sightings of any federally listed species, including EMR, to the Service within 24 hours.

Eastern massasauga: The project will not result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of EMR upland habitat (uplands associated with high quality wetland habitat) to other land uses.

Eastern massasauga: The project will occur entirely within the EMR inactive season (in the southern Lower Peninsula: October 16 through April 14; in the northern Lower Peninsula, October 2 through April 30).

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

1. Name

Port Huron/St. Clair (PHN) County Airport Environmental Assessment for Approach Clearing

2. Description

The following description was provided for the project 'Port Huron/St. Clair (PHN) County Airport Environmental Assessment for Approach Clearing':

> Obstruction clearing is proposed on both Airport owned property as well as private property in the approaches of Runway 4/22. Potential obstructions are found on Airport owned property, private property with existing easements, and approximately 23 private properties requiring new easements. Federal funding will be utilized for the proposed Runway 4/22 easement acquisition and obstruction removals.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.897665950000004,-82.54281475133206,14z

QUALIFICATION INTERVIEW

1. Are there any possible effects to any listed species or to designated critical habitat from your project or effects from any other actions or projects subsequently made possible by your project?

   Select "Yes" even if the expected effects to the species or critical habitat are expected to be 1) extremely unlikely (discountable), 2) can't meaningfully be measured, detected, or evaluated (insignificant), or 3) wholly beneficial.

   Select "No" to confirm that the project details and supporting information allow you to conclude that listed species and their habitats will not be exposed to any effects (including discountable, insignificant, or beneficial effects) and therefore, you have made a "no effect" determination for all species. If you are unsure, select YES to answer additional questions about your project.

   Yes

2. This determination key is intended to assist the user in the evaluating the effects of their actions on Federally listed species in Michigan. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, purposeful take for scientific purposes or to enhance the survival of a species, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Click yes to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

   Yes

3. Is the action the approval of a long-term (i.e., in effect greater than 10 years) permit, plan, or other action? (e.g., a new or re-issued hydropower license, a large-scale land management plan, or other kinds of documents that provide direction for projects or actions that may be conducted over a long term (>10 years) without the need for additional section 7 consultation).

   No

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

   Yes

5. Does the action involve the installation or operation of wind turbines?

   No

6. Are there at least 30 days prior to your action occurring? Endangered species consultation must be completed before taking any action that may have effects to listed species. The Service also needs 30 days to review projects before we can verify conclusions in some dkey output letters. For example, if you have already started some components of the project on the ground (e.g., removed vegetation) before completing this key, answer “no” to this question. The only exception is if you have a Michigan Field Office pre-approved emergence survey (i.e., if you have conducted pre-approved emergence surveys for listed bats before tree removal, you can still answer yes to this question).

   Yes

7. Does the action involve constructing a new communications tower or modifying an existing communications tower?

   No

8. Does the activity involve aerial or other large-scale application of any chemical (including insecticide, herbicide, etc.)?

   No

9. Does your project include water withdrawal (ground or surface water) greater than 10,000 gallons/day?

   No

10. Will your action permanently affect hydrology?

    No

11. Will your action temporarily affect hydrology?

    No

12. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new storm-water outfall discharge, dams, other in-stream work, changes to water quality or hydrology, etc.)?

    No

13. Does your project have the potential to indirectly impact the stream/river or the riparian zone (e.g., cut and fill, horizontal directional drilling, hydrostatic testing, construction, vegetation removal, discharge, changes to water quality or hydrology, etc.)?

    No

14. Will your action disturb the ground or existing vegetation? This includes any off road vehicle access, soil compaction, digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application, vegetation management (including removal or maintenance using equipment or chemicals), cultivation, development, etc.

    Yes

15. Is the action a utility-scale solar development project?

    Note: Solar projects are considered utility scale if they will be 1 megawatt or larger.

    No

16. [Hidden semantic] Does the action intersect the MOBU AOI?

    Automatically answered
    Yes

17. Under the ESA, monarchs remain warranted but precluded by listing actions of higher priority. The monarch is a candidate for listing at this time. The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary. If your project will have no effect on monarch butterflies (for example, if your project won't affect their habitat or individuals), then you can make a "no effect" determination for this project. Are you making a "no effect" determination for monarch?

    Yes

18. [Hidden Semantic] Does the action intersect the Eastern massasauga rattlesnake area of influence?

    Automatically answered
    Yes

19. Does your action involve prescribed fire?

    No

20. Will this action occur entirely in the Eastern massasauga rattlesnake inactive season (October 16 through April 14)?

    Yes

21. Will the action result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of uplands of potential Eastern massasauga rattlesnake habitat (uplands associated with high quality wetland habitat) to other land uses?

    No

22. Will you use wildlife safe materials for erosion control and site restoration and eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare Eastern massasauga rattlesnake?

    Yes

23. Will you watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake (EMR)" video, review the EMR factsheet or call 517-351-2555 to increase human safety and awareness of EMR?

    Yes

24. Will all action personnel report any Eastern massasauga rattlesnake observations, or observation of any other listed threatened or endangered species, during action implementation to the Service within 24 hours?

    Yes

25. [Semantic] Does the action area intersect the rayed bean area of influence?

    Automatically answered
    Yes

26. [Semantic] Does the action area intersect the snuffbox area of influence?

    Automatically answered
    Yes

27. [Semantic] Does the action area intersect the Round Hickorynut AOI?

    Automatically answered
    Yes

28. [Semantic] Does the action area intersect the Salamander mussel AOI?

    Automatically answered
    Yes

29. [Hidden Semantic] Does the action area intersect the rufa red knot area of influence?

    Automatically answered
    Yes

30. [Hidden Semantic] Does the action area intersect the area of influence for Eastern prairie fringed orchid?

    Automatically answered
    Yes

31. The project has the potential to affect federally listed bats. Does the action area contain any known or potential bat hibernacula (natural caves, abandoned mines, or underground quarries)?

    No

32. Has a presence/absence bat survey or field-based habitat assessment following the Service's Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines been conducted within the action area?

    Yes

33. Did you coordinate with the Michigan Field Office in advance of your survey effort and receive authorization for the study proposal and approval of the results?

    If NO, please contact the Michigan Field Office (MIFO_Dkey@fws.gov) before completing this DKey.

    Yes

    SUBMITTED DOCUMENTS

    - *Re_ EXTERNAL Acoustic Survey study plan IPaC Code_ 2024-0090531.pdf https://ipac.ecosphere.fws.gov/project/XLAIG2ZZPJGMFJH5LAIFR5U67E/projectDocuments/156819534*
    - *R LR 344-056 2024 09-04 MH - Kimball MI - Acoustic Bat Survey Results.pdf https://ipac.ecosphere.fws.gov/project/XLAIG2ZZPJGMFJH5LAIFR5U67E/projectDocuments/156819506*

34. Did survey results demonstrate the probable absence of Indiana bats and northern long-eared bats?

    Yes

35. [Hidden Semantic] Does the action area intersect the Indiana bat AOI?

    Automatically answered
    Yes

36. [Hidden Semantic] Does this project intersect the northern long-eared bat area of influence?

    Automatically answered
    Yes

IPAC USER CONTACT INFORMATION

Agency: Mead & Hunt, Inc.
Name: Brauna Hartzell
Address: 2440 Deming Way
City: Middleton
State: WI
Zip: 53562
Email brauna.hartzell@meadhunt.com
Phone: 6082736380

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

From:	Wong, Jennifer (Jenny)
To:	Slack, Ryan; Goodfellow, Scott
Cc:	Brauna Hartzell; East Lansing, FW3; MIFO TE, FW3; dnr-statetepermit@michigan.gov; William Ballard; DePue, John (DNR)
Subject:	Re: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)
Date:	Monday, September 16, 2024 8:33:53 AM
Attachments:	image001.png image002.png R LR 344-056 2024 09-04 M&H - Kimball, MI - Acoustic Bat Survey Results.pdf

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Ryan,

The USFWS has reviewed your September 4, 2024 bat acoustic survey report for the proposed St. Clair County International Airport in Kimball, St. Clair County, Michigan (CEC Project 344-056, IPaC code 024-0090531).

Acoustic monitoring occurred during the nights of July 25-31, 2024, using four (4) acoustic detectors, totaling 28 detector-nights. A total of 2,278 bat calls from nine (9) species were auto-identified by USFWS-approved auto-identification software. Four (4) calls initially auto-classified as Indiana bat and two (2) calls auto-classified as northern long-eared bat were ruled out through subsequent qualitative analysis. Qualitative analysis did verify two (2) tricolored bat calls and three (3) little brown bat calls, suggesting these species are present within the project area.

We have found your survey methodology and level of effort to be appropriate and consistent with USFWS Guidelines. Because the results indicate the probable absence of Indiana and northern long-eared bat within the project area, tree clearing and other activities associated with the project are unlikely to affect these species regardless of when the activities occur.

The tricolored bat is not a federally listed species but is currently proposed for listing as endangered under the federal Endangered Species Act and is also state-listed as threatened in Michigan. Little brown bats are also listed as state threatened. Therefore, we recommend the project coordinate with the Michigan DNR on obtaining a state threatened and endangered species permit.

The project requires clearing up to 190 acres of forest habitat. NLCD (2019) forest cover within 5x5-km grid cells overlapping the project area is greater than 50%, and greater than 60% in cells overlapping the detector locations where tricolored bat calls were confirmed. Tricolored bats roost (typically among live or dead foliage) in a wide variety of trees, and suitable roosts are abundant in Michigan. Therefore, we do not expect this project to adversely affect tricolored bats if the trees can be cut outside the species' summer roosting period (May 15 through July 31), as is planned."

In accordance with the Guidelines, the results of the survey will remain valid for a minimum of five (5) complete summer maternity seasons.

Thank you for your coordination, and please reach out if you have any questions or concerns.

Jenny Wong
(she/her)
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
*****NEW OFFICE NUMBER*** 517-580-5440**
Jennifer_Wong@fws.gov
<<^.*.^>>

From: Slack, Ryan <rslack@cecinc.com>
Sent: Thursday, September 5, 2024 6:46 AM
To: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>; Goodfellow, Scott <sgoodfellow@cecinc.com>
Cc: brauna.hartzell@meadhunt.com <brauna.hartzell@meadhunt.com>; East Lansing, FW3 <EastLansing@fws.gov>; MIFO TE, FW3 <MIFO_TE@fws.gov>; dnr-statetepermit@michigan.gov <DNR-StateTEPermit@michigan.gov>; William Ballard <william.ballard@meadhunt.com>
Subject: RE: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Hi Jenny,

This is the report of results for this acoustic survey. We are seeking your review, concurrence, and comments.

Thanks,
Ryan

Ryan A. Slack | *Principal*
Civil & Environmental Consultants, Inc.
530 E. Ohio Street, Suite G, Indianapolis, IN 46204
direct 317.613.4505 **office** 317.655.7777 **mobile** 513.237.5051
www.cecinc.com

From: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Sent: Wednesday, July 24, 2024 5:16 PM
To: Goodfellow, Scott <sgoodfellow@cecinc.com>
Cc: brauna.hartzell@meadhunt.com; Slack, Ryan <rslack@cecinc.com>; East Lansing, FW3 <EastLansing@fws.gov>; MIFO TE, FW3 <MIFO_TE@fws.gov>; dnr-statetepermit@michigan.gov
Subject: Re: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Thanks, Scott- signed version attached. As I let Ryan know per an earlier survey request, MYLE are not known to occur in Michigan, but there's evidence to suggest that LASE may be colonizing/migrating through the state. Therefore, we would recommend omitting

MYLE and including LASE in the automated analysis.
Let me know if we can provide any further assistance,

Jenny Wong
(she/her)
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
*****NEW OFFICE NUMBER*** 517-580-5440**
Jennifer_Wong@fws.gov
<<^.*.^>>

From: Goodfellow, Scott <sgoodfellow@cecinc.com>
Sent: Wednesday, July 24, 2024 8:06 AM
To: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Cc: brauna.hartzell@meadhunt.com <brauna.hartzell@meadhunt.com>; Slack, Ryan <rslack@cecinc.com>
Subject: RE: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Hi Jenny,

Please see the attached.

Thanks,

Scott T. Goodfellow, PWS | *Project Manager*
Civil & Environmental Consultants, Inc.
530 E. Ohio Street, Suite G, Indianapolis, IN 46204
direct 317.613.4504 **office** 317.655.7777 **mobile** 317.503.0458
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From: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Sent: Tuesday, July 23, 2024 4:59:14 PM
To: Slack, Ryan <rslack@cecinc.com>
Cc: brauna.hartzell@meadhunt.com <brauna.hartzell@meadhunt.com>; MIFO TE, FW3 <MIFO_TE@fws.gov>
Subject: Re: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Hi Ryan, did you attach an earlier version by mistake? I'm still not seeing the fed agency or acres of suitable habitat to be cleared.

Jenny Wong
(she/her)
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
*****NEW OFFICE NUMBER*** 517-580-5440**
Jennifer_Wong@fws.gov
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From: Slack, Ryan <rslack@cecinc.com>
Sent: Wednesday, July 17, 2024 12:23 PM
To: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Cc: brauna.hartzell@meadhunt.com <brauna.hartzell@meadhunt.com>
Subject: RE: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Jenny,

The attached should answer both your needs.

Thanks,
Ryan

Ryan A. Slack | *Principal*
Civil & Environmental Consultants, Inc.
530 E. Ohio Street, Suite G, Indianapolis, IN 46204
direct 317.613.4505 **office** 317.655.7777 **mobile** 513.237.5051
www.cecinc.com

From: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Sent: Monday, July 15, 2024 3:01 PM
To: Slack, Ryan <rslack@cecinc.com>
Cc: brauna.hartzell@meadhunt.com
Subject: Re: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Hi Ryan,
You indicated that this project has a federal nexus. Can you please indicate the federal action agency and specify the number of acres of overall suitable (or assumed suitable)

bat habitat and acres that may be impacted on pg. 2? Thanks!

Jenny Wong
(she/her)
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
*****NEW OFFICE NUMBER*** 517-580-5440**
Jennifer_Wong@fws.gov
<<^.*.^>>

From: Slack, Ryan <rslack@cecinc.com>
Sent: Wednesday, July 10, 2024 2:06 PM
To: Wong, Jennifer (Jenny) <jennifer_wong@fws.gov>
Cc: brauna.hartzell@meadhunt.com <brauna.hartzell@meadhunt.com>
Subject: [EXTERNAL] Acoustic Survey study plan (IPaC Code: 2024-0090531)

Hi Jenny,

Attached is a study plan with shapefiles to conduct an acoustic presence/probable absence survey in St. Claire County for your review and concurrence. The client is interested in having us start the survey as early as July 22.

Thank you for your time. Please let me know if you have any questions.

Ryan

Ryan A. Slack / Principal
Civil & Environmental Consultants, Inc.
530 E. Ohio Street, Suite G · Indianapolis, IN 46204
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STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

August 10, 2022

VIA EMAIL

Catie Fiore
St. Clair County
177 Ash Drive
Kimball, Michigan 48074

Dear Catie. Fiore:

SUBJECT: Transportation Preliminary Database Search
Project Name: PHN Runway 4/22 Approach Clearing
Site Name: 74 - PHN Port Huron/St. Clair County International Airport
Submission Number: HPK-SECD-G8KKZ
Location: T06N, R16E, Section 35, St. Clair County

This letter provides the results of the Transportation Preliminary Database Search that was requested on August 8, 2022, for the above subject project. The Transportation Preliminary Map/Database Review includes a database search for the following concerns within 500-feet of the project location (two locations):

- Occurrences of state-listed threatened or endangered (T&E) species within the MNFI database*
- Tier 1 Eastern Massasauga Rattlesnake (EMR) designated habitat
- Michigan Mussel Protocol Group 1/Group 2 (state) and Group 3 (federal) T&E Mussels
- Known contamination locations
- State-regulated 303 wetlands
- Section 10 regulated waterways

Location 1: Area NE of Runway 4/22

Mapped 303 regulated wetlands are listed in the database as having been observed within 500 feet of your project area at the following location:

- Far west side of the project buffer zone approximately 1,900 LF NW of the Smiths Creek Road and Allen Road intersection.

The database search did not indicate any occurrences for state-listed T&E species, EMR habitat, mussels, contaminated sites, and Section 10 waterways.

Location 2: Area SW of Runway 4/22

Mapped 303 regulated wetlands are listed in the database as having been observed within 500 feet of your project area at the following locations:

- Extensive wetlands straight out from Runway 4/22 beginning approximately 500 LF from the end of the runway to approximately 3,800 LF from the end of the runway.
- Extensive wetlands west side of project area from Yager Road extending south approximately 4,000 LF.

The database search did not indicate any occurrences for state-listed T&E species, EMR habitat, mussels, contaminated sites, and Section 10 waterways.

Both Locations:

The database did not indicate the presence of the Northern long-eared bat or the Indiana bat which are federally listed as an endangered species. Indiana bats, however, are considered potentially present wherever suitable habitat exists within their range. Your project location is within the range of the Indiana bat in Michigan. You should consult with the United States Fish and Wildlife Service (USFWS) prior to performing work or applying for permits.

> * *Occurrence data for state-listed T&E species were provided to the Water Resources Division (WRD) by the Michigan Natural Features Inventory (MNFI). These data are not based on a comprehensive inventory of the state. The lack of data for any geographical area shall not be construed to mean that no significant features are present. In addition, although the MNFI maintains high standards of quality control, there is no warranty as to the fitness of the data for any purpose, nor that the data are necessarily accurate or complete.*
>
> *The only way to obtain a definitive statement on the status of threatened and endangered species is to have a qualified biologist perform a complete field survey of the proposed project area. Under Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, "a person shall not take, possess, transport,. . . fish, plants, and wildlife indigenous to the state and determined to be endangered or threatened," unless first receiving an endangered species permit from the Michigan Department of Natural Resources (MDNR). The presence of threatened or endangered species* does not preclude activities or development but may require alterations to the project. To obtain or submit an endangered species permit, please contact Casey Reitz, MDNR, at 517-284-6210 or ReitzC@Michigan.gov or Amy Bleisch at 517-449-4630 or BleischA@Michigan.gov.

This review does not include a comprehensive search for federally listed species. The project location must be screened using the self-service USFWS IPaC website. If your project will potentially impact a federally listed T&E species, you should contact USFWS Ecological Services Field Office at 517-351-2555 or eastlansing@fws.gov to begin the consultation process. If your project requires a permit from the WRD, the application submission should include documentation from USFWS of concurrence/approval.

This letter does not include a review of potential lake, stream, wetland, or floodplain impacts caused by your project that may require a permit from our office. A copy of this letter should be provided as an attachment to any future Joint Permit Application submitted for this location. If you have any questions, please feel free to contact me at PrysbyM1@Michigan.gov; 517-899-7316, or Environmental, Great Lakes, and Energy (EGLE), WRD, P.O. Box 30458, Lansing, Michigan 48909.

Sincerely,

Michael Prysby, P.E.
EGLE – WRD
Transportation Review Unit

cc: USFWS
Casey Reitz, MDNR
Amy Bleisch, MDNR

Appendix J. Staff Qualifications

BRAUNA HARTZELL, GISP, PWS
GEOGRAPHIC INFORMATION SYSTEM (GIS) ANALYST/ WETLANDS SCIENTIST

EXPERIENCE (GIS)

Brauna Hartzell has more than 20 years of experience applying GIS software and database design techniques to support wetlands and water resources, historic preservation, community planning, transportation, aviation and military planning, and municipal infrastructure and storm water management. She has worked extensively with GIS and mapping software including ArcGIS desktop and ARC/INFO workstation and has specialized experience with 3D Analyst, Network Analyst and Spatial Analyst. She also collects environmental field data using hand-held GPS units and post-processes information for inclusion in databases and use in spatial analyses. Brauna collaborates with personnel from multiple disciplines to solve complex spatial problems through scripting and spatial analysis to deliver results and data for project-specific needs. She utilizes geoprocessing models, Python, and VBA to meet analytical needs of projects.

Brauna is experienced with GIS-related data submittal requirements associated with the Federal Energy Regulatory Commission (FERC) and the Federal Aviation Administration (FAA) data standardization initiatives. She has extensive experience developing Geodatabases with the Spatial Data Standards for Facility, Infrastructure, and Environment (SDSFIE) standard and creating Federal Geographic Data Committee (FGDC)-compliant metadata.

Brauna has specialized experience with using 3D data formats for spatial analysis, contour generation and manipulation, and geospatial modeling. She is adept in the use of LiDAR-derived data and DTMs in support of hydrology and hydraulic analyses. Additionally, she has extensive experience with SSURGO databases and the National Hydrography Dataset.

EXPERIENCE (WETLAND/ENVIRONMENTAL)

Brauna Hartzell has more than twenty years of experience in wetland delineation, wetland permitting, and restoration projects. She performs wetland and field delineations conforming to current United States Army Corps of Engineers (USACE) guidance including the Midwest and Northcentral and Northeast Regional Supplements and State standards, designs custom field data collection applications, collects field data using hand-held Global Positioning Systems (GPS) data collectors and tablets, and prepares National Environmental Policy Act (NEPA) documentation. Brauna has successfully guided numerous projects through the Section 404 permitting process.

Brauna has performed numerous wetland delineations in Wisconsin, Minnesota, and Michigan since 2002. Work included conducting the delineation, documenting field investigations and site conditions, creating wetland boundary maps, and report writing. She conducts wetland mitigation site monitoring according to established site-specific assessment protocols, performs vegetation surveys, and analyzes and presents field collected data in graphical and tabular form. She also assists in mitigation site design and construction specifications development.

Areas of Expertise

- Geographic Information Systems (GIS)
- Remote-sensing image processing
- Digital mapping
- Database design
- Wetland delineation and permitting

Education

- MS, Environmental Monitoring, 1994, University of Wisconsin, Madison
- BS, Biological Science, 1982, Florida State University, Tallahassee, Florida

Certificates

- Ecological Restoration Certificate (5-3.0 CEU classes), Restoring Minnesota Ecological Restoration Training Cooperative program, 2020

Registration/Certification

- Certified GIS Professional (GISP), GIS Certification Institute
- Professional Wetland Scientist (PWS), Society of Wetland Scientists Professional Certification Program (SWSPCP)

Training and Seminars

- Critical Methods in Delineation, University of Wisconsin-LaCrosse, 2007, 2008, 2009, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
- Conservation Biology, University of Wisconsin-Madison, Spring 2021
- Grasses, Sedges, and Rushes Workshop, University of Wisconsin–LaCrosse, 2017
- Wildlife Inventory and Monitoring Workshop, University of Wisconsin – Milwaukee, 2015
- Advanced Wetland Delineation Workshop, University of Wisconsin – LaCrosse, 2007
- Basic Hydric Soil Identification Workshop, University of Wisconsin – LaCrosse, 2005
- Wetlands Ecology, University of Wisconsin – Madison, Spring 2003
- Vascular Flora of Wisconsin, University of Wisconsin – Madison, Spring 2002

RELATED PROJECTS (WETLANDS)

Wetland Delineation, Oakland Southwest Airport, Oakland County, 2023
Michigan Bureau of Aeronautics
New Hudson, Michigan
Lead Wetland Delineator. Brauna served as lead wetland delineator in support of an environmental assessment of proposed obstructions clearing to facilitate clear approach and departure paths, and to enhance safety at the airport. Brauna completed a wetland delineation and biological resources survey in support of environmental documentation for the proposed project. The area of interest is approximately 45 acres and resulted in the delineation of four wetlands on Airport property. Additional areas outside of Airport property were examined where access permission was received. One additional wetland and four estimated wetlands were mapped. Wetland types encountered include fresh wet meadow, shrub-scrub, and forested wetland. Brauna also completed NEPA documentation for wetlands.

Wetland Delineation, Airlake Airport Dakota County, 2022
Metropolitan Airports Commission
Lakeville, Minnesota
Lead Wetland Delineator. Brauna served as lead wetland delineator in support of an environmental assessment for proposed airfield improvements at the Airport that include modifying the location of the runway ends to increase the existing declared distances, reconstructing the existing runway, and extending the runway and associated taxiways. The area of interest is approximately 164 acres is size and resulted in the delineation of twelve wetlands. An ordinary high water mark determination was completed for a previously re-aligned segment of tributary on the airfield. Wetland types encountered include emergent seasonally-flooded basins, fresh (wet) meadows, and shallow marsh. An off-site hydrology assessment using historic aerial photographs supported field assessment of farm fields within the study area. Brauna also completed NEPA documentation for wetlands.

Wetland Delineation, Chippewa Valley Regional Airport, 2022
Wisconsin Bureau of Aeronautics
Eau Claire, Wisconsin
Lead Wetland Delineator. Brauna served as lead wetland delineator in support of environmental documentation for a proposed wildlife perimeter fence replacement/extension and selective clearing project on Airport owned lands in the city of Eau Claire. The existing perimeter fence will be replaced with USDA-APHIS-WS/FAA recommended 10-foot chain link wildlife exclusion fencing. The Airport will also clear several areas of brush and stumps to establish turf vegetation to more easily maintain the area and to enhance wildlife control. The proposed fence corridor was surveyed for wetlands and streams and areas proposed for clearing were examined. Twelve wetlands were identified within the project AOI. Wetland types encountered include forested, fresh wet meadow and shrub-scrub wetlands.

Conservation Easement Baseline Biological Survey, 2021
Houghton County Airport
Calumet, Michigan
Lead Environmental Scientist. To mitigate for wetland impacts relating to a clearing project at the Airport, the Houghton County Memorial Airport will create a conservation easement for a 40-acre parcel owned by Houghton County**.** Brauna was lead environmental scientist responsible for overseeing and assisting with field work by a botanist and report and map creation. A Floristic Quality Assessment was performed by conducting a meander survey and collecting species cover data at eight permanent quadrat locations. The baseline report detailed field work to assess and document the 40-acre parcel as a high-quality Wooded Dune and Swale complex for creation of a conservation easement. Brauna coordinated with

- Grasses: Identification and Ecology Workshop, University of Wisconsin – Milwaukee workshop, 2002
- Basic Wetland Delineation Workshop, University of Wisconsin–LaCrosse, 2002

Training and Seminars

- GPS Field Collection Techniques Training Workshop for Trimble GeoXH, Seiler Instruments

Past Employment

- Information Management Systems, Inc.
- Adult Communities Total Services, Inc.
- Archeological Assessments, Inc.
- University of Wisconsin – Madison

No. of Years With Mead & Hunt

- Hired 08/28/1992

No. of Years With Other Firms

- Four

the Michigan Office of Environment, Great Lakes, and Energy (EGLE) to complete all necessary field requirements for the preservation of this rare plant community type.

Wetland Delineation, STH 162 Vernon and La Crosse Counties, 2021
Wisconsin Department of Transportation
Madison, Wisconsin

Lead Wetland Delineator. Brauna was lead wetland delineator in support of culvert, beam guard, and surface upgrades for a 5.6 mile stretch of State Trunk Highway (STH) 162 in Vernon and LaCrosse Counties. The project corridor extended from Coon Valley to STH 33. The area of interest consisted of the full length of the project corridor and selected areas requiring culvert and beam guard upgrades. The delineation resulted in the delineation of four wetlands. Stream assessments and Ordinary High Water Mark (OHWM) determinations were completed at two bridges within the Coon Valley municipal limits. Wetland types encountered include fresh wet meadow and shrub-scrub wetlands delineated in association with stream crossings or adjacent floodplains.

Wetland Delineation, STH 162 Vernon County, 2021
Wisconsin Department of Transportation
Madison, Wisconsin

Lead Wetland Delineator. Brauna was lead wetland delineator in support of culvert, beam guard, and surface upgrades for a 6.9 mile stretch of State Trunk Highway (STH) 162 in Vernon County. The project corridor extended from Stoddard to Chaseburg. The area of interest consisted of the full length of the project corridor and selected areas requiring culvert and beam guard upgrades. The delineation resulted in the delineation of nine wetlands. Stream assessments for five streams were completed. Wetland types encountered include fresh wet meadow wetlands delineated in association with stream crossings or adjacent floodplains.

Wetland Delineation, STH 29 Clark County, 2021
Wisconsin Department of Transportation
Madison, Wisconsin

Lead Wetland Delineator. Brauna was lead wetland delineator in support of proposed culvert and beam guard upgrades for a 15.1 mile stretch of State Trunk Highway (STH) 29 in Clark County. The area of interest consisted of separate investigation areas at selected culvert and beam guard locations and all local road intersections which resulted in the delineation of 104 wetlands. Wetland types encountered include fresh wet meadows, forested wetlands, and riparian wetlands associated with four major stream crossings.

Wetland Delineation, 2020
Rochester International Airport
Rochester, Minnesota

Lead Wetland Delineator. Brauna served as lead wetland delineator in support of an environmental assessment for a proposed extension of Runway 2/20 and associated Taxiway A, along with other connected actions including the realignment of navigational equipment. The area of interest is approximately 712 acres is size and resulted in the delineation of thirty-eight wetlands. Wetland types encountered include emergent seasonally-flooded basins, and forested and fresh (wet) meadows. An off-site hydrology assessment using historic aerial photographs supported field assessment of farm fields within the study area. Agricultural areas were examined resulting in the delineation of two farmed wetlands. Brauna also completed NEPA documentation for wetlands and lead wetland permitting efforts.

Wetland Delineation, W.K. Kellogg Airport, 2020
W.K. Kellogg Airport
Battle Creek, Michigan
Lead Wetland Delineator. Brauna served as lead wetland delineator in support of an environmental documentation for a proposed road realignment to facilitate hangar development and other support services at the airport. The area of interest is approximately 52 acres is size and resulted in the delineation of six wetlands. Wetland types encountered include emergent seasonally-flooded basins and one emergent/forested wetland.

Joint Individual Permit – USACE Approval, 2019
Reconstruction and Extension of Runway 7L/25R and Taxiway A
Kenosha Regional Airport
Kenosha, Wisconsin
The proposed project includes the reconstruction and extension of Runway 7L/25R and Taxiway A at the Airport. Other actions proposed include improving the approach minimums to Runway 25R, bringing the geometries of these pavements into conformance with current standards, acquiring land and performing obstruction removal to provide clear approach and departure operations, and relocating navigational instruments and edge lighting / signage to correspond with the proposed pavement limits. Approximately 2.5 acres of wetland fill are necessary to achieve project needs. Brauna served as the lead preparer of the individual permit application which included a Practicable Alternatives Analysis.

Wetland Delineation and Biological Resources Survey, 2019
Ann Arbor Municipal Airport
Ann Arbor, Michigan
Brauna served as lead wetland delineator in support of an environmental assessment for a proposed extension of Runway 6/24 and associated Taxiway A, along with other connected actions including the removal of decommissioned navigational equipment. The area of interest is approximately 82 acres is size and resulted in the delineation of three wetlands and one stream. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include emergent seasonally-flooded basins and one stream approximately 300 ft long within the project area of interest.

Wetland Delineation and Biological Resources Survey, 2019
Kalamazoo-Battle Creek International Airport
Kalamazoo, Michigan
Brauna served as lead wetland delineator in support of an environmental assessment for a proposed extension of Runway 17/35 and improvement of airfield movement by correcting geometry deficiencies associated with the intersection of Taxiway C and Runway 17. The area of interest is approximately 246 acres is size and resulted in the delineation of seven wetlands. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include emergent seasonally-flooded basins and a large complex with multiple community types within the project area of interest.

Wetland Delineation and Biological Resources Survey, 2019
Ontonagon County Airport
Ontonagon, Michigan
Brauna served as lead wetland delineator in support of an environmental assessment for a proposed obstruction clearing for Runway 17/35. The area of interest is approximately 127

acres is size and resulted in the delineation of thirty-one new wetlands and re-examination of seven previously delineated wetlands. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include emergent seasonally-flooded basins, forested and scrub-shrub wetlands within the project area of interest.

Wetland Delineation and Biological Resources Survey, 2019
Houghton County Airport
Calumet, Michigan
Brauna served as lead wetland delineator in support of an environmental assessment for obstruction clearing for the Runway 25 approach and RPZ, removal of an existing farm pond, and reestablishment of a regulated stream. The parcel was recently acquired by the Airport. The area of interest is approximately 23 acres is size and resulted in the delineation of four wetlands, one stream, and one small pond. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include an emergent seasonally-flooded basin, three forested wetlands, and a 1-acre pond with multiple community types within the project area of interest.

Joint Individual Permit – USACE Approval, 2018
Construction of Production and Logistics Facility
Haribo of America
Pleasant Prairie, Wisconsin
The proposed project includes construction of a production and logistics facility with visitor and employee parking, warehousing capability, and other amenities. 0.6 acres of wetland fill will be necessary to achieve project needs. Brauna served as the lead preparer of the individual permit application which included a Practicable Alternatives Analysis.

Wetland Delineation, W.K. Kellogg Airport, 2018
W.K. Kellogg Airport
Battle Creek, Michigan
Brauna served as lead wetland delineator in support of an environmental assessment for proposed grading and site improvements to facilitate hangar development and other support services at the airport. The area of interest is approximately 180 acres is size and resulted in the delineation of six wetlands. Wetland types encountered include emergent seasonally-flooded basins and aquatic bed wetlands.

Wetland Delineation, Crystal Airport, 2018
Metropolitan Airports Commission
Brooklyn Center, Minnesota
Brauna served as lead wetland delineator in support of alternatives analysis for an environmental assessment for proposed airfield improvements. The area of interest is approximately 50 acres is size spread over eight areas and resulted in the delineation of seven wetlands. Wetland delineated consisted of emergent Type 1 seasonally-flooded basins.

KIMBERLY SHANNON
ENVIRONMENTAL SCIENTIST

Kimberly Shannon is an environmental scientist with over 14 years of experience. Over the years she has gained professional experience in coordinating and completing a variety of project types including transportation, oil and gas, commercial development, local government, and nuclear. She has honed her regulatory and technical skills while providing excellent service to diverse clients. Her technical expertise and strongest skills as a consultant include the identification, mapping, and delineation of streams and wetlands; 404 permitting and compensatory mitigation; United States Army Corps of Engineers (USACE) regulatory coordination and assisting various clients through the 404 permitting process. Kimberly also has professional experience in the preparation and coordination of environmental assessment and categorical exclusion documents in support of the National Environmental Policy Act (NEPA) process, habitat evaluation for threatened and endangered species, bird surveys, proposal writing and pricing, technical writing and editing, training junior staff, and working with other project managers, colleagues and clients to achieve project goals and objectives in a timely and cost-effective manner.

Her professional experience prior to consulting includes working for a non-profit conservation organization and running the Oklahoma Natural Areas Registry program. She worked with private landowners throughout Oklahoma to identify and evaluate rare and protected species and their habitat so that voluntary protection agreements could be established.

CURRENT PROJECTS

Biological Assessment and Mitigation Planning for 404 Permit
Private Client
Atoka County, OK
Kimberly and other staff are assisting a client with the 404 permit comments from state and federal agencies by undertaking and coordinating an alternatives analysis, a mitigation plan for multiple miles of stream impacts, an adaptive management plan for the mitigation site, surveys for threatened and endangered species, a biological assessment report and agency coordination.

Delineation of Waters of the U.S. and 404 Permit
City of Atoka
Atoka, OK
Kimberly and staff are delineating streams and wetlands at a 300+ acre commercial site for a pending project. A delineation report will be prepared and used to complete a general 404 permit for the client. Mitigation may also be required.

PAST PROJECTS

Wetland Delineations
Ontonagon County Airport - Schuster Field
Ontonagon County, MI
Kimberly assisted with the assessment of potentially jurisdictional wetlands at Schuster Field during June 2019 and August 2016. Wetlands were assessed for hydrology, hydrophytic vegetation and hydric soils based on USACE guidelines and the

Areas of Expertise

- Stream and wetland delineation
- Permitting and licensing
- NEPA
- Project management
- Regulatory compliance
- Environmental Assessments
- Environmental Reports

LinkedIn url

- https://www.linkedin.com/pub/kimberly-shannon/29/412/a38

Education

- MS, Applied and Natural Science, Oklahoma State University, 1997
- BS, Biology, Oklahoma State University, 1994
- Certificate, GIS, Tulsa Community College, 2010

No. of Years with Mead & Hunt

- Hired 05/04/2015

No. of Years with Other Firms

- 10

Northcentral and Northeast supplement to the 1987 guidelines. Boundaries of wetlands were mapped using sub-meter accurate GPS technology.

Oka' Yanahli Preserve Waters of the U.S. Delineations
Oklahoma Chapter of The Nature Conservancy
Johnston County, OK
Kimberly and other staff completed the identification and delineation of multiple intermittent and ephemeral streams, ponds and wetlands within The Nature Conservancy's eastern portion of the Oka' Yanahli preserve. Within a 575-acre portion of the larger 3,120 acre preserve, over 17,000 linear feet of potentially jurisdictional streams were delineated and mapped using sub-meter accurate Trimble GPS technology. A report with figures and shapefiles were included in the deliverables for this project. The delineation was performed in support of The Nature Conservancy's stream enhancement and restoration efforts as part of ongoing mitigation projects for ODOT and future mitigation projects.

Threatened & Endangered Species Surveys, EC 1923
Oklahoma Department of Transportation
Statewide, Oklahoma
Kimberly and a subconsultant will be completing Bald Eagle surveys for ODOT at 90+ project sites in 29 eastern Oklahoma counties during January 2018. Specific reports will be prepared and provided to ODOT.

Mitigation Coordination for Oklahoma Department of Transportation with Multiple Agencies, EC 1660, 2015-2016
Oklahoma Department of Transportation
Statewide, Oklahoma
Kimberly assisted ODOT with the coordination of various mitigation projects across Oklahoma. As part of this contract she is working directly with the USACE, other consultants, and the Oklahoma Chapter of The Nature Conservancy.

Mitigation Plan, Durant Bypass, May 2010-2015
Oklahoma Department of Transportation
Durant, Oklahoma
Kimberly prepared a compensatory mitigation plan for a 404 permit in support of ODOT's bypass loop around US70 in Durant, Oklahoma. She coordinated with the United States Army Corps of Engineers, ODOT, subcontractors, and the City of Durant during the project.

Delineation, Reporting, and 404 Permitting, November 2011-September 2012
QuikTrip Corporation
Muskogee, OK and Dallas/Fort Worth Metroplex
Kimberly led and completed multiple delineations, protected species habitat evaluations, reporting efforts, and 404 permitting (NWP39) including mitigation bank and agency coordination for the client.

Local Government Contract for Statewide County Road and Bridge Projects
Oklahoma Department of Transportation
Statewide Oklahoma
These similar county-level projects included the delineation of potentially jurisdictional waterbodies, assessment of potential habitat for federally protected species, reporting efforts, the completion of project specific NEPA clearance documents, tribal coordination, and coordination with ODOT contacts and county commissioners.

Chitwood/Sholem Lateral Pipeline Right-of-Way Assessments, Reports and 404 Permitting, April-August 2012
DCP Midstream, LLC
Jefferson County, Oklahoma and Clay and Jack Counties, Texas
Kimberly classified over 189 waterbodies along 31.5 miles of pipeline ROW. She reviewed all ROW feature maps and coordinated field data for the presence of potentially jurisdictional waters and potential threatened and endangered species habitat. Kimberly classified and coordinated mapping efforts with GIS professionals and the client to assist with horizontal directional drilling (HDD) boring locations to avoid or minimize impacts to waterbodies. These data were used to complete delineation reports, 404 permitting (NWP12) and to prepare engineering alignment sheets. As appropriate, Kimberly coordinated directly with the Tulsa and Fort Worth District Regulatory Branch of the USACE for the timely completion and issuance of NWP12. She worked directly with the client's environmental project manager to assist with reroutes and attended alignment sheet review meetings.

Southern Hills Natural Gas Liquids Trunk Line ROW Assessments, Reports and 404 Permitting, December 2011-July 2012
DCP Midstream, LLC
Multiple Oklahoma Counties
Kimberly reviewed and classified over 500 waterbodies along approximately 260 miles of pipeline right-of-way. This project scope was comparable to the project above.

Pipeline Project Coordination and Reporting, August 2014
DCP Midstream, LLC
Ozona, Texas
This was a very fast-paced project for a natural gas gathering pipeline project in Crockett County, Texas in which Kimberly coordinated field work and reporting and completed 404 and floodplain permitting with state and federal agencies for the client.

Comanche Peak Nuclear Power Plant, 2006-2008
Luminant Generation Company
Glen Rose, Texas
Kimberly was part of a terrestrial ecology team that conducted field surveys and wrote sections of an environmental report (ER) in support of a combined license application (COL). She performed habitat assessments for federal and state threatened and endangered (T&E) species, vegetation mapping and calculation of percent cover by plant species, and wetland delineations both at the power plant and along water pipeline ROWs. She assisted the aquatic ecology team with fish surveys, water data, and invertebrate surveys. Kimberly participated in two Nuclear Regulatory Commission site audits and performed quality control of references for the ER and Final Safety Analysis Report (FSAR).■