
Appendix H – Biological Resources

BIOLOGICAL RESOURCES REPORT



ENVIRONMENTAL ASSESSMENT AND PRELIMINARY
ENGINEERING FOR EASEMENT ACQUISITION AND
OBSTRUCTION REMOVAL

OAKLAND SOUTHWEST AIRPORT (Y47)
NEW HUDSON, MI

PROJECT NUMBER 3180300-200931.01

February 2024

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1. Executive Summary

Oakland Southwest Airport seeks to facilitate clear approach and departure paths and to enhance safety at the Airport by acquiring a series of aviation easements for properties that lie within either the Runway Protection zone (RPZ) or the Federal Aviation Regulation (FAR) Part 77 approach surface at both runway ends. These easements will give Oakland County the right to maintain the airspace in these areas and allow for the removal of trees penetrating the approach surface.

As part of development plans at the Airport, the Runway 8/26 Shift and Shortening project is being evaluated in this Short Form Environmental Assessment as a connected action. This project would remove 220 feet from the Runway 8 end and 608 feet from the Runway 26 end. The proposed new runway length of 2,300 feet results from both a shifting of thresholds and an overall reduction in runway length. The Runway 8/26 project would widen the existing runway width to 60 feet (existing width is 40 feet). Several taxiway connectors and a turnaround at the Runway 8 end would also be constructed as part of the project. The area between the Runway Safety Area (RSA) and the Runway Object Free Area (OFA) on the south side of the runway would be cleared and graded to create a surface that can be easily maintained by the Airport.

In support of an environmental assessment, field work was conducted by Mead & Hunt, Inc. (Mead & Hunt) within a portion of the Action Area located on Airport property on September 16 – 17, 2021 and on some private parcels on August 15 – 16, 2023. No survey for threatened and endangered species was conducted. Areas on some private property not examined in the field due to access constraints were reviewed and assessed using available on-line data sources and general site observations.

Proposed project

Oakland County is exploring the potential impacts of aviation easements and obstruction (tree) clearing at both ends of Runway 8/26 at Oakland Southwest Airport. No instream work is proposed for the project. The major project development items that will be covered as a part of this proposed action include:

- Shorten Runway 8/26 by removing 220 feet from the Runway 8 end and 608 feet from the Runway 26 end
- Widen the existing runway to 60 feet and construct a turnaround at the Runway 8 end and taxiway connectors at select locations
- Clear and grade areas within the widened RSA on the south side of the runway
- Obtain aviation easements to remove trees that are obstructions to the FAR Part 77 approach surfaces of Runways 8 and 26
- Clear obstructions (trees) that penetrate the FAR Part 77 approach surfaces of Runways 8 and 26

Listed species

A list of threatened, endangered, and candidate species was obtained through the USFWS IPaC database tool (accessed, February 8, 2024). Five threatened or endangered species identified by the IPaC review and one candidate species are considered in this report. The Rusty Patched Bumble Bee is also reviewed in this report. Fourteen migratory birds protected under the Migratory Bird Treaty and the Bald and Golden Eagle Acts were identified by the IPaC database search. A Michigan Transportation Preliminary Database search revealed no additional species to be considered at the State level. The listed species are presented below.

- Indiana Bat (*Myotis sodalis*)
- Northern Long-eared Bat (*Myotis septentrionalis*)
- Tricolored Bat (*Perimyotis subflavus*)
- Eastern Massasauga rattlesnake (*Sistrurus catenatus*)
- Whooping Crane (*Grus americana*)
- Monarch Butterfly (*Danaus plexippus*)
- Rusty Patched Bumble Bee (*Bombus affinis*)

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

Effect determinations

The All-Species Michigan Endangered Species Determination Key (Michigan DKey) within the USFWS IPaC system was used to generate effect determinations for the five species listed below.

- Indiana Bat, Northern Long-eared bat, and Eastern Massasauga rattlesnake
 - May Effect, Not Likely to Adversely Affect (NLAA)
- Monarch Butterfly and Whooping Crane
 - No Effect

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

Based on field observations, bat habitat assessments, and conservation measures, Mead & Hunt determined there is no effect to the Tricolored Bat or 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. In wetland areas, trees will be cut and removed but grubbing or other land disturbance will be avoided.

Seasonal restrictions and BMPs

Tree removal activities will be performed during the inactive period for the Indiana bat. Tree removal will be accomplished during recommended time periods appropriate for minimizing impacts to any potential bat populations. These measures will be consistent with recommended conservation measures designed to take place outside of the summer roosting period in areas mapped as modeled summer habitat and more than five miles from Tippy Dam. Recommended project activity dates are during the winter months October 1 through April 14.

Coincident with limiting tree removals to the inactive season for both bats, tree clearing activities will occur during the inactive season for the EMR (November 1 through March 31). No hydrologic alterations to groundwater levels are 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 massasauga.

2. Introduction

Oakland Southwest Airport (Y47 or Airport) is a publicly owned general aviation airport serving the southwest Oakland County region. Owned and operated by Oakland County (County), Y47 is identified by the Federal Aviation Administration (FAA) in the National Plan of Integrated Airport Systems (NPIAS) as being a necessary component in the national aviation system. The Airport is defined as a Tier I airport, the highest classification, within the 2017 Michigan Aviation System Plan (MASP), further demonstrating the importance of Y47 to the aviation transportation system within the State of Michigan.

The Airport has one runway, Runway 8/26, which measures 3,128 feet in length and 40 feet in width. Runway 8 has an 875-foot displaced landing threshold, and Runway 26 has an 860-foot displaced landing threshold. Both displacements are due to the presence of vegetative (tree) obstructions at the approach ends of the runways.

As part of the on-going development of the Airport, an aeronautical obstruction survey of approach and departure surfaces identified obstructions during the update of the Airport Layout Plan (ALP) and the Runway Protection Zone (RPZ) Analysis. To better facilitate clear approach and departure paths and to enhance safety of the Airport, a series of easements are being sought for properties that lie within either the RPZ or the approach surface at both ends of Runway 8/26. These easements will give Oakland County the right to maintain the airspace in these areas and allow for the removal of trees penetrating the approach surface. A Short Form Environmental Assessment (EA) for obstruction clearing was initiated in August 2021.

Subsequent to the obstruction analysis, coordination with the Airport, the Michigan Department of Transportation Office of Aeronautics (MDOT AERO), and Mead & Hunt, Inc. (Mead & Hunt), resulted in including the future Runway 8/26 Shift and Shortening project into the current obstruction clearing Short Form EA. Since the current obstruction clearing project is a result of the upcoming Runway 8/26 threshold shifts, the two projects are considered connected actions under the National Environmental Policy Act (NEPA) and are best evaluated together.

The new Runway 8/26 Shift and Shortening project would remove 220 feet from the Runway 8 end and 608 feet from the Runway 26 end. The proposed new runway length of 2,300 feet results from both a shifting of thresholds and an overall reduction in runway length. The Runway 8/26 project would widen the existing runway width to 60 feet (existing width is 40 feet). Several taxiway connectors and a turnaround at the Runway 8 end would also be constructed as part of the project. The area between the Runway Safety Area and the Runway Object Free Area on the south side of the runway would be cleared and graded to create a surface that can be easily maintained by the Airport.

Y47 is in Lyon Township within Oakland County. Oakland County is situated in southeast Michigan approximately 15 miles northwest of downtown Detroit and is the second most populous county in the state with nearly 13 percent of Michigan residents. Lyon Township is in the southwest corner of Oakland County. Neighboring communities are the cities of South Lyon, Novi, and Wixom and the townships of Milford, Green Oak, and Salem. I-96 bisects the northern portion of the Township, running parallel to Grand River Avenue. The Airport itself is in the north central portion of the Township, less than one mile south of I-96 and is in Section 9, Township 1 North, Range 7 East, Oakland County, Michigan.

Surrounding roads are Pontiac Trail to the north, Milford Road to the east, Travis Road to the south, and Martindale Road to the west. A Project Location Map is provided in Appendix A.

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 FAA, which provides the federal nexus for the project.

3. Project Setting/Existing Environment

A. Airport History

Formerly New Hudson Airport, Oakland Southwest Airport began operating in 1946 as a training facility for war veterans interested in pursuing their pilot's licenses under the G.I. Bill (Oakland County, 2022a). Oakland County acquired the airport in 2000. Prior to the construction of the Airport, the lands that became the airport were converted to agricultural production.

Land cover compiled from original surveyors' notes and descriptions (Michigan DNR, 2022) shows the runway and approach surfaces at either end covered primarily by Wet Prairie with an area of Shrub Swamp/Emergent Marsh covering part of Airport property to the north. Oak-Hickory Forest is mapped south of what became the Airport and areas to the north, now occupied by single family residential land use, was covered by Black Oak Barren.

Prior to the construction of the Airport, the lands that became the airport were cleared and converted to agricultural production with wetter areas to the south apparently unable to support crops. Several roads and the railroad enclosed the future Airport property which can be seen in historic aerial photography from 1940 (Oakland County, 2022b). Select historic images are provided in Appendix B.

After construction of the runway and associated hangars, unmanaged lands to the west and south reverted to shrub habitat over time with the eastern end of the Airport able to support forest cover and agricultural uses (Oakland County, 2022b).

B. 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 a terrestrial zone associated with vegetation removal due to the shortening and widening of Runway 8/26. The primary drivers of the terrestrial zone of effect are new impervious surfaces on land currently mowed and maintained and vegetation removal in both uplands and wetlands.

The Action Area consists of two parts, one at either end of the runway. A portion of each Action Area is located on Airport property while the rest of the Action Area is on private lands. A Project Location map is provided in Appendix A. Representative site photos are presented in Appendix C.

(1) Airport Lands

The runway safety areas (RSA) on either side of the runway are regularly mowed. A mix of turf grasses and other graminoid vegetation and forbs cover these managed areas. Outside of the actively maintained areas surrounding the runway, the dominant vegetation is a mixture of low shrubs and trees at the Runway 8 end. At the Runway 26 end, tree cover is confined to the edges of the Action Area.

(2) Non-Airport Lands

Immediately west of Runway 8 (outside of Airport property), the vegetation is dominated by a mix of low shrubs and small trees, like that found south of Airport property. Further to the west, vegetative cover shifts to a taller, more mature canopy as lands cleared earlier in the 1940s experienced woody encroachment. The New Hudson drain flows through this segment of the Action Area on the northern side.

At the Runway 26 end, tree cover between Airport property and Milford Road is patchy with smaller trees and a few isolated mature trees while east of Milford Road, the Action Area is nearly all forested.

C. Surrounding land uses

Surrounding land uses include single-family residential to the north and lower density residential to the west and south. East of the airport is a multi-use pedestrian trail running southwest-to-northeast and to the east of Milford Road sits undeveloped lands currently in agricultural production and forest. The Airport is bounded by Pontiac Trail on the north, Milford Road on the east, and Travis Road on the south.

4. Regulatory Background

A. 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.

B. 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.

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. A Mead & Hunt biologist conducted a desktop review and a field assessment.

A. Evaluation Methods

(1) Desktop Review

Mead & Hunt accessed and reviewed threatened and endangered species information provided in the USFWS Information for Planning and Consultation (IPaC) database for the project (<https://ecos.fws.gov/ipac/>, accessed February 8, 2024). 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) of 1940 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 area from the EGLE. This database search was conducted to review element occurrences of the Michigan Natural Features Inventory (MNFI) for state-listed threatened and endangered species, Tier 1 Eastern Massasauga Rattlesnake (EMR) designated habitat, and Michigan Mussel Protocol Group 1/Group 2 state-listed threatened and endangered mussels.

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

- Publicly available bird sightings (eBird, 2024)
- Online USGS topographic maps (USGS, 2024) and two-foot contour data Oakland County (Oakland County, 2023)
- National Wetlands Inventory mapping (USFWS, 2024)
- Federal Emergency Management Agency (FEMA) Flood Hazard mapping (FEMA, 2023)
- Hydrography Geographic Information System (GIS) data (State of Michigan, 2020)

(2) Site Field Assessment

A site visit was conducted by Mead & Hunt within a portion of the Action Area located on Airport property on September 16 – 17, 2021. Documentation of general site conditions and observations were made including site photos in these areas. This portion of the Action Area comprises 9.98 total acres spread over two areas located at each runway end within Airport property. The approach surfaces at both runway ends were not included in the initial field work due to the need to obtain access permission from property owners. O.R. Colan Associates, LLC was retained to coordinate Right of Entry agreements with private property owners within the Action Area in anticipation of additional field work to complete a wetland delineation. The expanded project area resulting from the inclusion of the Runway 8/26 Shift and Shortening project into the overall project also includes additional areas on Airport property. A site visit was conducted

by Mead & Hunt on August 15 – 16, 2023 that covered some private parcels where access permission was granted and on additional areas on Airport property. The total project area is 45 acres in size, including previously delineated areas on Airport property.

Access to all areas within both sections of the Action Area was not possible. A parcel access map is provided in Appendix A and shows parcels with Right of Entry agreements which allowed for field access. The majority of the private property owners did not respond to multiple requests for Right of Entry agreements; one owner declined to allow access. For those parcels where no response was obtained, access was assumed not to have been granted.

No survey for threatened and endangered species was conducted. Areas on private property not examined in the field due to access constraints were reviewed using available on-line data sources.

B. Results

(1) Desktop Review

(a). Ecoregion

Most of Oakland County is situated within the Southern Michigan/Northern Indiana Drift Plains Ecoregion (EPA Level III Ecoregion: 56) and within the Interlobate Dead Ice Moraines Ecoregion (EPA Level IV Ecoregion: 56h) (USEPA, 2007). The Interlobate Dead Ice Moraines Ecoregion extends in a narrow band roughly from the intersection of the Michigan-Indiana-Ohio state lines to the northeast terminating just east of Flint, Michigan above the Saginaw Lake Plain. This band consists of generally well drained to excessively drained coarse-textured soils dominated by end moraines, kames, and outwash sands. The sandy and gravelly soils supported a variety of plant communities, most notably oak savannas, oak-hickory forests, and both wet and dry tallgrass prairies prior to European settlement. These more open communities were maintained by frequent fires and forested areas have since become more closed-canopied with the suppression of fire. Woodland areas in flatter areas and prairies were converted to agriculture while steeper areas remain forested in the absence of fire (USEPA, 2007).

(b). Topography

The terrain surrounding the runway is flat and slopes gently from east to west. The high point at about 930 ft (NAVD 1988) is near the Runway 26 end and the terrain falls on a gentle grade of less than 1% to the west end at approximately 920 ft. The western portion of the Action Area within the approach surface is dominated by the westward-flowing New Hudson Drain, a steep-sided constructed drain approximately 25 feet wide. Topographic mapping (contour interval at two feet) from Oakland County is presented in Appendix D.

(c). National Wetland Inventory Mapping

National Wetland Inventory (NWI) mapping shows wetlands mapped along the southern airport property. Areas of seasonally flooded emergent (PEM1C), scrub-shrub (PSS1C), and forested (PFO1C) border the runway. The drain running along the north side of the runway is mapped as R5UBH (permanently flooded perennial stream). A large expanse of scrub-shrub/emergent (PSS1C/EM1C) borders the northern edge of the Runway 8 portion of the Action Area. NWI mapping is provided in Appendix D.

Michigan Wetland mapping displays NWI mapping as well as wetlands previously mapped under the Michigan Resource Inventory System (MIRIS) Land Cover Mapping program. The MIRIS mapping shows a large area of emergent wetland beyond the end of Runway 8. Michigan wetland mapping is provided in Appendix D.

(d). Streams and Floodplains

The Airport is located within the Novi Lyons Drain-Davis Creek Watershed (HUC 12: 040900050108) of the Huron River watershed. The New Hudson No. 1 drain parallels the runway on the north side and flows to the west through the Runway 8 Action Area.

No mapped FEMA floodplains are in the Runway 26 section of the Action Area although there are mapped areas of 100-year floodplain along the New Hudson No. 1 drain. At the western end of the runway, an area of 100-year floodplain is mapped along the ditch on both sides of the runway. FEMA floodplain mapping is presented in Appendix D.

(e). Bird Sightings

Bird sighting data was accessed through eBird (eBird, 2024). A listing of 149 birds seen in the general Airport vicinity over the last five years is provided in Appendix E. Bird sighting data from South Hill Road wetlands, located approximately 1.5 miles due east of Runway 8/26 within a similar forested and wetland environment, was accessed and presumed to be a representative sample of the species likely to be found within the general Airport vicinity.

Most of these species are birds commonly found in more developed environments (e.g., Canada geese, cardinals, robins, starlings, house finches, house sparrows, and crows) or are found in open woodlands and shrubby areas during migration (e.g., warblers, northern flickers, cedar waxwings, and sapsuckers). Several sightings of raptors were reported and included red-tailed, broad-winged, and sharp-shinned hawks, Cooper's hawk, northern harrier, osprey, peregrine falcons, and American kestrels, likely finding suitable perches within the area's wooded environment and suitable open spaces to hunt.

The eBird data includes sightings of seven birds listed as Birds of Conservation Concern (BCC) and one sighting of a Bald eagle (*Haliaeetus leucocephalus*). These sightings were for one or two birds at each reported observation, except for the rusty blackbird where six birds were reported in one sighting. The following BCC birds were reported:

- Black tern (*Chlidonias niger*)
- Cerulean warbler (*Setophaga cerulea*)
- Chimney swift (*Chaetura pelagica*)
- Lesser yellowlegs (*Tringa flavipes*)
- Pectoral sandpiper (*Calidris melanotos*)
- Rusty blackbird (*Euphagus carolinus*)
- Short-billed dowitcher (*Limnodromus griseus*)

(2) Site Field Assessment/Existing Conditions

The runway safety areas on either side of the runway are regularly mowed. A mix of turf grasses and other graminoid vegetation and common forbs cover these managed areas. Outside of the actively maintained areas surrounding the runway, the dominant vegetation is a mixture of low shrubs and trees. Wetter areas on the south side of the runway support dogwoods and willows among a mix of graminoid and forb vegetation indicative of southern shrub habitat.

The New Hudson No. 1 drain parallels the runway on the north side and flows to the west. Trees along this ditch primarily consist of cottonwood, box elder, and elm. At the western airport property boundary, an intersecting ditch drains northward from areas on the south side of the airport. Lands south of the runway are dominated by scrub-shrub vegetation consisting of silky and gray dogwood, and glossy buckthorn. Embankments along this western ditch are dominated by glossy buckthorn.

Along the south edge of the Runway 26 RSA, several ponds fringed by a mix of shrubs and some larger trees are present and are presumed to be borrow pits created as part of the construction of the runway.

Outside of Airport property at the Runway 8 end, uplands are dominated by forest and in lower landscape positions, scrub-shrub and emergent plant communities dominate. On the Runway 26 end, uplands are dominated by forested area east of Milford Road and wooded areas along a multi-use trail. A residence with mown turf grass is present between Airport property and Milford Road.

East of Milford Road, access was limited to the multi-use trail where Siberian elm, black walnut, black locust, box elder, and sumac were observed. Red pine was also present along the multi-use trail to the west of Milford Road.

Much of the Runway 8 end of the Action Area was inaccessible. However, the largest parcel on the west end provided right of entry permission. Much of this parcel and the adjacent wooded parcel to the east were dominated by cherry, green ash, elm, shagbark hickory, red maple, and red oak. A large expanse of scrub-shrub vegetation sits directly west of the runway end, extending west to the tree line, and appears to be dominated by glossy buckthorn, common buckthorn, and common reed at somewhat higher elevations that transitions to an emergent area dominated by common reed in lower landscape positions. The New Hudson No. 1 drain flows through this portion of the Action Area from east to west.

6. Proposed Action/Project Description

A. Proposed Action and Project Area

(1) Project Description

The new Runway 8/26 Shift and Shortening project would remove 220 feet from the Runway 8 end and 608 feet from the Runway 26 end. The proposed new runway length of 2,300 feet results from both a shifting of thresholds and an overall reduction in runway length. The Runway 8/26 project would widen the existing runway width to 60 feet (existing width is 40 feet). Several taxiway connectors and a turnaround at the Runway 8 end would also be constructed as part of the project. The area between the RSA and the Runway Object Free Area (OFA) on the south side of the runway would be cleared and graded to create a surface that can be easily maintained by the Airport.

Oakland County is exploring the potential impacts of aviation easements and obstruction (tree) clearing at both ends of Runway 8/26. Obstructions were identified during an update of the Airport Layout Plan (ALP) in 2019 and preparation of a Runway Protection Zone (RPZ) Analysis in 2020.

To better facilitate clear approach and departure paths and to enhance safety of the Airport, a series of easements are being sought for properties that lie within either the RPZ or the FAR Part 77 approach surface at both runway ends. These easements will give Oakland County the right to maintain the airspace in these areas and allow for the removal of trees penetrating the approach surface.

Based upon the data contained in the ALP and the LiDAR Obstruction Analysis (Quantum Spatial, Inc., 2020) completed in 2020 for the FAR Part 77 approach surface, there are approximately 30 properties that are expected to be included in the easement acquisition and tree removal process. These parcels include properties with existing obstructions to the FAR Part 77 approach surface as well as those with obstructions within 10 feet of the approach. Inclusion of these parcels allows for proper planning for future removals. Appendix F contains a map of the proposed development plan and identified obstructions.

The major development items that will be covered as a part of this proposed action include:

- Shorten Runway 8/26 by removing 220 feet from the Runway 8 end and 608 feet from the Runway 26 end
- Widen the existing runway to 60 feet and construct a turnaround at the Runway 8 end and taxiway connectors at select locations
- Clear and grade areas within the widened RSA on the south side of the runway
- Obtain aviation easements to remove trees that are obstructions to the FAR Part 77 approach surfaces of Runways 8 and 26
- Clear obstructions (trees) that penetrate the FAR Part 77 approach surfaces of Runways 8 and 26

No instream work is proposed for the project.

(2) Proposed Action Schedule

Avigation easements on private lands will first need to be acquired. Tree clearing activities will take place after the easements have been acquired, site assessments have been completed, and applicable permits have been obtained. Construction activities are planned for 2025 and 2026.

7. Listed Species

A. Federal Listed Species

(1) Federal Threatened and Endangered

Mead & Hunt accessed and reviewed threatened and endangered species information provided in the USFWS's Information for Planning and Consultation (IPaC) database for the proposed project (<https://ecos.fws.gov/ipac/>, accessed February 8, 2024). Appendix G 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 G is USFWS consultation for the identified listed species. Table 1. summarizes the listed species identified in 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
<i>Myotis sodalis</i>	Indiana Bat	Endangered	Forested habitats containing trees $\geq$ 5 inches dbh; suitable underground hibernacula
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	Endangered	Forested habitats containing trees $\geq$ 3 inches dbh; suitable underground hibernacula
<i>Perimyotis subflavus</i>	Tricolored Bat	Proposed Endangered	Forested habitats; suitable underground hibernacula
<i>Sistrurus catenatus</i>	Eastern Massasauga Rattlesnake	Threatened	Varied wetland habitats coincident with uplands; winter hibernation in low wet areas
<i>Grus americana</i>	Whooping Crane	Experimental Population, Non-essential	
<i>Danaus plexippus</i>	Monarch Butterfly	Candidate	Migratory butterfly found in a variety of habitats supporting their obligate milkweed host plant
<i>Bombus affinis</i>	Rusty Patched Bumble Bee	Endangered	Grasslands and tallgrass prairies of the Upper Midwest

(2) Proposed, Proposed Endangered, Experimental Population, or Candidate Species

The monarch butterfly is a candidate species and is not yet listed or proposed for listing. Consultation with USFWS under Section 7 of the ESA is not required for candidate species although project components may be considered or implemented to best support the monarch.

USFWS proposes to list the tricolored bat as endangered under the ESA and if finalized will extend the Act's protections to the species. Therefore, for the purposes of this report, the bat will be considered as protected under the ESA.

The whooping crane is listed as a non-essential experimental population. In Michigan, this reintroduced population migrates from Wisconsin to Florida.

(3) 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
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Eagle Act	Dec 1 to Aug 31
<i>Chlidonias niger</i>	Black Tern	MBTA	May 15 to Aug 20
<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	MBTA	May 15 to Oct 10
<i>Cardellina canadensis</i>	Canada Warbler	MBTA	May 20 to Aug 10
<i>Dendroica cerulea</i>	Cerulean Warbler	MBTA	Apr 22 to Jul 20
<i>Chaetura pelagica</i>	Chimney Swift	MBTA	Mar 15 to Aug 25
<i>Ammodramus henslowii</i>	Henslow's Sparrow	MBTA	May 1 to Aug 31
<i>Setophaga kirtlandii</i>	Kirkland's Warbler	MBTA	May 25 to Jul 31
<i>Tringa flavipes</i>	Lesser Yellowlegs	MBTA	Breeds elsewhere
<i>Calidris melanotos</i>	Pectoral Sandpiper	MBTA	Breeds elsewhere
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	MBTA	May 10 to Sep 10
<i>Euphagus carolinus</i>	Rusty Blackbird	MBTA	Breeds elsewhere
<i>Limnodromus griseus</i>	Short-billed Dowitcher	MBTA	Breeds elsewhere
<i>Hylocichla mustelina</i>	Wood Thrush	MBTA	May 10 to Aug 31

(4) Critical Habitat

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

B. State Listed Species

Mead & Hunt requested a Transportation Preliminary Database Search from the EGLE (Appendix G). This database search of the MNFI revealed no occurrences of State-listed threatened and endangered species. No Tier 1 Eastern Massasauga Rattlesnake designated habitat is present within the project area and no occurrences of Michigan Mussel Protocol Group 1/Group 2 mussels were found. While the database search did not indicate the presence of Northern Long-eared bats or Indiana bats, the action area is within the range of the Indiana bat where the bat is considered potentially present wherever suitable habitat exists (Appendix G).

C. Consultation to date

A list of threatened, endangered, and candidate species was obtained through the USFWS IPaC database tool (accessed, February 8, 2024). The Michigan All-Species Federal Endangered Species 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 G contains the Federal list of threatened and endangered species that may occur in the Action Area and the verification letter from the USFWS.

Early coordination with EGLE Water Resources Division (WRD) on the proposed project identified applicable permitting requirements related to project work in Davis Creek, the 100-year floodplain, and potential impacts to wetlands. Further, WRD identified potential presence of NLEB, Indiana bat, and EMR in sections covered by the Action Area. A database review search of the MNFI performed through a Transportation Preliminary Database Search request indicated no recorded occurrences of NLEB, the Indiana bat, or the EMR. This correspondence can be found in Appendix G.

8. Biotic Communities/Threatened and Endangered

A. Species Accounts

(1) Northern Long-eared Bat (NLEB)

This wide-ranging bat is found in 37 states from as far west as Montana covering the north-central U.S. 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.

(a). *Habitat Status*

Northern long-eared bats 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, 2022b).

“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, 2022b). 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 Oakland County (USFWS, 2022b).

(2) Indiana Bat

The Indiana bat 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 Oakland County) and the western coastal counties up to and including the Leelanau peninsula.

(a). Habitat Status

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, 2018a).

Suitable summer habitat for Indiana bats, like that of NLEBs, consists of a wide variety of forested/wooded habitats. It may also include some adjacent non-forested habitats such as emergent wetlands and agricultural fields. In contrast to NLEBs, Indiana bats prefer foraging and hunting along riparian areas.

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. Primary Indiana bat roosts usually are in trees that are in early-to-mid stages of decay." (USFWS, 2018a). Larger trees (i.e., >5 inches diameter at breast height [dbh]) also are indicative (USFWS, 2018a).

Michigan has only one known Indiana bat hibernaculum in Manistee County, and research suggests the bat may overwinter in adjacent states such as Indiana and Kentucky. The Indiana bat is known to be present in Lower Michigan, though the MNFI shows no known occurrences in Oakland County. The bat is considered potentially present wherever areas of suitable habitat exist within their range (USFWS, 2022c).

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 (USFWS, 2022c).

There is critical habitat designated for this species. However, there is none designated in the Action Area or in Michigan. Modeled bat habitat for Indiana bats is present within the Action Area (USFWS, 2022c).

(3) Tricolored Bat

TCBs range through 39 states over the central and east sections of the United States from as far west as Texas, Kansas, Nebraska, and South Dakota to the eastern seaboard. The bat's range extends from Texas along the western Gulf of Mexico to as far south as Honduras.

(a). Habitat Status

TCB use live and dead leaf clusters found on live or recently dead deciduous hardwood trees for roosting and sheltering in the active seasons of spring, summer, and fall. They are also known to roost among pine needles and eastern red cedar during summer. They also will use a variety of artificial roosts including barns, bridges, porch roofs, and concrete bunkers (USFWS, 2021).

TCBs will roost in a variety of tree species, especially oaks (*Quercus* spp.), and often select roosts in tall, large diameter trees, but will roost in smaller diameter trees when potential roost substrate is present (e.g., 4-inch). TCBs commonly roost in the mid to upper canopy of trees although males will occasionally roost in dead leaves at lower heights (e.g., <16 feet) from the ground (USFWS, 2023). TCBs rely on small insects as food sources and are opportunistic feeders, foraging at treetop level or higher most commonly near waterways and forest edges.

In the winter months, TCBs hibernate, as do NLEBs, in caves and mines but also are known to utilize road culverts in the southern U.S., where caves are sparse. TCBs also make use of tree cavities and water wells at times and exhibit high site fidelity to established hibernacula. As compared to other cave-hibernating bat species, TCBs are the first to enter hibernation in the fall and the last to emerge in the spring (USFWS, 2021).

As with the NLEBs, WNS has contributed to the decline of TCBs (USFWS, 2021). Other stressors on the species include mortality from wind turbines, loss of roosting, foraging, and commuting habitat, loss or modification of winter habitats, and climate-change induced temperature and precipitation changes, which can affect summer roosting and foraging habitat.

(4) Eastern Massasauga Rattlesnake

The Eastern Massasauga Rattlesnake 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.

(a). Habitat Status

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. Massasaugas 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, 2013).

“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, 2013)

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 and 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.

(5) Rusty Patched Bumble Bee (RPBB)

The species was distributed historically 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 rusty patched bumble bee (*Bombus affinis*) (RPBB) which covered most of the Lower Peninsula (Rowe, Cuthrell, & Enander, 2019). Historic occurrences have been reported throughout Lower Michigan but none after 2000. The last reported occurrences of the bumble bee for Oakland County were in 1965. The current range of the bumble bee in Michigan is mapped in the lower southeastern corner of the state in part due to the presence of potential habitat (Rowe, Cuthrell, & Enander, 2019), including this portion of Oakland County.

(a). Habitat Status

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 bumble bees 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% 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.

The RPBB in Michigan has not been documented in the state since 2000. The MNFI completed statewide inventories of historic bumble bee occurrences and conducted a statewide bumble bee survey in 2016-2019 for at-risk species (Rowe, Cuthrell, & Enander, 2019). From these surveys and analyses, it was determined that the RPBB may possibly be extirpated from Michigan.

(6) Monarch Butterfly

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, 2020).

The monarch butterfly is a candidate species and not yet listed or proposed for listing. There are generally no Section 7 requirements for candidate species.

B. Habitat Assessment

(1) Bat Habitat

(a). Modeled Bat Habitat

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.

Appendix H presents the results of a spatial overlay analysis of proposed tree clearing areas with modeled bat habitat areas. The Runway 8 Action Area contains 9.85 acres of proposed tree clearing area within modeled habitat and Runway 26 Action Area contains 2.0 acres of proposed tree clearing within modeled habitat. Approximately one mile separates the two sections of the Action Area.

(b). Bat Habitat for the NLEB, Indiana Bat, and Tricolored Bat

Appendix H presents habitat assessment forms for areas assessed using USFWS range-wide survey guidelines (USFWS, 2023). A map of assessed areas is also presented in Appendix H. Several assessment areas located on private property were not accessible. Where possible, the exterior of the assessment area was examined from adjacent accessible parcels, from road rights-of-way (ROW), or from publicly accessible areas. Habitat suitability determinations for these inaccessible assessment areas were made using desktop resources such as aerial photography and general site observations.

Mature trees with furrowed, loose, scaled, or plated bark are those most likely to provide roost trees for the NLEB and Indiana bat. Large diameter trees, especially oaks, are suitable roost trees for the TCB. For the purposes of this survey, trees greater than four inches DBH were considered suitable roost trees for all three bats, including the TCB.

The Runway 8 Action Area outside of Airport property has seen historic land clearing and subsequent woody regrowth in areas too wet to support agriculture. Mature tree cover is present in the western half of the Action Area. While having experienced historic clearing, two patches of trees totaling approximately four acres in size appear to have remained relatively intact despite initial land clearing for agriculture and more recent low-density residential development on the western end (Assessment Areas A and B). Patchy forested areas lie to the south and to the west along the New Hudson drain, providing habitat connectivity and travel corridors to and from these areas.

Suitable summer bat habitat is present within these Assessment Areas A, B, and C. The closed canopied, contiguous forest in Areas A and B is dominated by red maple (*Acer rubrum*), red oak (*Quercus rubra*), green ash (*Fraxinus pennsylvanica*), black cherry (*Prunus serotina*), and shag bark hickory (*Carya ovata*) with predominantly small to medium sized trees (< 15in DBH). Larger diameter trees are also present in this mixed age stand. The understory is loose and open. Suitable snags and dead standing trees are present. The New Hudson drain on the north side of the combined assessment areas provides year-round access to water. This woodlot appears to be mostly intact despite surrounding development and hydrological alterations due to ditching. Assessment Area C

was not accessible but on the basis of aerial photographs, a similar forested plant community is deemed present there. These three assessment areas fall within modeled bat habitat.

The eastern half of the Runway 8 Action Area (Assessment Areas D and E) is covered by emergent and scrub-shrub plant communities dominated by invasive species including common reed (*Phragmites australis*), glossy buckthorn (*Frangula alnus*), and common buckthorn (*Rhamnus cathartica*). Suitable summer bat habitat is not present within these two assessment areas. These two assessment areas fall within modeled bat habitat.

In Assessment Areas N, O, and P along the south side of the runway, the plant community is dominated by shrubs within proposed clearing areas. Silky dogwood (*Cornus amomum*), red osier (*Cornus alba*), and glossy buckthorn comprise the understory in Areas N and O; a line of trees is present just outside of the Action Area boundary. Area P covers mostly open water though the shrubby airside fringe includes a few green ash. Suitable summer bat habitat is not present within these three assessment areas proposed for clearing.

At the Runway 26 end, mature tree and shrub cover is confined to the edges of the Action Area on airport property. Assessment Areas F, G, and I contain potentially suitable roost trees within shrubby and disturbed areas: cottonwood (*Populus deltoides*), box elder, green ash, and black cherry trees. The dominant landscape feature within Assessment Areas F and G are two borrow pits with open standing water in deeper sections and marshy areas dominated by cattails and common reed in shallower areas. Small and medium sized trees surround these pits, especially on the south side of the runway and are potentially suitable roost trees. Assessment Area I, on the north side of the Action Area within airport property, is highly disturbed by terrain alteration and is located next to a residence. Suitable roost trees are present within this area consisting of a few mature cottonwoods, cherry, and black walnut (*Juglans nigra*). The understory is cluttered and dominated by common buckthorn.

The Action Area at the Runway 26 end between Airport property and Milford Road (Assessment Areas J, H, and L) contains one residence adjacent to Airport property with isolated trees on most of the parcel and a denser patch of trees on the southern edge of the property (Area J). Area J is dominated by small midstory box elder, cottonwood, and big tooth aspen (*Populus grandidentata*). Despite the presence of potentially suitable roost trees, the area is next to a heavily trafficked road, the multi-use trail, and residences. Similar conditions are present within Areas H and L. Small midstory trees surround the multi-use trail and consist of dominants box elder, sassafras (*Sassafras albidum*), and red pine (*Pinus resinosa*), along with some cherry, black walnut, and shagbark hickory. Milford Road and residences lie to the east of these two assessment areas. Suitable summer bat habitat is not present within these three assessment areas proposed for clearing.

Across Milford Road to the east, a large patch of trees (Assessment Areas K and M) covers the rest of the Action Area, north of an agricultural field, and is part of a much larger stand of mature trees continuing to the east. These two assessment areas could only be accessed from the multi-use trail. Area K is highly disturbed due to the historic construction of the railroad which later

became the trail and the dominance of invasive oriental bittersweet (*Celastrus orbiculatus*) which contributes to a dense and cluttered understory. Suitable roost trees are present within Area K including box elder (*Acer negundo*) and black locust (*Robinia pseudoacacia*); however, co-dominants in this area include quaking aspen (*Populus tremuloides*) and sumac (*Rhus* sp.). Assessment Area M is similarly affected by oriental bittersweet along the trail; however, suitable roost trees consist of small to medium sized cherry and elm (*Ulmus americana*). Much of Area M is modeled as habitat likely to contain NLEB and Indiana bats (see Modeled Bat Habitat Map in Appendix H). It is presumed that suitable summer bat habitat is present within Area M on the basis of general field observations and a review of historic aerial images.

Habitat suitability determinations are summarized in Table 3 below along with recommendations for clearing based on guidance provided by USFWS relating to the location of the project within area mapped as modeled summer bat habitat and more than five miles from Tippy Dam. Recommended project activity dates are during the winter months October 1 through April 14 (USFWS, 2022c).

TABLE 3. BAT ASSESSMENT SITE SUMMARY WITH RECOMMENDATIONS

ASSESSMENT AREA	HABITAT DESCRIPTION	SUITABILITY DETERMINATION	RECOMMENDATION
A, B, and C	Red oak/red maple/shagbark hickory mixed forest	Suitable habitat is present	Avoid cutting April 15 through September 30
D and E	Scrub-shrub and emergent wetland	Unsuitable habitat	Approved for clearing
F, G, and I	Mixed forest in disturbed areas	Unsuitable habitat, potentially suitable roost trees	Avoid cutting April 15 through September 30
J, H, and L	Small mixed forest patches in disturbed area	Unsuitable habitat	Approved for clearing
K	Mixed forest in disturbed area	Unsuitable habitat, potentially suitable roost trees	Approved for clearing
M	Mixed mature forest	Suitable habitat is present	Avoid cutting April 15 through September 30
N, O, and P	Scrub-shrub wetland	Unsuitable habitat	Approved for clearing

(2) Eastern Massasauga

Although the Action Area does not fall within Tier 1 habitat, it is within the known range of the EMR (USFWS List and MI EGLE Correspondence in Appendix G). Occurrences of the Eastern Massasauga Rattlesnake have been reported in Oakland County as recently as 2022 (<https://mnfi.anr.msu.edu/species/description/11519/sistrurus-catenatus>). The highly managed areas on the airfield within the Action Area are regularly mowed. This habitat is characterized as a mixture of turf grasses and other graminoid vegetation and common forbs. The on-going vegetation maintenance operations on the airfield cause significant regular vegetative disturbance. These site conditions constitute unsuitable habitat conditions for the EMR on Airport property.

Wetlands on Airport lands are found within the Action Area. At the Runway 8 end and along the south side of the runway, the edges of shrub habitat were delineated as well as the ditch which connects to the New Hudson Drain (Mead & Hunt, 2024). The shrub habitat is dominated by invasives including glossy buckthorn and a large stand of phragmites. These degraded areas and their close proximity to highly managed areas are unlikely to support the EMR.

At the Runway 26 end, wetlands were delineated around borrow pits/ponds on the south edge of the Action Area and a degraded forested wetland dominated by common buckthorn on the north edge (Mead & Hunt, 2024). These degraded areas and their close proximity to highly managed areas are unlikely to support the EMR.

Much of the Runway 8 end of the Action Area was inaccessible. However, the largest parcel on the west end provided right of entry permission. This parcel and the adjacent wooded parcel to the east were dominated by cherry, green ash, elm, shagbark hickory, red maple, and red oak in a close-canopied mature stand. A large expanse of scrub-shrub vegetation sits directly west of the runway, extending west to the tree line, and appears to be dominated by glossy buckthorn, common buckthorn, and common reed at a somewhat higher elevation. Adjacent to this shrub plant community is an emergent area dominated by a large stand of common reed which extends to the west to higher elevations covered by mature forest. From limited field observations, the emergent wetland adjacent to the forested tree line could potentially provide suitable component habitat for the EMR. Despite the dominance of invasive species, EMR often can utilize disturbed habitat such as this, utilizing the structure this habitat provides, rather than being limited by a need for high quality habitat.

The Runway 26 Action Area east of Milford Road was not accessible for field survey except along the multi-use trail. NWI mapping shows no mapped wetlands within the Action Area at the Runway 26 end outside of Airport property. The forested areas east of Milford Road do not appear to have adjacent wetlands and likely the mature forest cover would be too shady, providing little suitable habitat for the EMR. The area between airport property and Milford Road contains residences, the multi-use trail, and small forested patches, habitat likely unsuitable for the EMR. See Appendix D for NWI mapping.

(3) Rusty Patched Bumble Bee

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 not present within the Action Area on Airport property due to the long history of vegetation maintenance activities on the airfield. Therefore, the Action Area on Airport Property provides limited potential habitat for the RPBB.

The Action Area outside of Airport property is covered by shrubby wetland areas often dominated by large areas of invasive species or mature forested areas, habitat that would not appear to

provide the nectaring and foraging resources needed to support the RPBB. The Action Area outside of Airport Property provides limited potential habitat for the RPBB.

Within the historical range of the bumble bee, the RPBB has not been observed or collected since the year 1965. Section 7 consultation and Incidental Take permits are not needed.

(4) Monarch Butterfly

Little suitable habitat is present within either end of the Action Area in part due to the long history of vegetation maintenance activities on the airfield and the presence of scrub-shrub, forested areas not conducive to supporting the Monarch's host plant.

9. Impact Analysis

The proposed project would remove trees within the Action Area identified as obstructions (existing obstructions to the FAR Part 77 approach surface as well as those identified as obstructions within 10 feet of the approach). In wetland areas, tree cutting and removal would be accomplished without significant or permanent ground disturbance. In upland areas, clearing and grubbing is proposed followed by smoothing and grading with reseeding to native vegetation which would keep woody regrowth to a minimum for the future. Runway construction activities will occur during the summer months and will take place in previously disturbed areas.

A. Threatened and Endangered Species

The All-species Michigan Determination DKey within the IPaC system was used to generate effect determinations (Table 4). Appendix G includes 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 4. RECOMMENDED EFFECT DETERMINATIONS FROM MICHIGAN DKEY

Species Name	Status	DKey Determination
Eastern Massasauga (<i>Sistrurus catenatus</i>)	Threatened	NLAA*
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	NLAA*
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	NLAA*
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed Endangered	No effect**
Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate	No effect
Whooping Crane (<i>Grus americana</i>)	Experimental Population, Non-essential	No effect

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

**No effect determination made by M&H

(1) Listed Bats (Indiana, Northern Long-eared, and Tricolored)

The primary direct effect of this action for all three bats is the loss of potential habitat, specifically larger trees that are potential roost trees, and foraging habitat. No known roost trees for the NLEB or the Indiana bat 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 for either bat.

The proposed tree clearing activities will clear forested area within the two sections of the Action Area. Based on a spatial overlay analysis of proposed tree clearing areas with modeled NLEB/Indiana bat habitat areas, the Runway 8 Action Area A contains 9.85 acres of proposed tree clearing area within modeled habitat and the Runway 26 Action Area contains 2.05 acres of proposed tree clearing within modeled habitat. Approximately one mile separates the two sections of the Action Area. Suitable summer bat habitat is present within the Action Area as detailed in Section 8B(1).

Proposed avoidance and minimization measures detailed in Section 10 below for tree cutting within specific time frames should limit incidental take of NLEB and Indiana bats. Therefore, the proposed action may affect, but is not likely to adversely affect the NLEB or the Indiana bat.

While the status of the tricolored bat under the ESA is proposed endangered, Section 7(a)(4) of the ESA requires federal agencies to confer with USFWS if their action will jeopardize the continued existence of a proposed species. Suitable summer bat habitat is potentially present within the Action Area. However, since documented occurrences in Michigan and more specifically Oakland County are rare, it is unlikely that the bat is present. Following recommendations presented in Section 10 for tree cutting within specific time frames should limit any potential incidental take of TCB. Therefore, the proposed action will have no effect on the TCB.

(2) Eastern Massasauga rattlesnake

The Action Area is not within Tier 1 or Tier 2 EMR habitat and EMR are unlikely to be present. The Action Area is within the known range of the EMR. Potentially suitable habitat is present with the Runway 8 end of the Action Area along an emergent/ forested transition zone. Suitable hibernation sites and potentially suitable upland habitat in open areas that could provide nesting sites are present within this transition zone.

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. No hydrologic alterations are anticipated to occur during project activities. The proposed project activities will not appreciably change surface water elevations upstream or downstream along the New Hudson Drain nor include any significant changes to local hydrology. 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.

(3) Monarch Butterfly

The monarch butterfly is a candidate species and is not yet listed or proposed for listing. Consultation with USFWS under Section 7 of the ESA is not required for candidate species although project components may be considered or implemented to best support the monarch.

(4) Rusty Patched Bumble Bee

While the Action Area is within the historic range of the Rusty Patched bumble bee, it has not been documented within Oakland County since 1965 and it is unlikely to be present. Therefore, there will be no direct effect on the RPBB.

B. 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 during the winter months. The probability of presence for all identified migratory birds with the exception of the Bald eagle is indicated to be very low to absent. Bald eagles are active throughout the year. However, adjacent forested and wetland habitat provide refugia for any eagles present during project activities.

10. Impact Avoidance and Conservation Measures

The proposed action includes elements that are designed to reduce adverse effects of the action.

A. Northern Long-eared, Indiana, and Tricolored Bats

(a). 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. In wetland areas, trees will be cut and removed but grubbing or other land disturbance will be avoided.

(b). Seasonal restrictions

Tree removal activities will be performed during the inactive period for the Indiana bat. Tree removal will be accomplished during recommended time periods appropriate for minimizing impacts to any potential bat populations. These measures will be consistent with recommended conservation measures designed to take place outside of the summer roosting period in areas mapped as modeled summer habitat and more than five miles from Tippy Dam. Recommended project activity dates are during the winter months October 1 through April 14.

B. Eastern Massasauga

Tree clearing activities will occur during the inactive season for the EMR (November 1 through March 31). No hydrologic alterations to groundwater levels are anticipated and no ground disturbance will occur in wetlands.

Tree clearing activities would occur outside of the active season for the EMR, overlapping with the inactive season for bats. 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 and Determination

Based upon the data sources reviewed above and recommended determinations made through the Michigan DKey, we conclude that tree clearing activities at this site and construction activities will have no effect on the Monarch Butterfly. Further, we conclude that the proposed project will have no effect on the Rusty-patched bumble bee, the Whooping crane, or the tricolored bat. 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 may affect but will likely not adversely affect the Northern Long-eared bat and the Indiana bat. Project activities will be conducted within recommended time frames to minimize adverse effects to the bat.

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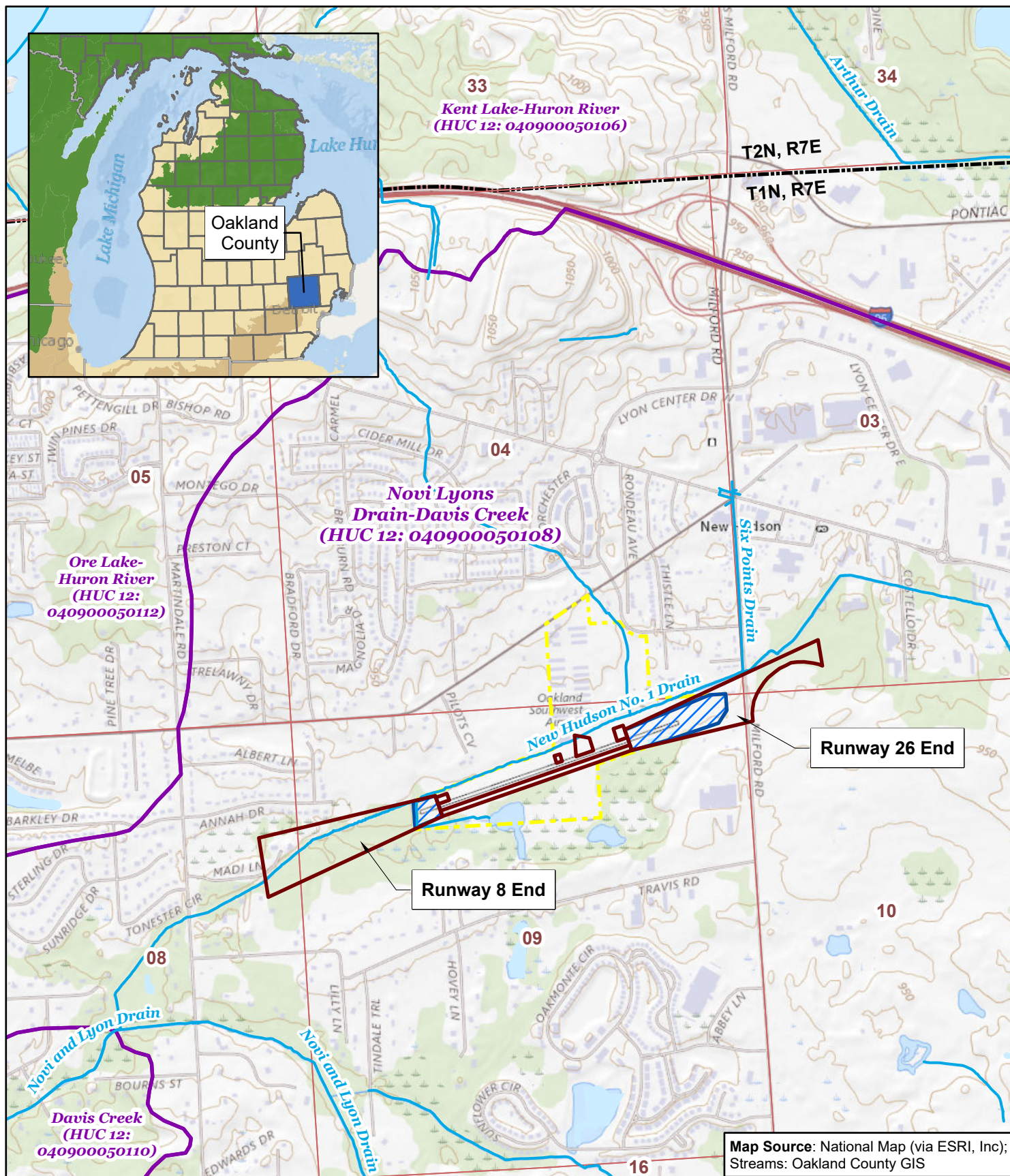
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13. List of Preparers/Contributors

The preparer of this document is:

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

APPENDIX A Project Location Map and Accessibility Map



Project Location

Oakland Southwest Airport (Y47)
New Hudson, Michigan

0 500 1,000 2,000
Feet

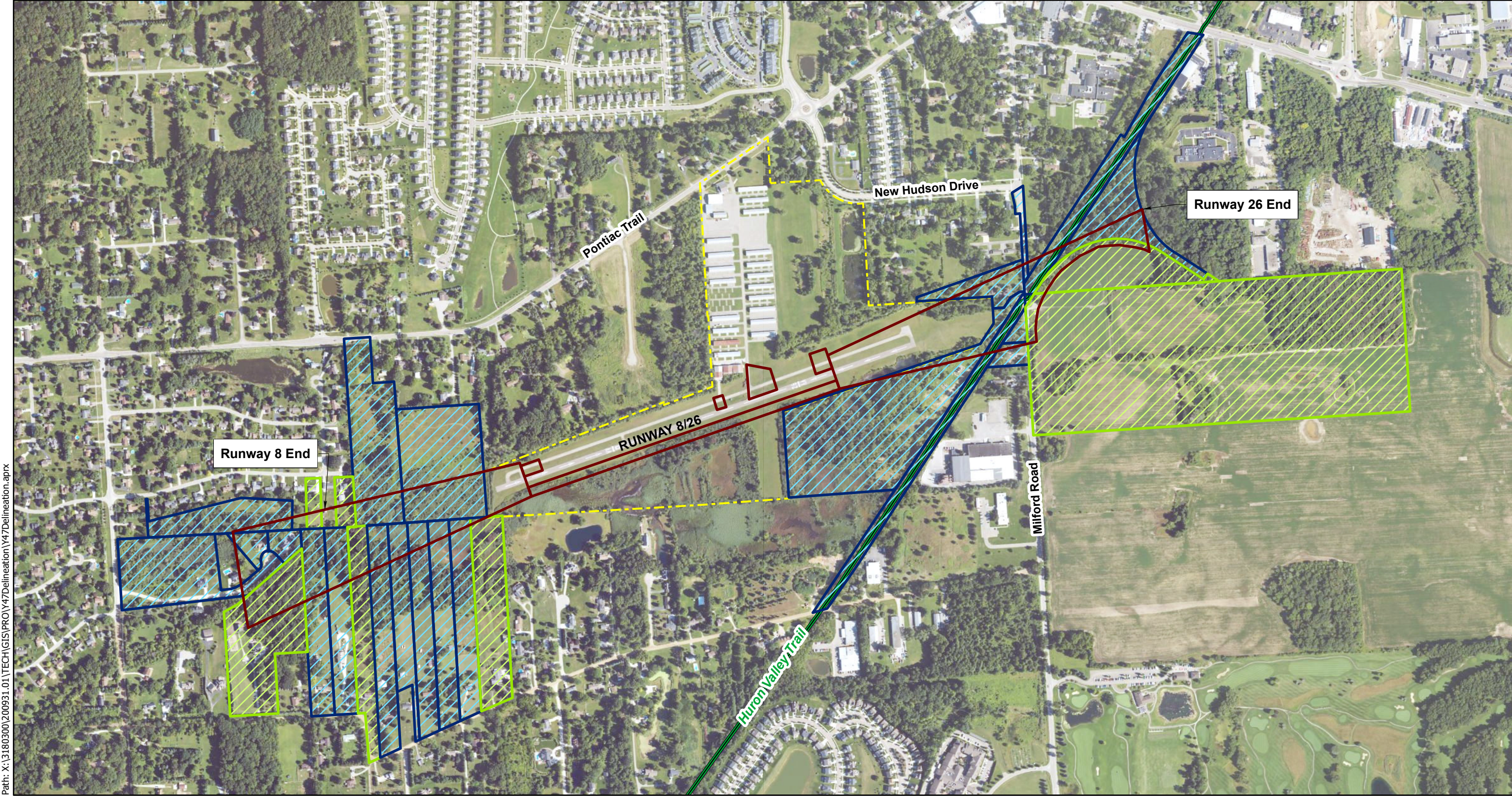


Legend

- Project AOI
- Airport Boundary
- Airport Lands Field Reviewed 2021
- Oakland County Streams
- Lake/Pond
- Township Boundary
- PLS Section Line
- Watershed Boundary (HUC 12)

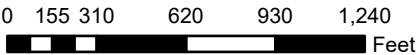
Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
USACE Regional Supplement: Midwest
Area of Interest: 45.0 acres
Airport Lands Field Reviewed: 9.98 acres
USGS Quads: Kent Lake and Milford
Field work conducted: Sept. 16 - 17, 2021
and August 14 - 15, 2023



Parcel Accessibility Map

Oakland Southwest Airport (Y47)
New Hudson, Michigan



Legend

- | | |
|--------------------------------|----------------------------|
| Project Area of Interest (AOI) | Owner Consent Given |
| Multi-use Trail | No or No response |
| Airport Property Boundary | Yes |

Data Sources:

- Obstruction Parcels identified by Quantum Spatial, Obstruction Analysis, 2020
- Access permission data provided by ORC Real Estate Solutions for Infrastructure, May 31, 2023
- Base map imagery from FSA-NAIP, Oakland County, 2022

Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
 City of New Hudson
 Oakland County, MI
 Action Area: 45.0 acres
 USGS Quads: Kent Lake and Milford

APPENDIX B Select Historic Aerial Images

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HISTORIC AERIAL IMAGERY

Oakland Southwest Airport (Y47)
New Hudson, Michigan



LEGEND

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

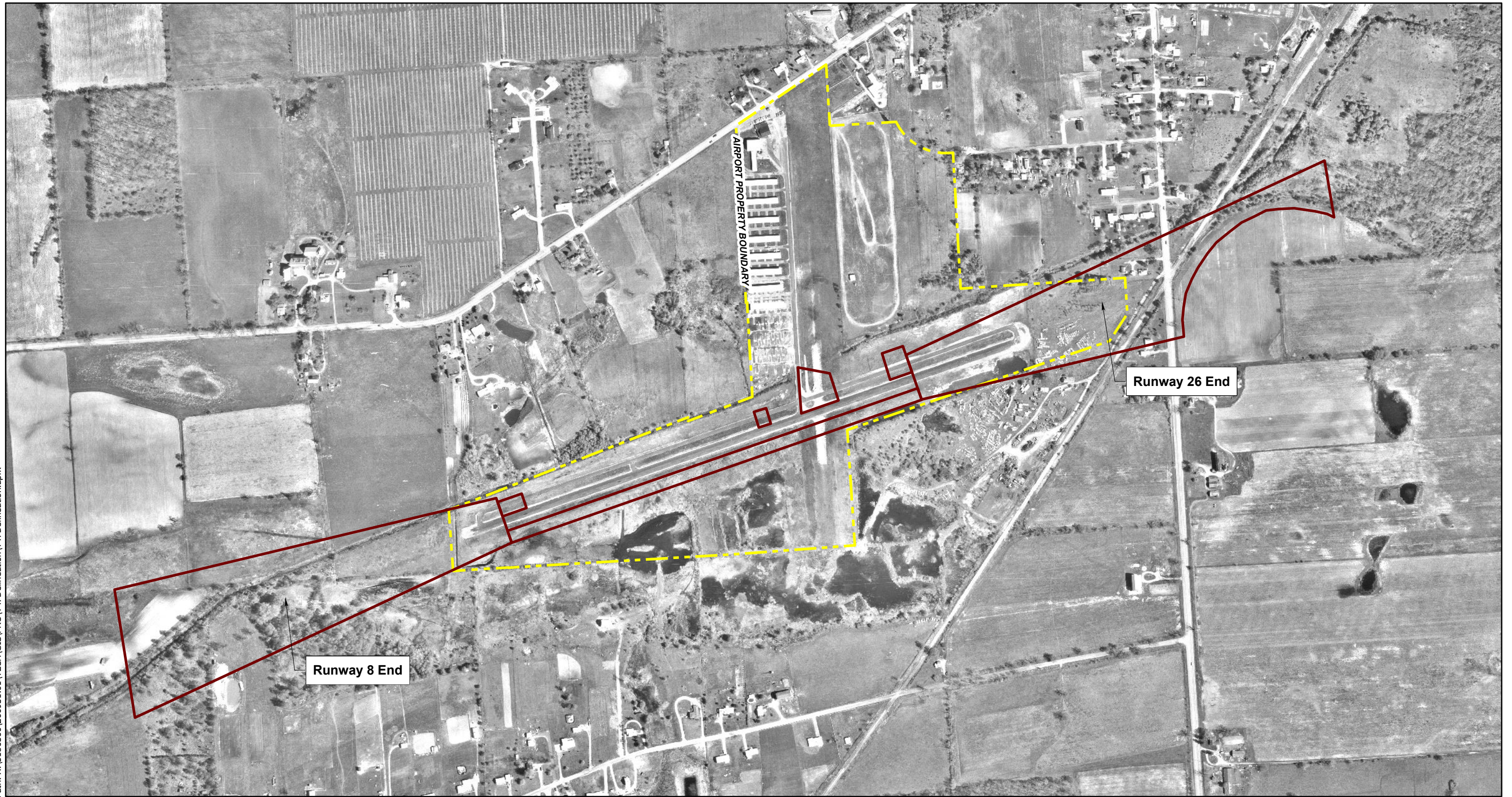
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Data Source:
Ortho Image Services, Access Oakland
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Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
Area of Interest: 45.0 acres
USGS Quads: Kent Lake and Milford

Path: X:\3180300\200931.01\TECH\GIS\PRO\Y47\Delineation\Y47Delineation.aprx



HISTORIC AERIAL IMAGERY

Oakland Southwest Airport (Y47)
New Hudson, Michigan



LEGEND

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

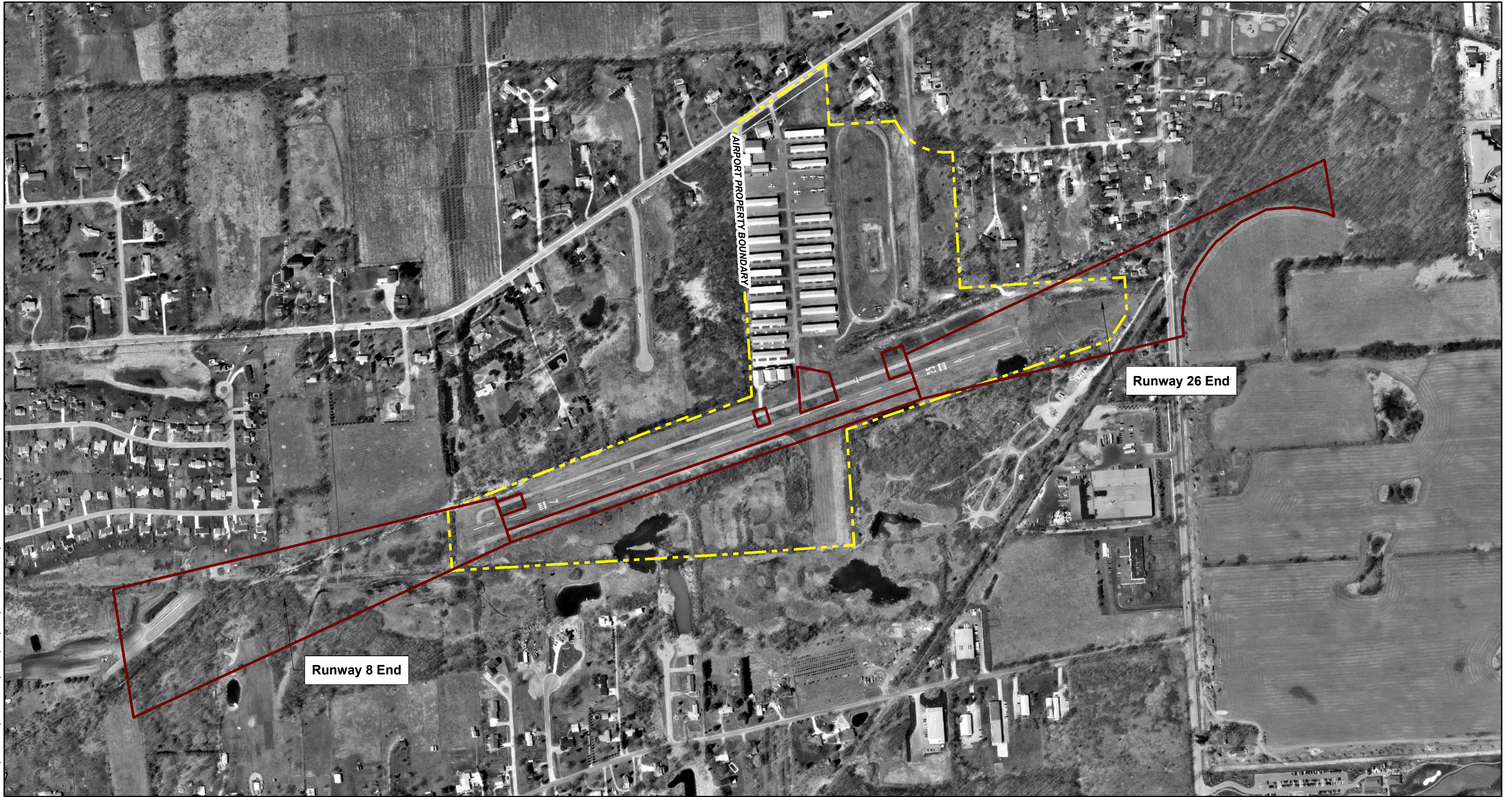
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Data Source:
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Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
Area of Interest: 45.0 acres
USGS Quads: Kent Lake and Milford

Path: X:\3180300\200931.01\TECH\GIS\PRO\Y47\Delination\Y47Delination.aprx



HISTORIC AERIAL IMAGERY

Oakland Southwest Airport (Y47)
New Hudson, Michigan



LEGEND

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

IMAGE DATE = 2000

Data Source:
Ortho Image Services, Access Oakland
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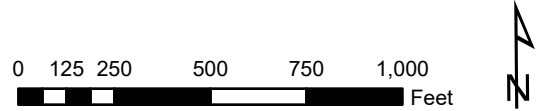
Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
Area of Interest: 45.0 acres
USGS Quads: Kent Lake and Milford



HISTORIC AERIAL IMAGERY

Oakland Southwest Airport (Y47)
New Hudson, Michigan



LEGEND

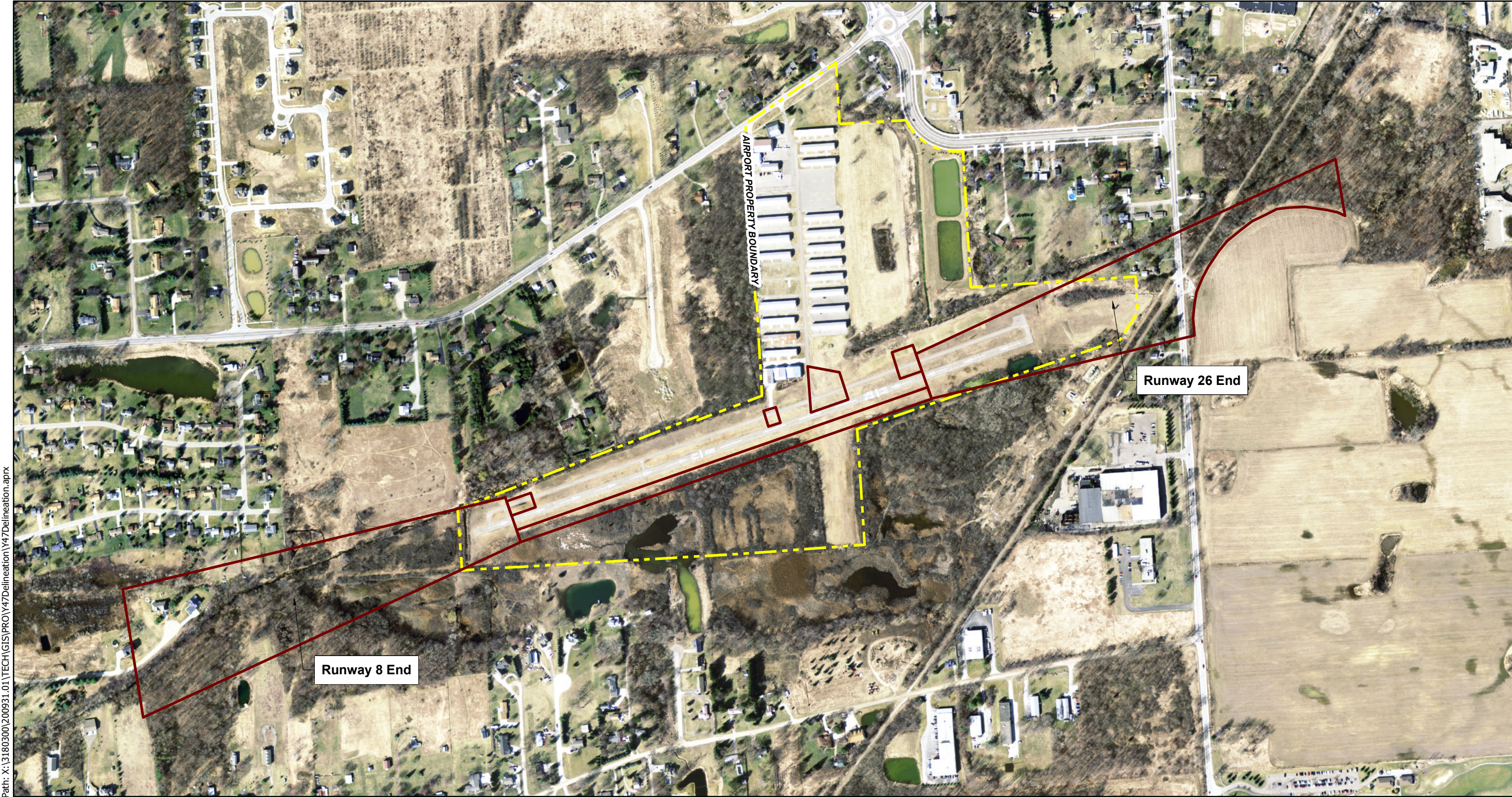
- Project Area of Interest (AOI)
- Airport Property Boundary

IMAGE DATE = 2005

Data Source:
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Project Location

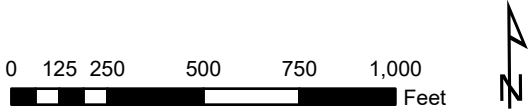
T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
Area of Interest: 45.0 acres
USGS Quads: Kent Lake and Milford



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HISTORIC AERIAL IMAGERY

Oakland Southwest Airport (Y47)
New Hudson, Michigan



LEGEND

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

IMAGE DATE = 2012

Data Source:
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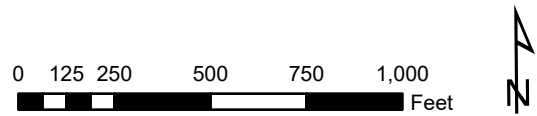
Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
Area of Interest: 45.0 acres
USGS Quads: Kent Lake and Milford



HISTORIC AERIAL IMAGERY

Oakland Southwest Airport (Y47)
New Hudson, Michigan



LEGEND

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

IMAGE DATE = 2020

Data Source:
Ortho Image Services, Access Oakland
(<https://gisservices.oakgov.com/arcgis/rest/services/ImageServices>)

Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
Area of Interest: 45.0 acres
USGS Quads: Kent Lake and Milford

APPENDIX C Site Photos on Airport Property



Photo 1. General site near Runway 26 End. View to the east.



Photo 2. General site near Runway 26 End. View to the southwest.



Photo 3. Runway 26 End, General site. View to the southeast.



Photo 4. Tree cover at Runway 26 End, General site. View to the north.



Photo 5. Shrub line along Runway 26 end, General site. View to the southwest.



Photo 6. Shrub line along Runway 26 end, General site. View to the east.



Photo 7. Cattails along Runway 26 End. View to the northeast.



Photo 8. Runway 8 End, General site. View to the west.



Photo 9. Runway 8 End, General site. View to the east.



Photo 10. Runway 8 End along shrub line of ditch. View to the north.

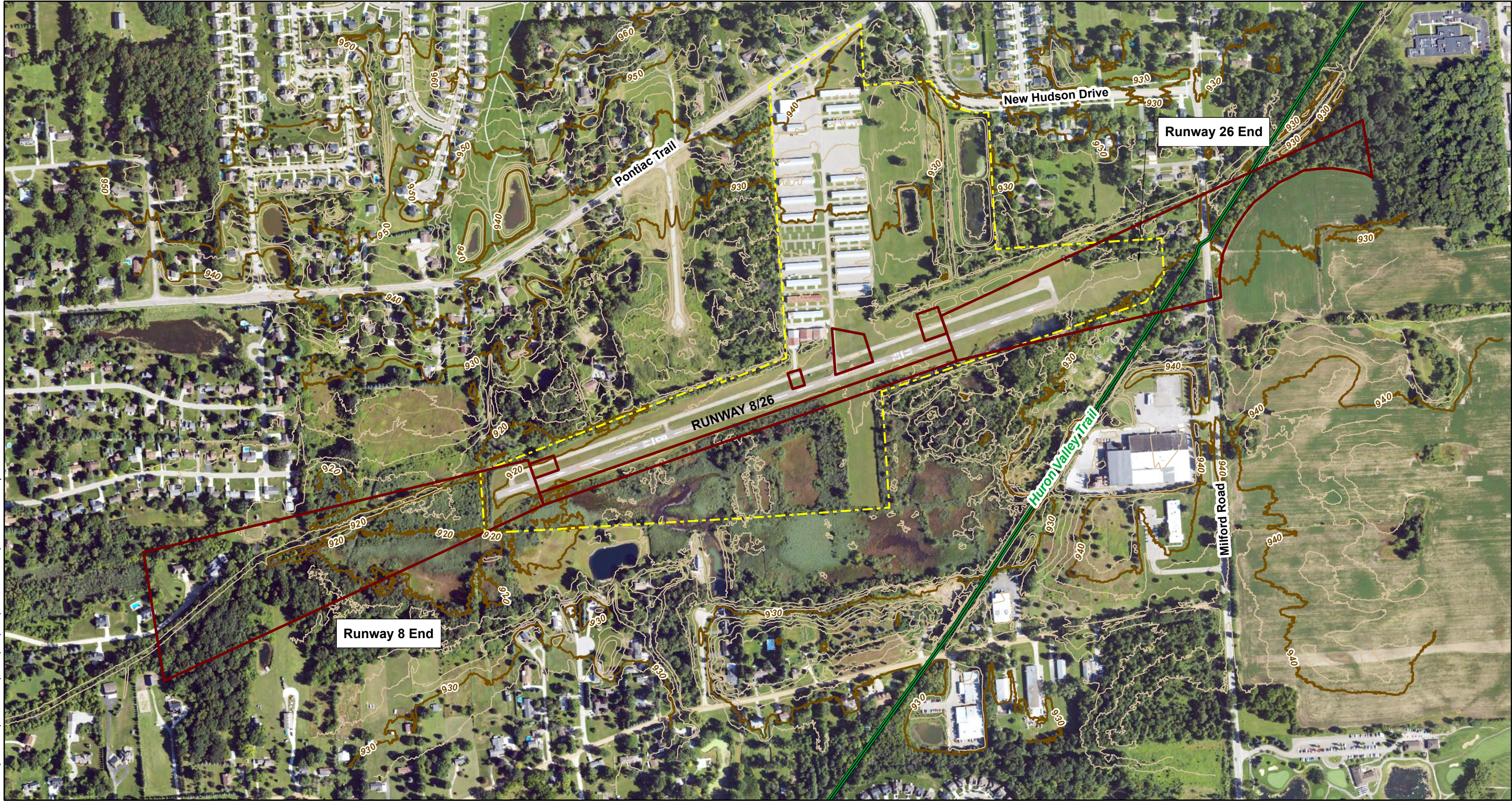


Photo 11. Ditch at Runway 8 End. View to the north.



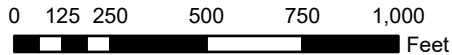
Photo 12. Ditch at Runway 8 End. View to the west.

APPENDIX D National Wetland Inventory, Topography, and FEMA Floodplain Mapping



Topography Map

Oakland Southwest Airport (Y47)
New Hudson, Michigan



Legend

- Project Area of Interest (AOI)
- Multi-use Trail
- Airport Property Boundary

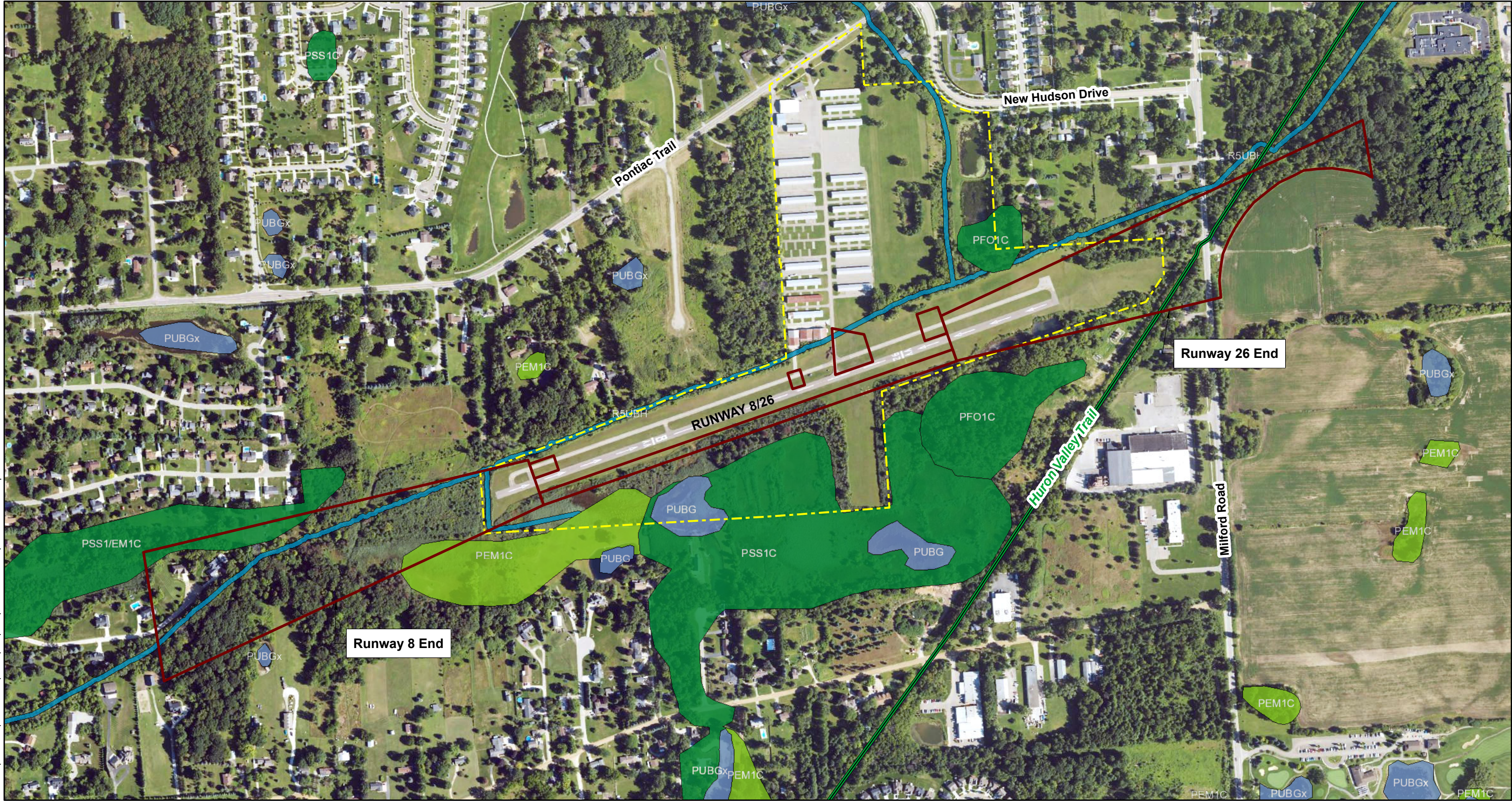
Contour Type

- Index
- Intermediate

Data Sources:
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 2. Base map imagery from FSA-NAIP, Oakland County, 2022

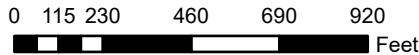
Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
 City of New Hudson
 Oakland County, MI
 LRR Subregion: M
 USACE Regional Supplement: Midwest
 Area of Interest: 45.0 acres
 USGS Quads: Kent Lake and Milford
 Field work conducted: Sept. 16 - 17, 2021
 and August 14 - 15, 2023



National Wetlands Inventory (NWI) Map

Oakland Southwest Airport (Y47)
New Hudson, Michigan



Legend

- Project Area of Interest (AOI)
- Multi-use Trail
- Airport Property Boundary

- Wetlands
- Estuarine and Marine Deepwater
 - Estuarine and Marine Wetland
 - Freshwater Emergent Wetland

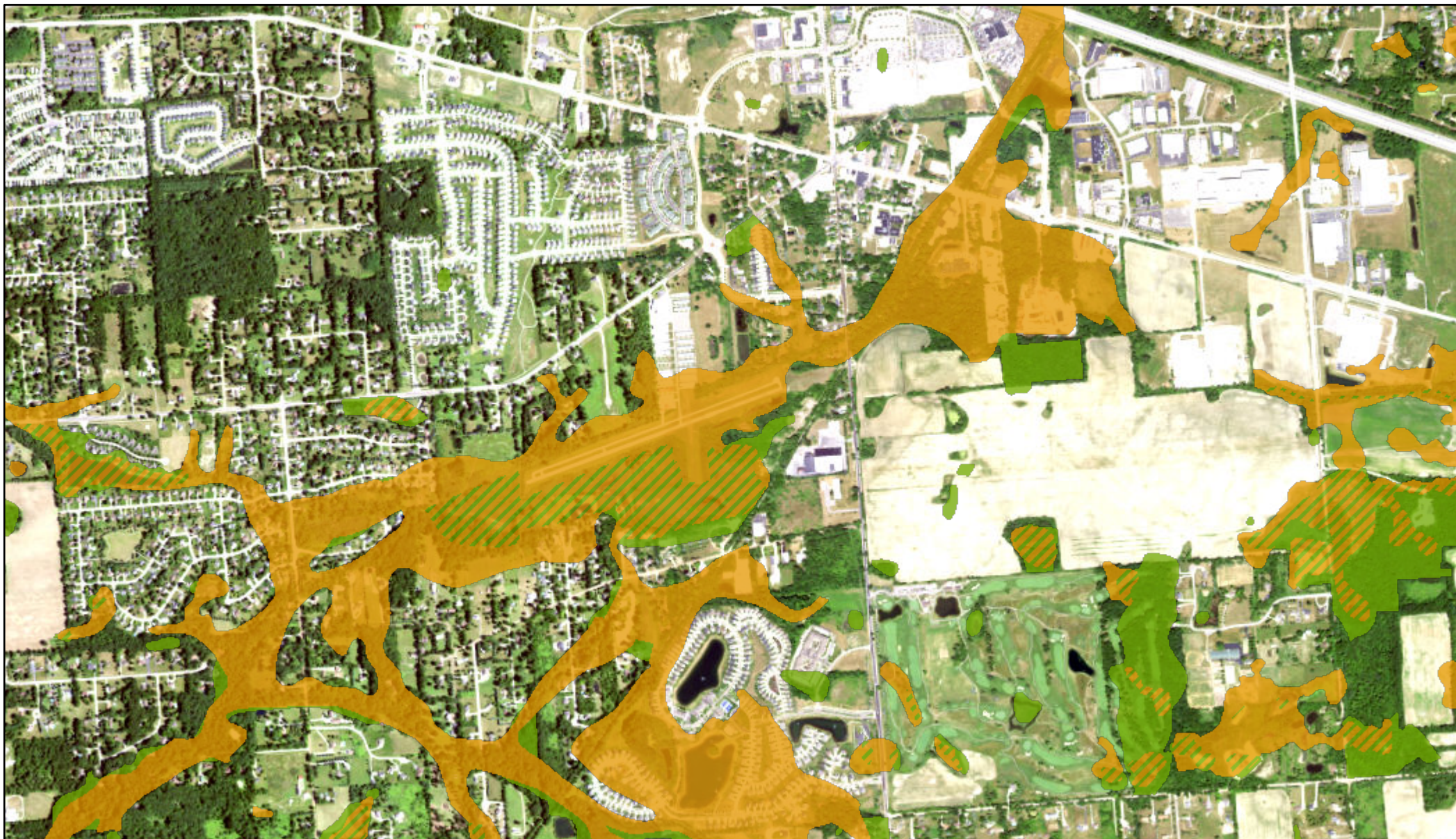
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Data Sources:
1. USFWS, National Wetland Inventory GIS Service
(<https://fwspubliicservices.wim.usgs.gov/wetlandsmapservice/rest/services/Wetlands/MapServer>)
2. Base map imagery from FSA-NAIP, Oakland County, 2022

Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
Action Area: 45.0 acres
USGS Quads: Kent Lake and Milford

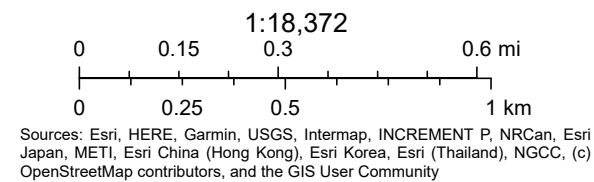
Wetlands Map Viewer



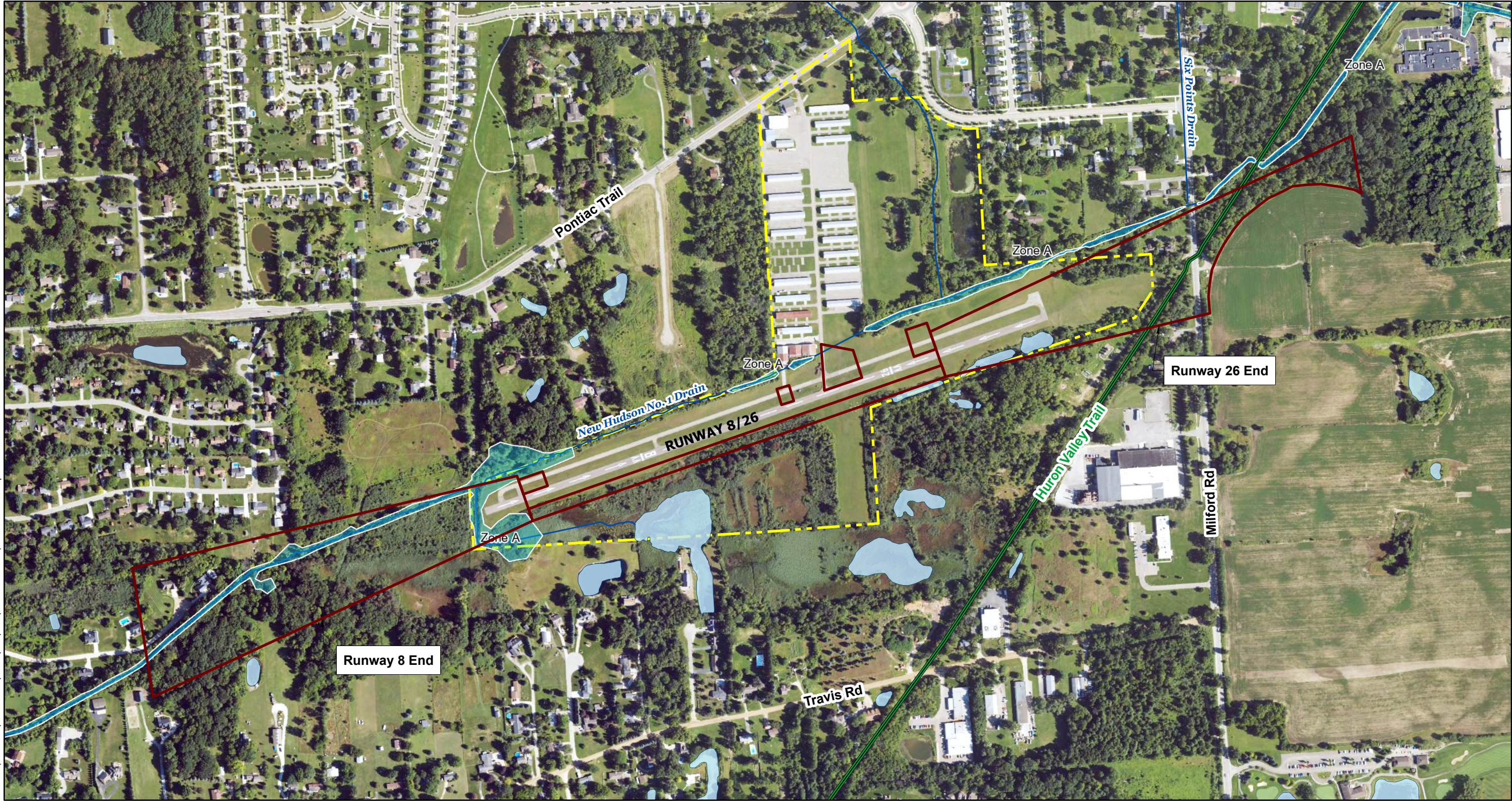
January 11, 2024

Part 303 Final Wetlands Inventory

-  Wetlands as identified on NWI and MIRIS maps
-  Soil areas which include wetland soils
-  Wetlands as identified on NWI and MIRIS maps and soil areas which include wetland soils

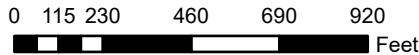


Disclaimer: This map is not intended to be used to determine the specific



FEMA Floodplain Map

Oakland Southwest Airport (Y47)
New Hudson, Michigan



Legend

- | | |
|--------------------------------|-----------------------------------|
| Project Area of Interest (AOI) | Flood Hazard Zones |
| Airport Property Boundary | 1% Annual Chance Flood Hazard |
| Multi-use Trail | Regulatory Floodway |
| Lake/Pond | Special Floodway |
| Streams | Area of Undetermined Flood Hazard |

- | |
|---|
| 0.2% Annual Chance Flood Hazard |
| Future Conditions 1% Annual Chance Flood Hazard |
| Area with Reduced Risk Due to Levee |
| Area with Risk Due to Levee |

Data Sources:
1. Streams and Lakes: Oakland County, Access Oakland Open Data Portal.
2. FEMA National Flood Hazard Layer GIS Service
(<https://hazards.fema.gov/gis/nfhl/rest/services/public/NFHL/MapServer>)
3. Base map imagery from FSA-NAIP, Oakland County, 2022

Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
Action Area: 45.0 acres
USGS Quads: Kent Lake and Milford

APPENDIX E Bird Sightings

Bird Sightings, South Hill Road Wetlands, Oakland County, Michigan

eBird.org

SPECIES NAME	COMMON NAME	COUNT	YEAR OBSERVED
<i>Ardea herodias</i>	Great Blue Heron	1	2024
<i>Branta canadensis</i>	Canada Goose	250	2024
<i>Anas platyrhynchos</i>	Mallard	60	2024
<i>Zenaida macroura</i>	Mourning Dove	15	2024
<i>Falco sparverius</i>	American Kestrel	1	2024
<i>Haemorhous mexicanus</i>	House Finch	2	2024
<i>Cardinalis cardinalis</i>	Northern Cardinal	2	2024
<i>Cyanocitta cristata</i>	Blue Jay	1	2024
<i>Passer domesticus</i>	House Sparrow	5	2024
<i>Junco hyemalis</i>	Dark-eyed Junco	1	2024
<i>Spizelloides arborea</i>	American Tree Sparrow	20	2024
<i>Eremophila alpestris</i>	Horned Lark	9	2024
<i>Buteo jamaicensis</i>	Red-tailed Hawk	2	2024
<i>Melospiza melodia</i>	Song Sparrow	1	2023
<i>Dryobates villosus</i>	Hairy Woodpecker	1	2023
<i>Baeolophus bicolor</i>	Tufted Titmouse	1	2023
<i>Sitta carolinensis</i>	White-breasted Nuthatch	1	2023
<i>Antigone canadensis</i>	Sandhill Crane	8	2023
<i>Corvus brachyrhynchos</i>	American Crow	1	2023
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	1	2023
<i>Poecile atricapillus</i>	Black-capped Chickadee	Unknown	2023
<i>Cathartes aura</i>	Turkey Vulture	1	2023
<i>Dryobates pubescens</i>	Downy Woodpecker	1	2023
<i>Colaptes auratus</i>	Northern Flicker	1	2023
<i>Dumetella carolinensis</i>	Gray Catbird	1	2023
<i>Turdus migratorius</i>	American Robin	1	2023
<i>Melospiza georgiana</i>	Swamp Sparrow	1	2023
<i>Charadrius vociferus</i>	Killdeer	7	2023
<i>Ardea alba</i>	Great Egret	1	2023
<i>Tachycineta bicolor</i>	Tree Swallow	3	2023
<i>Hirundo rustica</i>	Barn Swallow	10	2023
<i>Sturnus vulgaris</i>	European Starling	60	2023
<i>Sialia sialis</i>	Eastern Bluebird	1	2023
<i>Spinus tristis</i>	American Goldfinch	3	2023
<i>Passerculus sandwichensis</i>	Savannah Sparrow	1	2023
<i>Meleagris gallopavo</i>	Wild Turkey	1	2023
<i>Larus delawarensis</i>	Ring-billed Gull	250	2023
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	4	2023
<i>Charadrius semipalmatus</i>	Semipalmated Plover	1	2023
<i>Cygnus olor</i>	Mute Swan	1	2023
<i>Actitis macularius</i>	Spotted Sandpiper	2	2023
<i>Tringa solitaria</i>	Solitary Sandpiper	1	2023

SPECIES NAME	COMMON NAME	COUNT	YEAR OBSERVED
<i>Calidris pusilla</i>	Semipalmated Sandpiper	2	2023
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	2	2023
<i>Setophaga petechia</i>	Yellow Warbler	1	2023
<i>Mareca americana</i>	American Wigeon	2	2023
<i>Megaceryle alcyon</i>	Belted Kingfisher	1	2023
<i>Tyrannus tyrannus</i>	Eastern Kingbird	1	2023
<i>Vireo gilvus</i>	Warbling Vireo	1	2023
<i>Geothlypis trichas</i>	Common Yellowthroat	1	2023
<i>Butorides virescens</i>	Green Heron	2	2023
<i>Icterus galbula</i>	Baltimore Oriole	1	2023
<i>Molothrus ater</i>	Brown-headed Cowbird	3	2023
<i>Quiscalus quiscula</i>	Common Grackle	2	2023
<i>Calidris minutilla</i>	Least Sandpiper	3	2023
<i>Calidris alpina</i>	Dunlin	1	2023
<i>Limnodromus griseus*</i>	Short-billed Dowitcher	1	2023
<i>Polioptila caerulea</i>	Blue-gray Gnatcatcher	1	2023
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	1	2023
<i>Tringa flavipes*</i>	Lesser Yellowlegs	2	2023
<i>Mareca strepera</i>	Gadwall	2	2023
<i>Anthus rubescens</i>	American Pipit	1	2023
<i>Riparia riparia</i>	Bank Swallow	2	2023
<i>Dryocopus pileatus</i>	Pileated Woodpecker	1	2023
<i>Vireo flavifrons</i>	Yellow-throated Vireo	1	2023
<i>Leiothlypis peregrina</i>	Tennessee Warbler	1	2023
<i>Tringa melanoleuca</i>	Greater Yellowlegs	1	2023
<i>Spizella pusilla</i>	Field Sparrow	1	2023
<i>Aix sponsa</i>	Wood Duck	2	2023
<i>Aythya collaris</i>	Ring-necked Duck	2	2023
<i>Corthylio calendula</i>	Ruby-crowned Kinglet	2	2023
<i>Spatula discors</i>	Blue-winged Teal	2	2023
<i>Cistothorus palustris</i>	Marsh Wren	1	2023
<i>Bucephala albeola</i>	Bufflehead	2	2023
<i>Gavia immer</i>	Common Loon	1	2023
<i>Aythya affinis</i>	Lesser Scaup	1	2023
<i>Aythya americana</i>	Redhead	3	2023
<i>Columba livia</i>	Rock Pigeon	19	2023
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	1	2023
<i>Plectrophenax nivalis</i>	Snow Bunting	70	2023
<i>Accipiter cooperii</i>	Cooper's Hawk	1	2022
<i>Calcarius lapponicus</i>	Lapland Longspur	1	2022
<i>Cygnus buccinator</i>	Trumpeter Swan	4	2022
<i>Circus hudsonius</i>	Northern Harrier	1	2022
<i>Icterus spurius</i>	Orchard Oriole	1	2022
<i>Passerina cyanea</i>	Indigo Bunting	1	2022
<i>Troglodytes aedon</i>	House Wren	1	2022

SPECIES NAME	COMMON NAME	COUNT	YEAR OBSERVED
<i>Setophaga virens</i>	Black-throated Green Warbler	1	2022
<i>Porzana carolina</i>	Sora	1	2022
<i>Anas rubripes</i>	American Black Duck	3	2021
<i>Larus argentatus</i>	Herring Gull	55	2021
<i>Falco peregrinus</i>	Peregrine Falcon	1	2021
<i>Anas acuta</i>	Northern Pintail	2	2021
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	2	2021
<i>Contopus virens</i>	Eastern Wood-Pewee	1	2021
<i>Setophaga americana</i>	Northern Parula	1	2021
<i>Cistothorus stellaris</i>	Sedge Wren	1	2021
<i>Acanthis flammea</i>	Common Redpoll	28	2021
<i>Haliaeetus leucocephalus</i>**	Bald Eagle	2	2021
<i>Bucephala clangula</i>	Common Goldeneye	15	2020
<i>Lophodytes cucullatus</i>	Hooded Merganser	31	2020
<i>Gallinago delicata</i>	Wilson's Snipe	1	2020
<i>Bombycilla cedrorum</i>	Cedar Waxwing	3	2020
<i>Podilymbus podiceps</i>	Pied-billed Grebe	2	2020
<i>Thryothorus ludovicianus</i>	Carolina Wren	2	2020
<i>Empidonax traillii</i>	Willow Flycatcher	1	2020
<i>Vireo olivaceus</i>	Red-eyed Vireo	1	2020
<i>Chaetura pelagica</i>*	Chimney Swift	1	2020
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	1	2020
<i>Toxostoma rufum</i>	Brown Thrasher	1	2020
<i>Setophaga ruticilla</i>	American Redstart	3	2020
<i>Setophaga tigrina</i>	Cape May Warbler	1	2020
<i>Setophaga cerulea</i>*	Cerulean Warbler	1	2020
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	1	2020
<i>Empidonax minimus</i>	Least Flycatcher	1	2020
<i>Setophaga magnolia</i>	Magnolia Warbler	1	2020
<i>Setophaga castanea</i>	Bay-breasted Warbler	2	2020
<i>Setophaga pensylvanica</i>	Chestnut-sided Warbler	1	2020
<i>Setophaga striata</i>	Blackpoll Warbler	1	2020
<i>Chroicocephalus philadelphia</i>	Bonaparte's Gull	4	2020
<i>Archilochus colubris</i>	Ruby-throated Hummingbird	1	2020
<i>Buteo platypterus</i>	Broad-winged Hawk	1	2020
<i>Chlidonias niger</i>*	Black Tern	1	2020
<i>Setophaga coronata</i>	Yellow-rumped Warbler	1	2020
<i>Pluvialis squatarola</i>	Black-bellied Plover	1	2020
<i>Calidris melanotos</i>*	Pectoral Sandpiper	1	2020
<i>Larus fuscus</i>	Lesser Black-backed Gull	1	2020
<i>Pandion haliaetus</i>	Osprey	1	2020
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	1	2020
<i>Leiothlypis ruficapilla</i>	Nashville Warbler	1	2020
<i>Seiurus aurocapilla</i>	Ovenbird	1	2020
<i>Sayornis phoebe</i>	Eastern Phoebe	1	2020

SPECIES NAME	COMMON NAME	COUNT	YEAR
			OBSERVED
<i>Zonotrichia albicollis</i>	White-throated Sparrow	1	2020
<i>Accipiter striatus</i>	Sharp-shinned Hawk	1	2020
<i>Phalaropus tricolor</i>	Wilson's Phalarope	1	2020
<i>Progne subis</i>	Purple Martin	1	2020
<i>Spizella passerina</i>	Chipping Sparrow	1	2020
<i>Anas crecca</i>	Green-winged Teal	2	2020
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	1	2020
<i>Sturnella magna</i>	Eastern Meadowlark	1	2020
<i>Certhia americana</i>	Brown Creeper	2	2019
<i>Botaurus lentiginosus</i>	American Bittern	1	2019
<i>Rallus limicola</i>	Virginia Rail	1	2019
<i>Aythya valisineria</i>	Canvasback	1	2019
<i>Cardellina pusilla</i>	Wilson's Warbler	1	2019
<i>Setophaga palmarum</i>	Palm Warbler	1	2019
<i>Tringa semipalmata</i>	Willet	1	2019
<i>Spatula clypeata</i>	Northern Shoveler	5	2019
<i>Euphagus carolinus</i>*	Rusty Blackbird	6	2019

* USFWS Bird of Conservation Concern (BCC)

** Bald and Golden Eagle Protection Act

SOURCE:

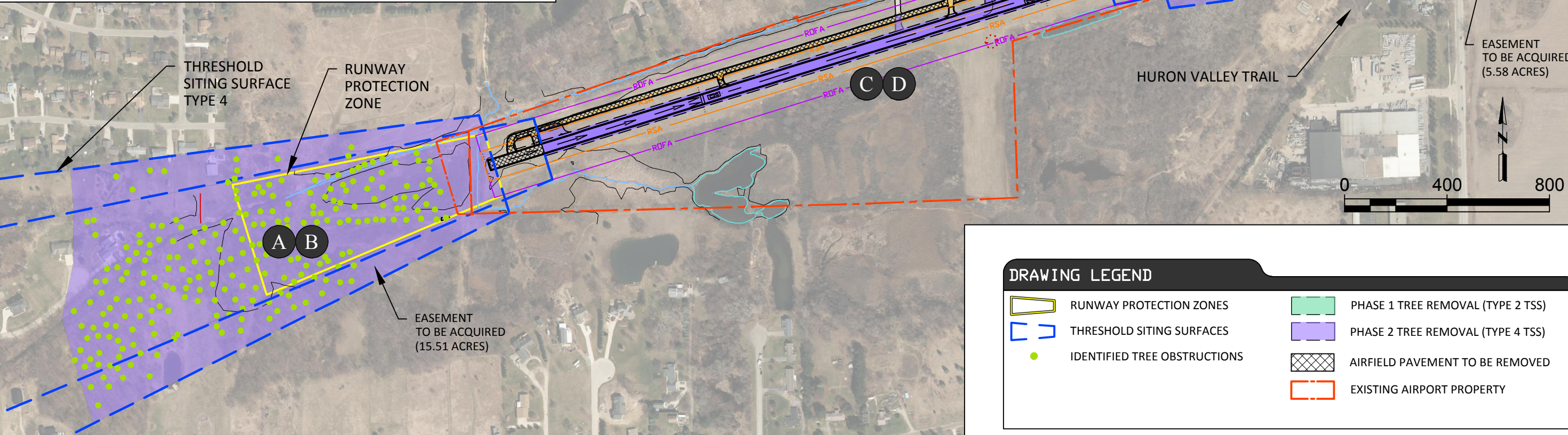
e-Bird Sightings

<https://ebird.org/hotspot/L9068269>

accessed February 9, 2024

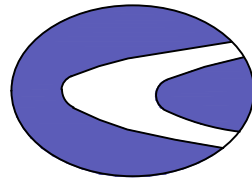
APPENDIX F Proposed Action Maps

MULTI-YEAR DEVELOPMENT PLAN - YEARS 2023-2027	
2023 - Acquire Land for Approaches or RPZ (TSS Type 4), Consultant Costs	A
2024 - Acquire Land for Approaches or RPZ (TSS Type 4), Land Acquisition	A
2024 - Remove Obstructions - Tree Clearing (Design/Construction)	B
2025 - Reconstruct Runway, 8-26 (Design)	C
2025 - Reconstruct Runway Lighting, 8-26 MIRL (Design)	D
2026 - Reconstruct Runway, 8-26	C
2026 - Reconstruct Runway Lighting, 8-26 MIRL	D



DRAWING LEGEND

- | | | | |
|--|------------------------------|--|-----------------------------------|
| | RUNWAY PROTECTION ZONES | | PHASE 1 TREE REMOVAL (TYPE 2 TSS) |
| | THRESHOLD SITING SURFACES | | PHASE 2 TREE REMOVAL (TYPE 4 TSS) |
| | IDENTIFIED TREE OBSTRUCTIONS | | AIRFIELD PAVEMENT TO BE REMOVED |
| | | | EXISTING AIRPORT PROPERTY |

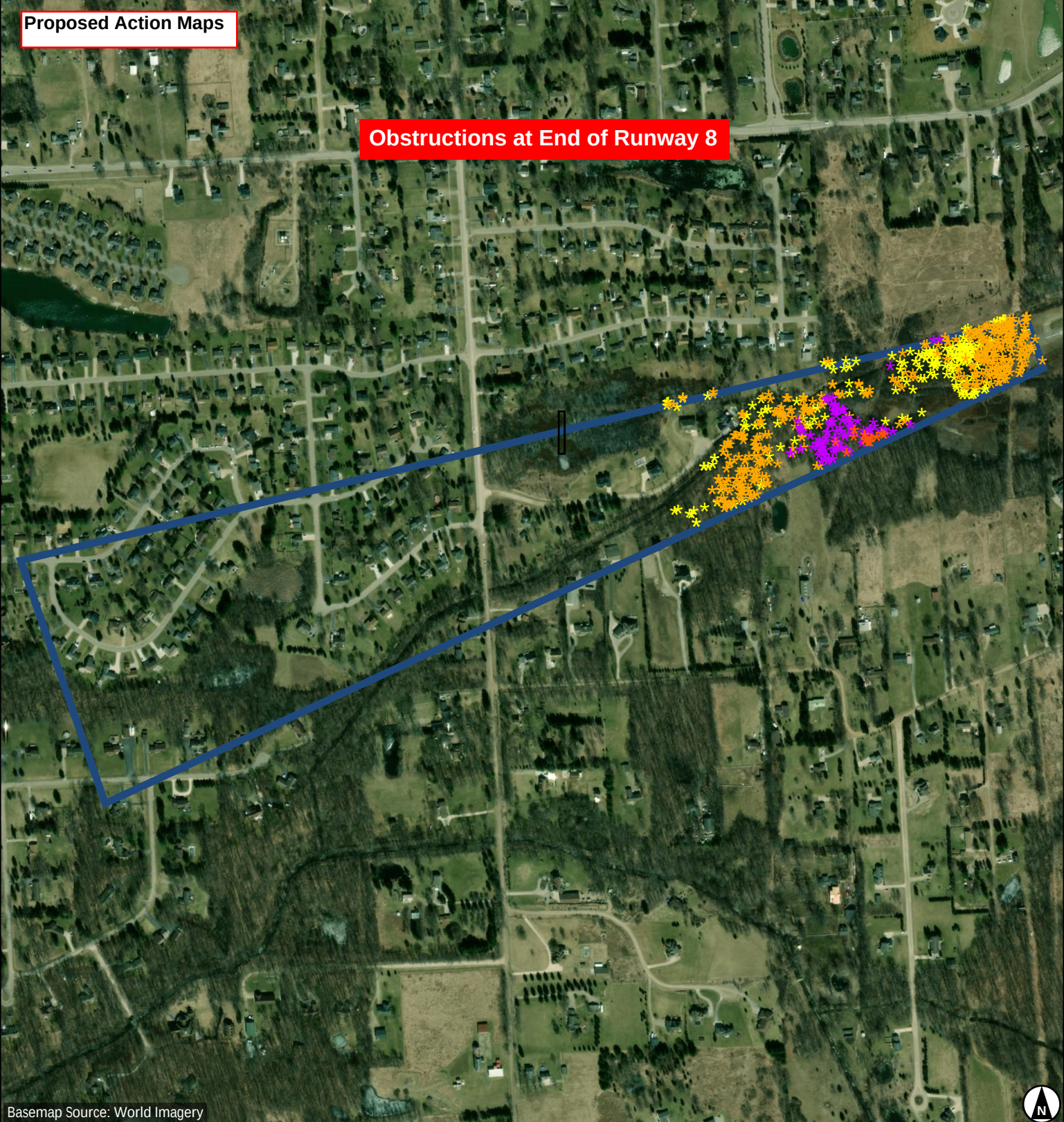


OAKLAND SOUTHWEST AIRPORT
OAKLAND COUNTY, MI

FAA ID: Y47
STATE ID: 63-8

Mead
& Hunt

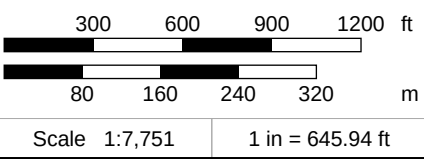
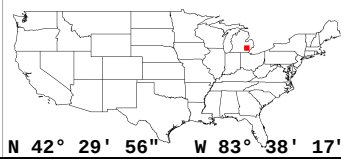
Obstructions at End of Runway 8



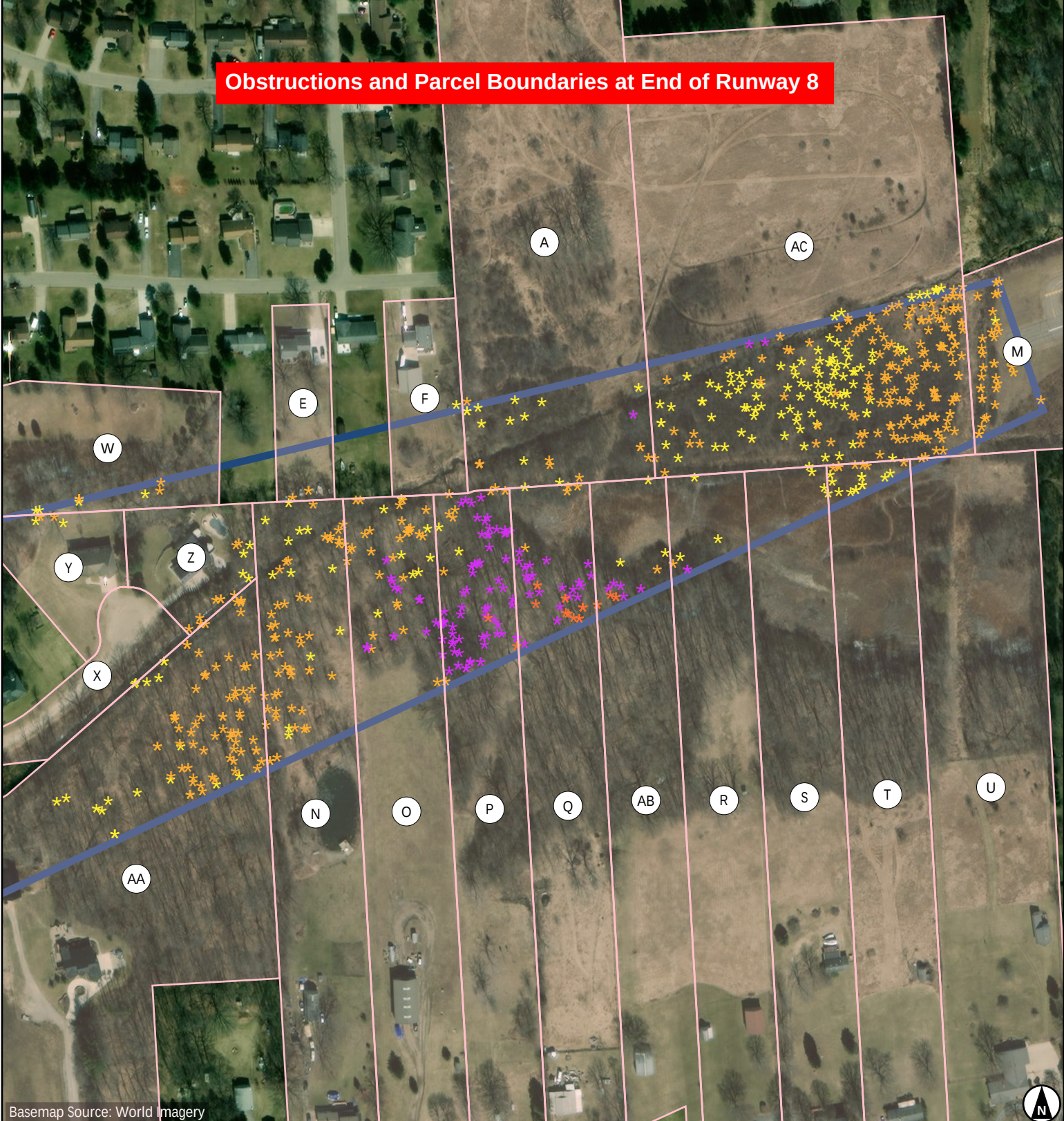
Basemap Source: World Imagery

Surfaces
■ RWY8 - Part 77 (A-Vis) (20:1)

Obstructions
★ Potential (-10' to 0')
★ Low (0' to 25')
★ Medium (25' to 50')
★ High ($\geq 50'$)



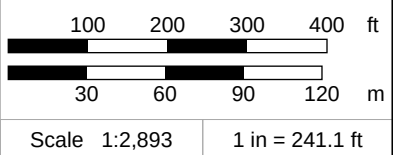
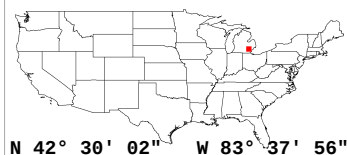
Obstructions and Parcel Boundaries at End of Runway 8



Basemap Source: World Imagery

Surfaces
■ RWY8 - Part 77 (A-Vis) (20:1)
■ Parcels w/ Obstructions

Obstructions
★ Potential (-10' to 0')
★ Low (0' to 25')
★ Medium (25' to 50')
★ High (>= 50')



Obstructions at End of Runway 26



Basemap Source: World Imagery

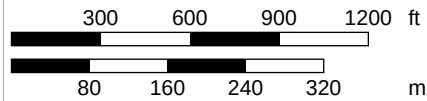
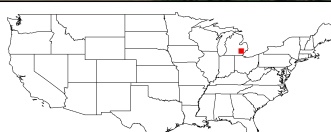


Surfaces

■ RWY26 - Part 77 (A-Vis) (20:1)

Obstructions

- ★ Potential (-10' to 0')
- ★ Low (0' to 25')
- ★ Medium (25' to 50')
- ★ High ($\geq 50'$)



Scale 1:7,751

1 in = 645.94 ft

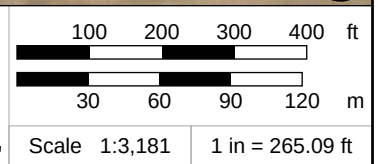
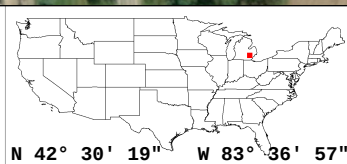
Obstructions and Parcel Boundaries at End of Runway 26



Basemap Source: World Imagery

Surfaces
RWY26 - Part 77 (A-Vis) (20:1)
Parcels w/ Obstructions

Obstructions
Potential (-10' to 0')
Low (0' to 25')
Medium (25' to 50')
High (>= 50')



APPENDIX G 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:

February 08, 2024

Project Code: 2022-0026399

Project Name: Oakland Southwest (Y47) Avigation Easement Acquisition to Support Approach Clearing Short Form EA

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). 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** and **projects that include installing communications towers >450 feet that use guy wires**, 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/eagle-permits> 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: 2022-0026399

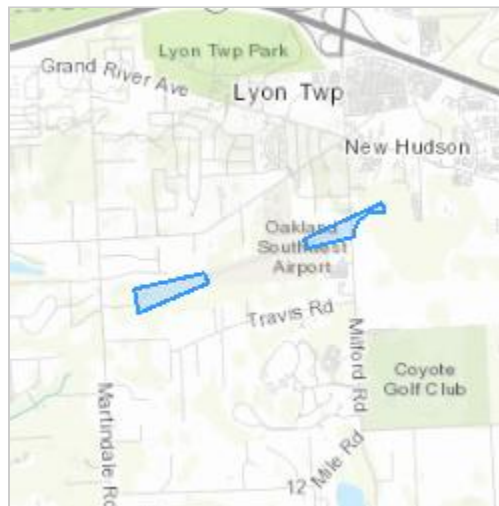
Project Name: Oakland Southwest (Y47) Avigation Easement Acquisition to Support Approach Clearing Short Form EA

Project Type: Clearing Land

Project Description: To better facilitate clear approach and departure paths and to enhance safety of the Airport, a series of easements are being sought for properties that lie within either the Runway Protection Zone (RPZ) or the approach surface at both ends of Runway 8/26. These easements will give Oakland County (SPONSOR), owners of the Airport, the right to maintain the airspace in these areas and allow for the removal of trees penetrating the approach surface.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.500077950000005,-83.63442716136272,14z>



Counties: Oakland County, Michigan

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 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 Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> 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/HEAEVRQNYZED3GUB73HIDRPTXQ/documents/generated/6982.pdf	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane <i>Grus americana</i> Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non- Essential

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> 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/HEAEVRQNYZED3GUB73HIDRPTXQ/documents/generated/5280.pdf	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

-
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 and/or golden eagles in your project area.

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 <i>Haliaeetus leucocephalus</i> 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.

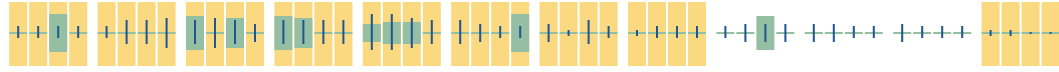
No Data (—)

A week is marked as having no data if there were no survey events for that week.

■ probability of presence ■ breeding season | survey effort — no data

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Bald Eagle
Non-BCC
Vulnerable



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

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 <i>Haliaeetus leucocephalus</i> 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

NAME	BREEDING SEASON
Black Tern <i>Chlidonias niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> 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
Canada Warbler <i>Cardellina canadensis</i> 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
Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 22 to Jul 20
Chimney Swift <i>Chaetura pelagica</i> 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 <i>Ammodramus henslowii</i> 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
Kirtland's Warbler <i>Setophaga kirtlandii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8078	Breeds May 25 to Jul 31
Lesser Yellowlegs <i>Tringa flavipes</i> 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 <i>Calidris melanotos</i> 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 <i>Melanerpes erythrocephalus</i> 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

NAME	BREEDING SEASON
Rusty Blackbird <i>Euphagus carolinus</i> 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
Short-billed Dowitcher <i>Limnodromus griseus</i> 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
Wood Thrush <i>Hylocichla mustelina</i> 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 (|)

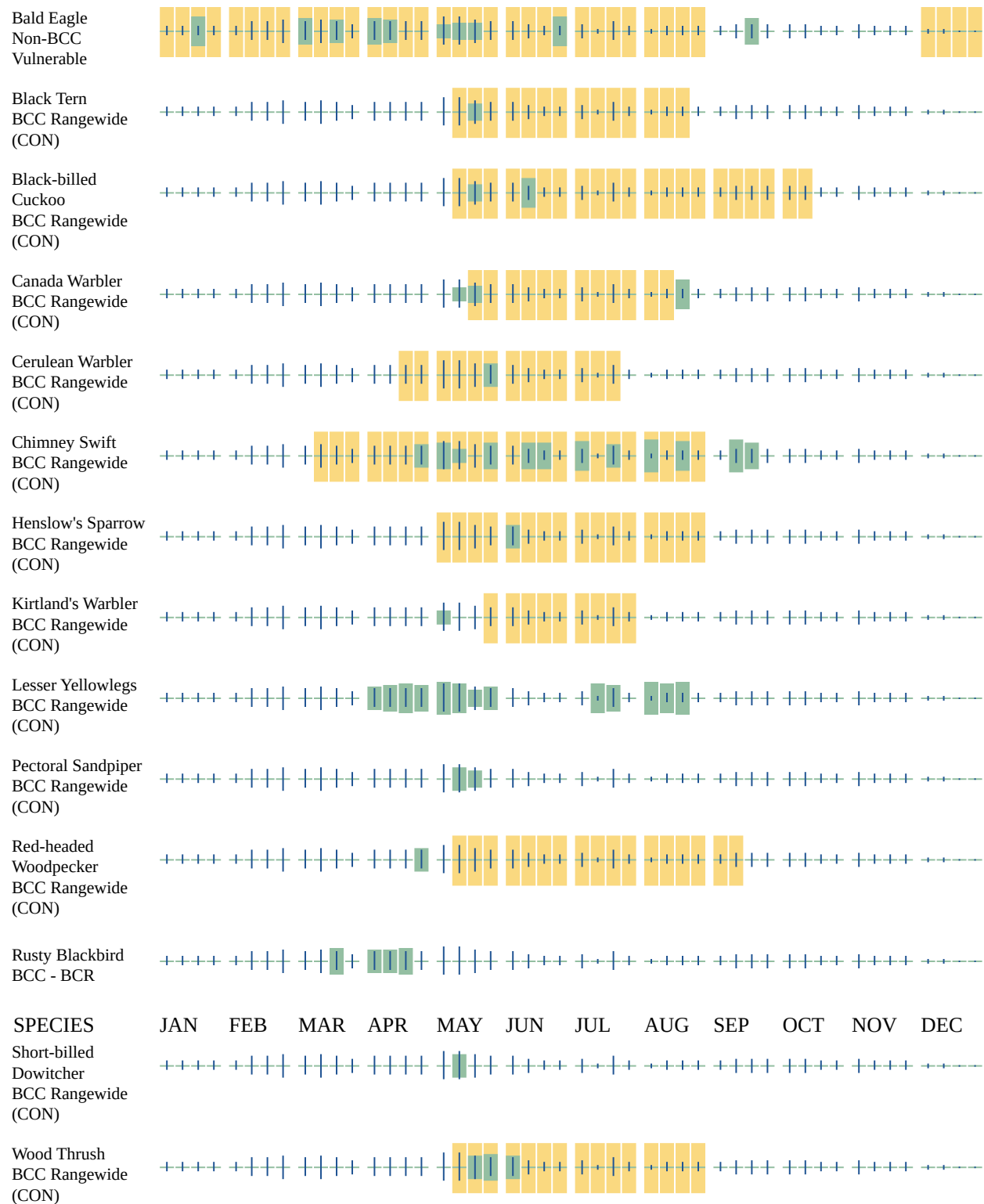
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

■ probability of presence ■ breeding season | survey effort — no data

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC



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-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

WETLANDS

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

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

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

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1/EM1C

RIVERINE

- R5UBH

FRESHWATER EMERGENT WETLAND

- PEM1C

IPAC USER CONTACT INFORMATION

Agency: County of Oakland
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:

February 08, 2024

Project code: 2022-0026399

Project Name: Oakland Southwest (Y47) Avigation Easement Acquisition to Support Approach Clearing Short Form EA

Subject: Verification letter for the project named 'Oakland Southwest (Y47) Avigation Easement Acquisition to Support Approach Clearing Short Form EA' 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 08, 2024** your effect determination(s) for the 'Oakland Southwest (Y47) Avigation Easement Acquisition to Support Approach Clearing Short Form EA' (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) (<i>Sistrurus catenatus</i>)	Threatened	NLAA
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	NLAA
Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate	No effect
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	NLAA
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed	No effect
	Endangered	
Whooping Crane (<i>Grus americana</i>)	Experimental	No effect
	Population, Non-Essential	

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.

Northern Long-eared Bat:

On March 31, 2023, the northern long-eared bat was reclassified from a threatened species to an endangered species (87 FR 73488, 88 FR 4908). This reclassification changed the northern long-eared bat’s protections under the ESA, removing the previous 4(d) rule, as these can only be applied to threatened species. As with the Indiana bat, unpermitted take of northern long-eared bat occurring on or after March 31, 2023, is now prohibited by section 9 of the ESA. To assist with the transition from the 4(d) rule, the Service developed an Interim Consultation Framework that considers projects that are consistent with the 4(d) rule. The [Interim Consultation](#)

[Framework](#) and associated [Standing Analysis](#) only consider and address the effects of covered actions that are expected to occur from March 31, 2023 until April 1, 2024.

Your project is consistent with a “not likely to adversely affect” determination under the Interim Consultation Framework. If new information about your action indicates listed bats may be present and adversely affected in a manner not considered as part of this consultation, please reinstate consultation with our office. For more information on how to avoid adverse effects to listed bats, please see our [project design guidelines](#).

Bats of Conservation Concern:

Implementing protective measures for bats, including both federally listed and non-listed species, indirectly helps to protect Michigan’s agriculture and forests. Bats are significant predators of nocturnal insects, including many crop and forest pests. For example, Whitaker (1995) estimated that a single colony of 150 big brown bats (*Eptesicus fuscus*) would eat nearly 1.3 million pest insects each year. Boyles et al. (2011) noted the “loss of bats in North America could lead to agricultural losses estimated at more than \$3.7 billion/year, and Maine and Boyles (2015) estimated that the suppression of herbivory by insectivorous bats is worth >1 billion USD globally on corn alone. In captive trials, northern long-eared bats were found to significantly reduce the egg-laying activity of mosquitoes, suggesting bats may also play an important role in controlling insect-borne disease (Reiskind and Wund 2009). Mosquitoes have also been found to be a consistent component of the diet of Indiana bats and are eaten most heavily during pregnancy (6.6%; Kurta and Whitaker 1998). Taking proactive steps to help protect bats may be very valuable to agricultural and forest product yields and pest management costs in and around a project area. Such conservation measures include limiting tree clearing during the bat active season (April through October varies by location) and/or the non-volant period (June through July), when young bats are unable to fly, and minimizing the extent of impacts to forests, wetlands, and riparian habitats.

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.

Bat References

- Boyles, J.G., P.M. Cryan, G.F. McCracken, T.H. Kunz. 2011. Economic Importance of Bats in Agriculture. *Science* 332(1):41-42.
- Kurta, A. and J.O. Whitaker. 1998. Diet of the Endangered Indiana Bat (*Myotis sodalis*) on the Northern Edge of Its Range. *The American Midland Naturalist* 140(2):280-286.
- Reiskind, M.H. and M.A. Wund. 2009. Experimental assessment of the impacts of northern long-eared bats on ovipositing *Culex* (Diptera: Culicidae) mosquitoes. *Journal of Medical Entomology* 46(5):1037-1044.
- Whitaker, Jr., J.O. 1995. Food of the big brown bat *Eptesicus fuscus* from maternity colonies in Indiana and Illinois. *American Midland Naturalist* 134(2):346-360.

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.

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://youtu.be/~PFnXe_e02w).

During project implementation, report sightings of any federally listed species, including EMR, to the Service within 24 hours.

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.

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).

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

Any cutting/trimming of potential roost trees for northern long-eared bat (trees ≥ 3 inches in diameter [at breast height] with cracks, crevices, cavities, and/or exfoliating bark) will be limited to the inactive season (September 1 through April 30). Prescribed fire and/or pesticide application will also occur during the inactive season where potential roost trees are present.

Tree cutting/trimming and/or prescribed burning will not clear ≥ 20 contiguous acres of forest or fragment a connective corridor between 2 or more forest patches of at least 5 acres.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

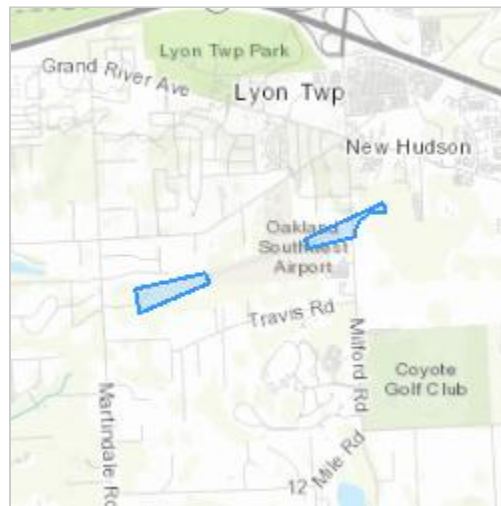
Oakland Southwest (Y47) Avigation Easement Acquisition to Support Approach Clearing Short Form EA

2. Description

The following description was provided for the project 'Oakland Southwest (Y47) Avigation Easement Acquisition to Support Approach Clearing Short Form EA':

To better facilitate clear approach and departure paths and to enhance safety of the Airport, a series of easements are being sought for properties that lie within either the Runway Protection Zone (RPZ) or the approach surface at both ends of Runway 8/26. These easements will give Oakland County (SPONSOR), owners of the Airport, the right to maintain the airspace in these areas and allow for the removal of trees penetrating the approach surface.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.500077950000005,-83.63442716136272,14z>



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 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 communication 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, 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, 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?

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. [Hidden Semantic] Does the action area intersect the whooping crane (ex. Pop) area of influence?

Automatically answered

Yes

26. Have you determined that the action will have no effect on individuals within the whooping crane nonessential experimental population (NEP)?

Yes

27. 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

28. 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?

No

29. Does the action involve removal/modification of a human structure (barn, house or other building) known to contain roosting bats?

No

30. Does the action include removal/modification of an existing bridge or culvert?

No

31. Does the action include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s)?

No

32. Does the action include one or more of the following: (1) tree cutting/trimming, (2) prescribed fire, (3) pesticide (including insecticide and/or rodenticide), and/or (4) herbicide/fungicide application?

Yes

33. Does the action include herbicide application?

No

34. Will the action clear >10 acres of contiguous forest (i.e., connected by 1,000 feet or less) or fragment a riparian or other connective forested corridor (e.g., tree line) between 2 or more forest patches of at least 5 acres? For more information, see [Appendix II](#).

Yes

35. Will the action clear > 20 acres of forest or fragment a connective corridor between 2 or more forest patches of at least 5 acres? For more information, see [Appendix II](#).

No

36. Does the action area contain potential NLEB bat roost trees (trees ≥ 3 inches in diameter [at breast height] with cracks, crevices, cavities and/or exfoliating bark)? For more information, see [Appendix IV](#).

Yes

37. Does the action area contain potential Indiana bat roost trees (trees ≥ 5 inches in diameter [at breast height] with cracks, crevices and/or exfoliating bark)? For more information, see [Appendix III](#).

Yes

38. Does the action include emergency cutting/trimming of hazard trees in order to prevent imminent loss of human life and/or property?

No

39. [Semantic] Is any portion of the action area within 5 miles of a known Indiana or northern long-eared bat hibernaculum?

Automatically answered

No

40. [Hidden Semantic] Does the action area intersect the SE_LP_S Michigan Modeled Bat Habitat?

Automatically answered

Yes

41. Your project intersected modeled bat habitat.

Will all tree cutting/trimming, prescribed fire, and/or pesticide application be restricted to the inactive (hibernation) season for listed bats (that is, conducted during October 1 through April 14)?

Yes

42. Will the action clear >10 acres of modeled bat habitat?

To determine whether it is >10 acres, you can download the shapefile or kmz here: [Indiana bat model](#). For more information on the development of the Indiana bat habitat suitability model, see [Appendix I](#).

No

43. [Hidden Semantic] Does the action area intersect the Indiana bat AOI?

Automatically answered

Yes

44. [Hidden Semantic] Does this project intersect the northern long-eared bat area of influence?

Automatically answered

Yes

45. [Hidden semantic] Does the action intersect the Tricolored bat AOI/SLA/range?

Automatically answered

Yes

46. The tricolored bat was proposed for listing as endangered on September 13, 2022. In Michigan, the tricolored bat was rare pre-white nose syndrome (WNS) and is exceedingly rare post-WNS. The species has been observed in 12 Michigan counties to date, largely during the fall or winter. With very few exceptions, the species has not been observed in Michigan in the summer months, and no maternity colonies have been found. During winter, tricolored bats hibernate in caves, abandoned mines, and abandoned tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

Are you making a no effect determination on this project for the tricolored bat?

Yes

IPAC USER CONTACT INFORMATION

Agency: County of Oakland
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: Wood, Kimberly (EGLE)
Sent: 6/2/2022 4:46:06 PM
To: "bushc@oakgov.com" <bushc@oakgov.com>; "eastlansing@fws.gov" <eastlansing@fws.gov>; "Reitz, Casey (DNR)" <reitzc@michigan.gov>; "Bleisch, Amy (DNR)" <BleischA@michigan.gov>
Cc: "Prysby, Mike (EGLE)" <PrysbyM1@michigan.gov>; "Johnson, Ben (EGLE)" <JohnsonB67@michigan.gov>
Subject: T & E Database Review correspondence for HPH-DWVD-Q4DXM, Y47 Oakland Southwest Airport Obstructions Clearing
Attachments: Trans Preliminary Data Search Response (Word) (1).pdf

Please see attached T & E Database Review correspondence. **If you have any questions, please contact Mike Prysby at 517-899-7316 or PrysbyM1@michigan.gov**

ATTACHMENT NAME:

Trans Preliminary Data Search Response (Word) (1).pdf

ATTACHMENT TYPE:

Adobe Portable Document Format (PDF) compound image



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING



LIESL EICHLER CLARK
DIRECTOR

June 2, 2022

VIA EMAIL

Cheryl Bush – Manager of Aviation
Oakland County, Michigan
6500 Patterson Parkway
Waterford, Michigan 48327

Dear Cheryl Bush:

SUBJECT: Transportation Preliminary Database Search
Project Name: Y47 Oakland Southwest Airport Easement Acquisition and
Obstructions Clearing EA
Site Name: 63 - Y47 Oakland Southwest Airport Obstructions Clearing
Submission Number: HPH-DWVD-Q4DXM
Location: T01N, R07E, Sections 03, 04, 08, 09, and 10

This letter provides the results of the Transportation Preliminary Database Search that was requested on May 6, 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: West Clearing Zone

The following State-regulated 303 wetlands are listed in the database as having been observed within 500 feet of your project area at the following locations (note that additional unmapped wetlands may also be present):

- At the northern border of the clearing extending 1400 LF along Annah Drive, at the southwest edge of the airport extending 1020 LF.

The database search did not indicate any occurrences for EMR habitat, mussels, contaminated sites, and Section 10 waterways.

Location 2: East Clearing Zone

- At the northeast border of the airport, at the southeast border of the airport extending 860 LF.

The database search did not indicate any occurrences for 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. However, your project location is within the range of the Indiana Bat and the bat is considered potentially present wherever suitable habitat exists within their range. You should consult with the 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, MDNR, 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 must 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 or 517-899-7316.

Sincerely,



Michael Prysby, P.E.
Transportation Review Unit
Water Resources Division

cc: USFWS
Casey Reitz, MDNR
Amy Bleisch, MDNR



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING



LIESL EICHLER CLARK
DIRECTOR

May 2, 2022

VIA EMAIL

William Ballard, AICP
Mead and Hunt, Inc.
2605 Port Lansing Road
Lansing, Michigan 48909

Dear William Ballard:

SUBJECT: Early Coordination Review of Proposed Improvements;
Oakland Southwest Airport, New Hudson, Michigan
Oakland County, T01N R07E Sections 3, 4, 8, 9, and 10; Lyon Township
Michigan Department of Environment, Great Lakes, and Energy (EGLE)
Water Resources Division (WRD)

Thank you for your March 11, 2022, early coordination letter regarding the development of a Short Form Environmental Assessment (EA) for improvements in the Airport Layout Plan, and the Runway Protection Zone of Runway 8/26 at the Oakland Southwest Airport. The EA will evaluate potential impact of aviation easements, and obstruction clearing at both ends of Runway 8/26.

The WRD has the following comments:

- a) Davis Creek is present along the entire length of Runway 8/26, and it extends both southwest, and northeast of the runway through the entire proposed aviation easements, and obstruction clearing areas. Any work below the ordinary high water mark of this stream, such as removing stumps and roots from cut trees, will require a permit under Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA).
- b) Any filling, occupation, or grading within the 100-year floodplain of Davis Creek, if it has a drainage area of two square miles or more, will require a permit under the State's Floodplain Regulatory Authority, found in Part 31, Water Resources Protection, of the NREPA.

- c) Available wetland inventories indicate the presence of hydric soils, and potential wetlands along the entire length of Runway 8/26, and through proposed avigation easements, and obstruction clearing areas. Cutting trees to remove obstructions within regulated wetland such that wetland areas are converted from forested wetland to emergent or scrub-shrub wetland will require a permit under Part 303, Wetlands Protection, of the NREPA. All wetland areas within the avigation easements, and obstruction clearing areas should be delineated by a professional wetland consultant, and then submitted to Transportation Review Unit for verification. Our recommendation is to submit a Voluntary Preliminary Review request form in MiWaters for verification of wetland delineations, and discussion of permitting requirements and limitations. Mitigation may be required for any unavoidable wetland conversion, or other impacts, as a result of this project.
- d) A review of our database indicates potential State and/or Federal Threatened and Endangered species Indiana Bat (*Myotis sodalis*), Northern Longeared Bat (*Myotis septentrionalis*), and Eastern Massasauga Rattlesnake (*Sistrurus catenatus*) in T1N, R7E, Sections 3, 4, 8, 9, and 10. It is recommended that you hire a qualified biologist to determine whether your project will impact one of these species. If there are impacts then a permit will be needed from the Michigan Department of Natural Resources, and the U.S. Fish & Wildlife Service.

Thank you for the opportunity to comment on this EA. If you have any questions regarding this letter, please contact me at 517-256-1469; SkubinnaJ@Michigan.gov; or EGLE, WRD, Transportation Review Unit, P.O. Box 30458, Lansing, Michigan 48909.

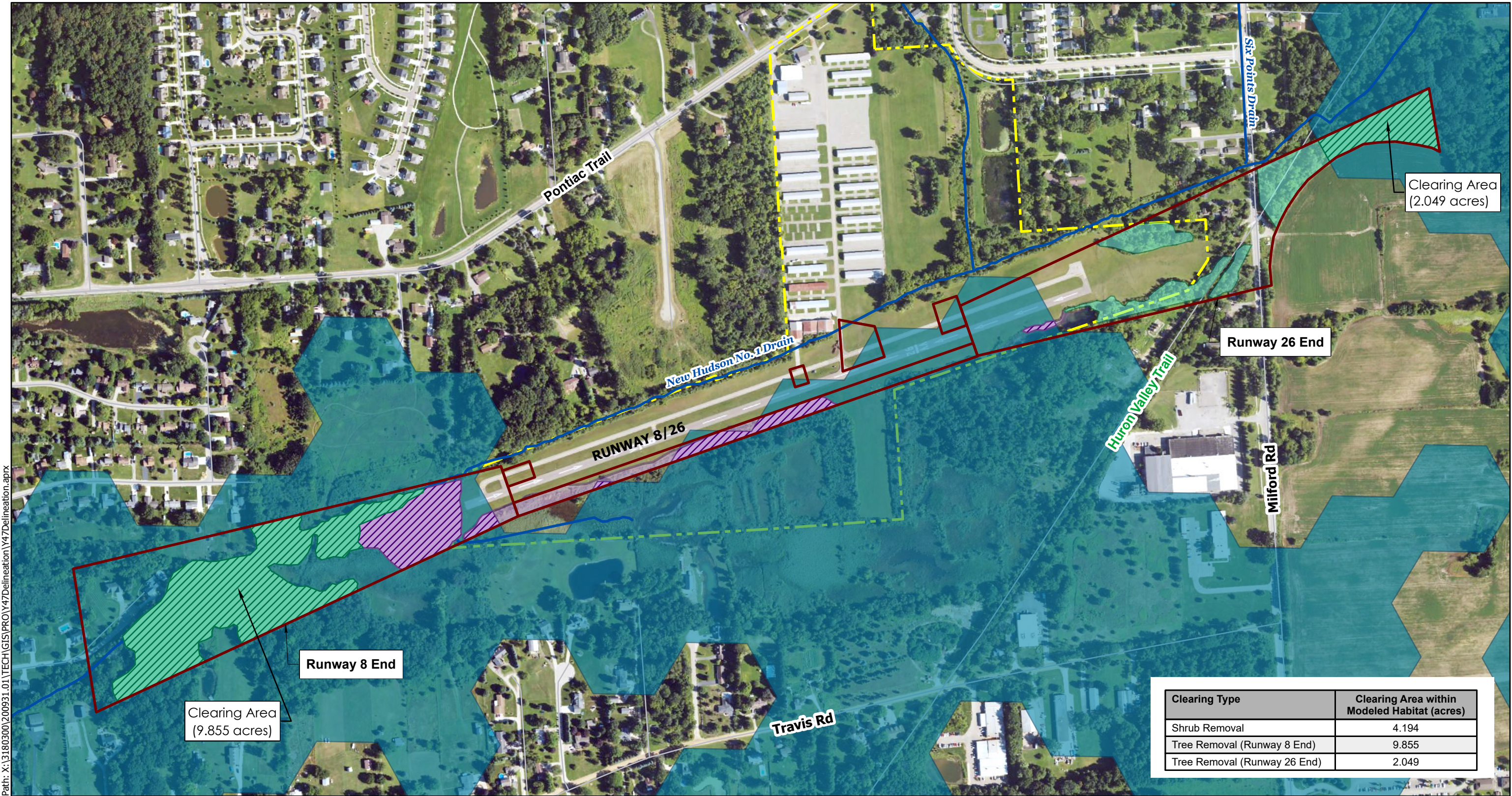
Sincerely,



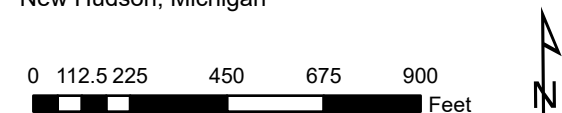
John Skubinna
Environmental Quality Analyst
Water Resources Division

cc: Steve Houtteman, Michigan Department of Transportation

APPENDIX H Modeled Bat Habitat and Habitat Assessment Forms



**Modeled Bat Habitat and
Proposed Clearing Areas**
Oakland Southwest Airport (Y47)
New Hudson, Michigan



Legend

- Project Area of Interest (AOI)
- Airport Property Boundary
- Streams
- USFWS Modeled Bat Habitat

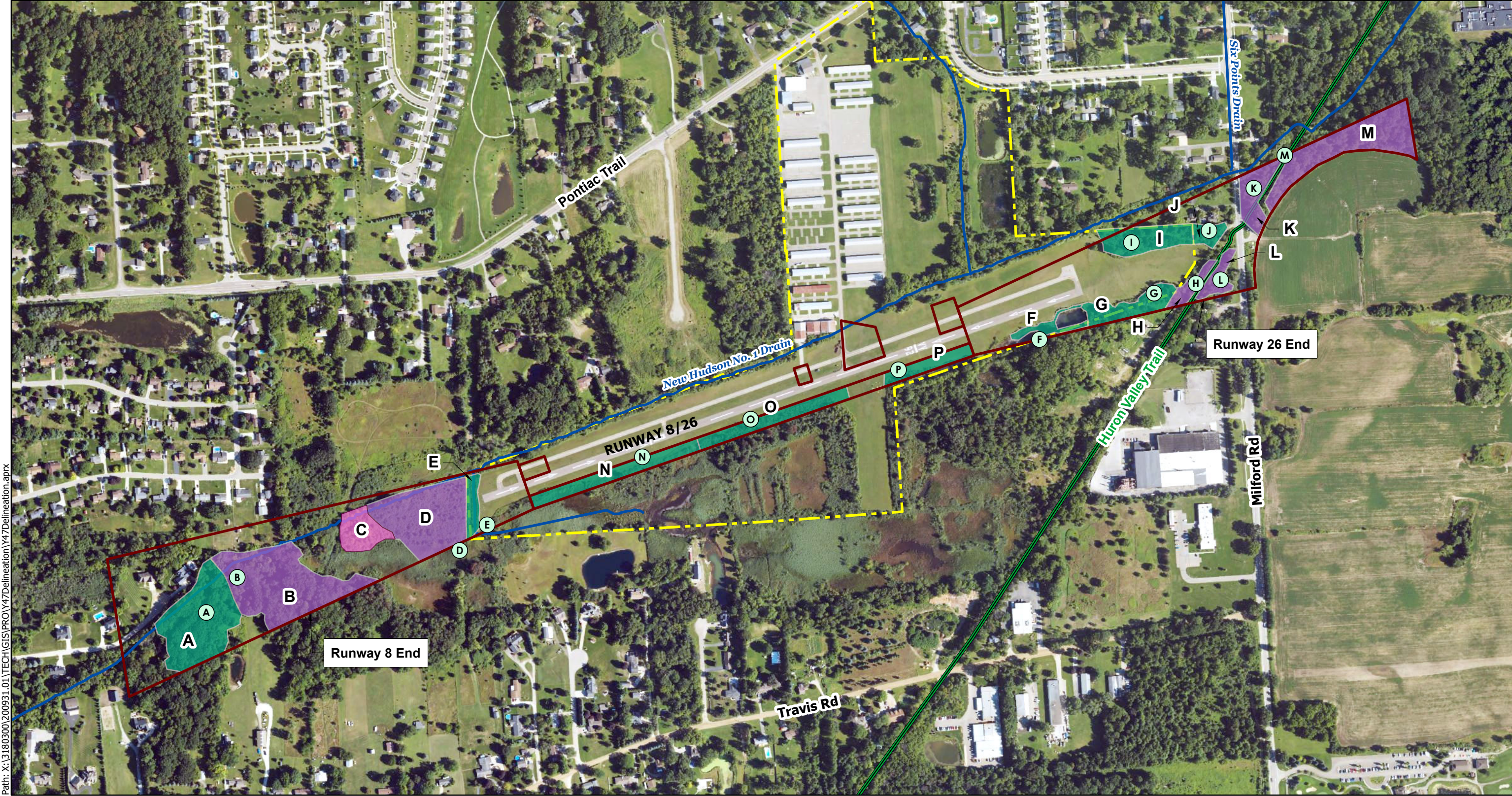
- Clearing Area within Modeled Bat Habitat**
- Clearing Type**
- Shrub Removal
 - Tree Removal

- Clearing Area outside Modeled Bat Habitat**
- Clearing Type**
- Shrub Removal
 - Tree Removal

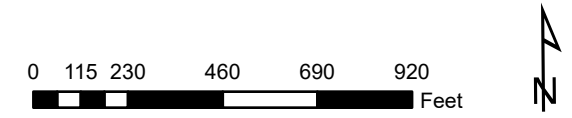
Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
Action Area: 45.0 acres
USGS Quads: Kent Lake and Milford

Data Sources:
1. US FWS Modeled Bat Habitat V1
(<https://www.fws.gov/media/indiana-bat-habitatsuitability-model-michigan-d-key/>)
2. Streams: Oakland County GIS, Access Oakland
3. Base map Image from FSA-NAIP, Oakland County, 2022



Bat Habitat Assessment Areas
Oakland Southwest Airport (Y47)
New Hudson, Michigan



Legend

Project Area of Interest (AOI)	Bat Habitat Assessment Status
Airport Property Boundary	Inaccessible
Multi-use Trail	Partial, Assessed from Public Areas
Streams	Complete
Habitat Assessment Location	

Project Location

T1N, R7E Sections 3, 4, 8, 9, and 10
City of New Hudson
Oakland County, MI
Action Area: 45.0 acres
USGS Quads: Kent Lake and Milford

Data Sources:
1. Streams: Oakland County GIS, Access Oakland
2. Base map Image from FSA-NAIP, Oakland County, 2022

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : A

Date of Assessment: August 15, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
<i>Stream Type (# and length)</i>	N/A	N/A	~430ft
<i>Ponds/Pool (# and size)</i>	N/A		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☒ Yes ☐ No		
<i>Describe existing condition of water resources</i>	Drain. Runs through assessment area. Couple feet of water, appears to be somewhat decent quality. Potentially high waters at various times of year.		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	61-80%	11-20%	1-10%
<i>% Trees w/ exfoliating bark</i>	25	15	2
<i>Dominant Species of Mature Trees</i>	red maple, green ash, red oak, black cherry, other		<i>Other Dominant Species:</i> Shag bark hickory.
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	25	30	45
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	15-20		

Habitat Assessment

Is the habitat suitable for Indiana Bats?

☒ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB?

☒ Yes ☐ No ☐ N/A

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

[Additional comments](#)

Mature forest. High canopy, large DBH trees. Limited understory and very open. Many suitable roost trees. High quality.

Assessment Complete? ☒ Yes ☐ No

Comments:

[Assessment Area Photos](#)



[Photo description](#)

Interior. Open. Many high canopy and large dbh trees. Limited understory. Thick canopy with minimal light filtration. Large dbh trees shown left. View to the west.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Project Name: Oakland Southwest (Y47) Tree Clearing EA

Photo description

Interior. Open. High canopy. View to the west.



Photo description

Interior. Open. Many fallen trees and snags. View to the north.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : B

Date of Assessment: August 15, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

<i>Stream Type (# and length)</i>	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
	N/A	N/A	~425ft
<i>Ponds/Pools (# and size)</i>	N/A		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☒ Yes ☐ No		
<i>Describe existing condition of water resources</i>	Large flowing drainage ditch. Decent quality, signs of high waters at various times of year.		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	61-80%	11-20%	1-10%
<i>% Trees w/ exfoliating bark</i>	20	10	2
<i>Dominant Species of Mature Trees</i>	red maple, green ash, red oak, black cherry		<i>Other Dominant Species:</i>
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	25	30	45
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>		10-15	

Habitat Assessment

Is the habitat suitable for Indiana Bats?

☒ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB?

☒ Yes ☐ No ☐ N/A

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Many suitable roost trees. Open with high canopy. Understory a bit shrubbier compared to Assessment Area A but still open. Canopy dominant with various large DBH trees. Also, high quality. Near drain.

Assessment Complete? ☒ Yes ☐ No

Comments:

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area Photos



Photo description

Interior. Open. Many high canopy, large dbh trees. Many fallen trees. View to the south.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

Interior. Open. Many high canopy, large dbh trees. Many fallen trees. View to the south.



Photo description

Interior. Open. Many large, high canopy trees. View to the south.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : D

Date of Assessment: August 16, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

<i>Stream Type (# and length)</i>	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
	N/A	N/A	~503ft
<i>Ponds/Pools (# and size)</i>	N/A		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☒ Yes ☐ No		
<i>Describe existing condition of water resources</i>	County drain flows through entire area on the north side.		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	None	11-20%	81-100%
<i>% Trees w/ exfoliating bark</i>	0	2	0
<i>Dominant Species of Mature Trees</i>	other		<i>Other Dominant Species:</i> 2 black walnuts identified. Majority of area consists of phragmites, glossy and European buckthorn. Some taller maples on perimeter of area and a few various trees throughout.
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	100	0	
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	0		

Habitat Assessment

Is the habitat suitable for Indiana Bats?

☐ Yes ☒ No ☐ N/A

Is the habitat suitable for NLEB?

☐ Yes ☒ No ☐ N/A

Is the habitat suitable for TCB?

☐ Yes ☒ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Limited roost trees. Near potential forest resources but connects to airport property. Area is predominantly phragmites, glossy and European buckthorn. Invasive dominants. Dense and difficult to move through, too shrubby.

Assessment Complete? ☒ Yes ☐ No

Comments:

Assessment Area Photos



Photo description

Interior. Isolated Black walnut. Near shrubs. View to the southeast.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

Interior. Open. Minimal trees. Invasives dominant. Phragmites and buckthorn. View to the north.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : E

Date of Assessment: August 15, 2023 8:33 AM

Surveyor: Grace Condit, Mead & Hunt

Water Resources

<i>Stream Type (# and length)</i>	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
	N/A	N/A	~295ft
<i>Ponds/Pool (s) (# and size)</i>	N/A		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☒ Yes ☐ No		
<i>Describe existing condition of water resources</i>	Smaller drainage ditch connects to county drain. Clear water with slight sulfuric smell.		

Forest Resources

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

Habitat Assessment

Is the habitat suitable for Indiana Bats?

☐ Yes ☒ No ☐ N/A

Is the habitat suitable for NLEB?

☐ Yes ☒ No ☐ N/A

Is the habitat suitable for TCB?

☐ Yes ☒ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

[Additional comments](#)

No large trees. Predominately shrubby. None larger than 3dbh or taller in height. Not suitable, no trees.

Assessment Complete? ☒ Yes ☐ No

Comments:

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area Photos



Photo description

Exterior. Open. Shrubby and dense. Near end of Runway 8. Extremely cluttered by glossy buckthorn. View to the south.



Photo description

Exterior shrubline along connecting ditch. View to the north.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : F

Date of Assessment: August 14, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

<i>Stream Type (# and length)</i>	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
	N/A	N/A	N/A
<i>Ponds/Pool (# and size)</i>			
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☒ Yes ☐ No		
<i>Describe existing condition of water resources</i>	Open. Standing water. Lots of cattails. Ajaent to both f and g.		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	1-10%	11-20%	61-80%
<i>% Trees w/ exfoliating bark</i>	0	5	2
<i>Dominant Species of Mature Trees</i>	cottonwood, other		<i>Other Dominant Species:</i> Cherry.
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	75	15	10
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	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

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Along property line. Pond takes up majority of area with many understory shrubs and cattails. Impacts predominantly fall within area between pond and property boundary with few tall trees. Scattered trees along bank, some are suitable.

Assessment Complete? ☒ Yes ☐ No

Comments:

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area Photos



Photo description

Behind the pond on Assessment Area F. Shows tree line with few taller trees. On other side of shorter shrub line is pond consisting of mostly cattails. View to the west.



Photo description

Pond on Assessment Area F. Cattail dominates. Trees in back somewhat scattered with a select few within boundary. View to the east.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : G

Date of Assessment: August 14, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
<i>Stream Type (# and length)</i>	N/A	N/A	N/A
<i>Ponds/Pools (# and size)</i>	Adjacent pond.		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☒ Yes ☐ No		
<i>Describe existing condition of water resources</i>	Open pond. Either two small or one large. Located at north end of g.		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	11-20%	41-60%	61-80%
<i>% Trees w/ exfoliating bark</i>	5	10	3
<i>Dominant Species of Mature Trees</i>	box elder, other		<i>Other Dominant Species:</i> Cherry tree. Sumac present but not dominant.
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	85	14	1
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>		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

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Somewhat even distribution of canopy and midstory. Understory dominant. Possibility selectively clear? Leave shrubs.

Assessment Complete? ☒ ☐ No

Comments:

Assessment Area Photos



Photo description

Exterior. Southern end near end of Runway 26. Thicker understory, taller tree line with higher canopy. View to the west.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

Exterior. Near end of polygon. Near end of Runway 26 and open water. Shrubby. lots of cherry. View to the east.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

Open. Exterior. Pond at end of assessment area. Taller trees along water's edge. Still densely packed understory. View to the north.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : H

Date of Assessment: August 15, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

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

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	1-10%	61-80%	11-20%
<i>% Trees w/ exfoliating bark</i>	2	15	2
<i>Dominant Species of Mature Trees</i>	box elder, other		<i>Other Dominant Species:</i> Sassafras, cherry. Included but not dominant- black walnut.
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	80	20	0
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	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

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Some suitable roost trees but not ideal habitat location or conditions. Located between Milford Rd, recreational trail, and houses. Area not fully accessible with observations made from trail.

Assessment Complete? ☐ ☒ No

Comments: Area inaccessible.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area Photos



Photo description

Exterior. Tree line to left in photo. Vine covered understory. Midstory dominant. View to the northeast.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : I

Date of Assessment: August 14, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

<i>Stream Type (# and length)</i>	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
	N/A	N/A	Accessibility ~140ft , length ~475ft
<i>Ponds/Pools (# and size)</i>	N/A		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☒ Yes ☐ No		
<i>Describe existing condition of water resources</i>	Backs up against yards to residential housing. Country drain, flow to southwest. 12 feet wide.		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	1-10%	41-60%	61-80%
<i>% Trees w/ exfoliating bark</i>	2	5	2
<i>Dominant Species of Mature Trees</i>	cottonwood, other		<i>Other Dominant Species:</i> Few cherry. Black walnut. Buckthorn.
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	65	30	5
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	1		

Habitat Assessment

Is the habitat suitable for Indiana Bats?

☒ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB?

☒ Yes ☐ No ☐ N/A

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

[Additional comments](#)

Cluttered, extremely so within understory. Dense understory with messy vines and thick groundcover. Adjacent to residential yards. Somewhat younger trees, few large in height and dbh. Some suitable roost trees. Near county drain. More open near canopy, not open in understory.

Assessment Complete? ☒ ☐ No

Comments:

[Assessment Area Photos](#)



[Photo description](#)

Exterior. Tall cottonwoods. Midstory and understory dominate, lots of shrubs. Tree line near mowed area. View to the southwest.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

Exterior. Tree line. Very shrubby with dense vines covering understory and midstory trees. View to the northeast.



Photo description

Exterior. Tree line. Smaller trees pictures. Cement lining. Messy, cluttered. View to the east.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

Open area in middle. With fringe of midstory trees. View to the south.



Photo description

Interior. Open canopy, extremely cluttered and understory. Scrub/Shrub. Trees mostly along lines. View to the southeast.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : J

Date of Assessment: August 14, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

<i>Stream Type (# and length)</i>	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
	N/A	N/A	Accessibility ~230ft, length ~200ft.
<i>Ponds/Pools (# and size)</i>	N/A		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☐ Yes ☒ No		
<i>Describe existing condition of water resources</i>	N/A		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	1-10%	61-80%	11-20%
<i>% Trees w/ exfoliating bark</i>	1	3	2
<i>Dominant Species of Mature Trees</i>	box elder, cottonwood, big tooth aspen, other		<i>Other Dominant Species:</i> Black walnut. Included but not dominant-sumac.
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	95	5	0
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	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

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Between residential homes, busy road, and county trail. Signs of disturbance. Some young black walnuts, potentially exfoliating. Somewhat suitable roost trees, connection to nearby forest resources. Not ideal habitat conditions.

Assessment Complete? ☒ Yes ☐ No

Comments:

Assessment Area Photos



Photo description

Near county road and busy main road. Dense and cluttered. Shrubby and viney. View to the northwest.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : K

Date of Assessment: August 15, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
<i>Stream Type (# and length)</i>	N/A	N/A	N/A
<i>Ponds/Pool (# and size)</i>	N/A		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☐ Yes ☒ No		
<i>Describe existing condition of water resources</i>	Nearby county drain on north side		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	11-20%	21-40%	41-60%
<i>% Trees w/ exfoliating bark</i>	2	2	0
<i>Dominant Species of Mature Trees</i>	box elder, quaking aspen, other		<i>Other Dominant Species:</i> Black locust. Sumac. One large Siberian elm.
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	85	5	10
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	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

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Dense vines and shrubby understory. Vines continue up trees and limit accessibility to exfoliating bark. Near recreational trail and busy Milford Rd. Not suitable habitat, but with some suitable roost trees. Non-ideal habitat conditions or location.

Assessment Complete? ☐ ☒ No

Comments: Area inaccessible.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area Photos



Photo description

Exterior. Open canopy with dense understory. Many vines cover shrubs and trees, limiting accessibility to exfoliating bark. Tall Siberian elm in back left. View to the northeast.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

Exterior. Taken from roadside/recreational trail. Some taller trees shown, with sumac understory. Bittersweet vines begin after sumac patch. View to the north.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : L

Date of Assessment: August 15, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

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

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	1-10%	61-80%	11-20%
<i>% Trees w/ exfoliating bark</i>	2	10	2
<i>Dominant Species of Mature Trees</i>	box elder, red pine, other		<i>Other Dominant Species:</i> Black walnut. Included but not dominant- Shag bark hickory. Some dying pines. Potentially cherry.
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	80	20	0
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	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

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Some suitable roost trees with non-ideal habitat location and conditions. Located between Milford Rd, recreational trail, and houses. Area not fully accessible. Obvious signs of dumping and throwing of garbage.

Assessment Complete? ☐ ☒ No

Comments: Area inaccessible.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area Photos



Photo description

Exterior. Taken along trail. Along trail, roads, and houses. Dense viney understory. View to the north.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

Exterior. Showcase viney covered understory. View to the north.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : M

Date of Assessment: August 15, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

<i>Stream Type (# and length)</i>	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
	N/A	N/A	N/A
<i>Ponds/Pools (# and size)</i>	N/A		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☒ Yes ☐ No		
<i>Describe existing condition of water resources</i>	County drain to north.		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	11-20%	21-40%	41-60%
<i>% Trees w/ exfoliating bark</i>	10	5	0
<i>Dominant Species of Mature Trees</i>	other		<i>Other Dominant Species:</i> Included- Siberian elm. Large cherries. Black walnut. Box elder
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	75	10	15
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	2		

Habitat Assessment

Is the habitat suitable for Indiana Bats?

☒ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB?

☒ Yes ☐ No ☐ N/A

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Observations made from trail, area inaccessible. Not suitable but with some suitable roost trees. Dense and cluttered. Bittersweet vines dominant. Vines cover shrub packed understory and bark of most trees. Near recreational trail, busy road, and homes.

Assessment Complete? ☐ ☒ No

Comments: Area Inaccessible.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area Photos



Photo description

Exterior. Vine and shrub dominant. Few large elms and cherries. Cluttered. View to the northeast.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : N

Date of Assessment: August 15, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
<i>Stream Type (# and length)</i>	N/A	N/A	N/A
<i>Ponds/ Pools (# and size)</i>	N/A		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☐ Yes ☒ No		
<i>Describe existing condition of water resources</i>	Distance to excavated pond?		

Forest Resources

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

Habitat Assessment

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

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

Is the habitat suitable for TCB? ☐ Yes ☒ No ☐ N/A

Additional comments

Shrub wetland with minimal trees and mostly shrubs. Few green ashes are just ~15ft and smaller than 3 dbh. Very young trees. Understory and wetland veg dominant.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Complete? ☒ ☐ No

Comments:

Assessment Area Photos



Photo description

Exterior. Wetland with tall phrag and cattails dominant. Few trees. Shrubby. View to the northwest.



Photo description

Exterior. Shrubby, wetland. Minimal trees, wetland veg dominant. View to the west.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

End section that connects to O. Exterior, Shrubby, wetland. Open with minimal trees. View to the southeast.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : O

Date of Assessment: August 15, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
<i>Stream Type (# and length)</i>	N/A	N/A	N/A
<i>Ponds/Pool (# and size)</i>	N/A		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☐ Yes ☒ No		
<i>Describe existing condition of water resources</i>	N/A		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	None	21-40%	61-80%
<i>% Trees w/ exfoliating bark</i>	0	2	0
<i>Dominant Species of Mature Trees</i>	green ash, other		<i>Other Dominant Species:</i> Silky dogwood. Glossy buckthorn.
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	100	0	0
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	1		

Habitat Assessment

Is the habitat suitable for Indiana Bats?

☐ Yes ☒ No ☐ N/A

Is the habitat suitable for NLEB?

☐ Yes ☒ No ☐ N/A

Is the habitat suitable for TCB?

☐ Yes ☒ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Shrub and midstory dominant. Limited trees, many young/no exfoliation. Located along runway and backs up to potential forest resources on private property/homesteads but still not ideal conditions. Many small in dbh or below 3".

Assessment Complete? ☒ Yes ☐ No

Comments:

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area Photos



Photo description

Exterior. Section that connects to O. Shrub dominant, with some midstory. View to the southeast.



Photo description

Exterior. Taller line of trees in back fall outside of boundary. Predominantly midstory and shrubby. View to the south.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

Exterior. Some midstory trees. Shrubby. View to the southwest.

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Assessment Area No : P

Date of Assessment: August 15, 2023

Surveyor: Grace Condit, Mead & Hunt

Water Resources

	<i>Ephemeral</i>	<i>Intermittent</i>	<i>Perennial</i>
<i>Stream Type (# and length)</i>	N/A	N/A	N/A
<i>Ponds/Pool (# and size)</i>	1, enter later		
<i>Wetlands (approx.. acres)</i>	<i>Permanent</i>	<i>Seasonal</i>	
<i>Open and accessible to bats?</i>	☒ Yes ☐ No		
<i>Describe existing condition of water resources</i>	Mostly open water. Some phragmites. About 3ft deep, possible barrow pit. Water is clear, reasonable quality.		

Forest Resources

<i>Closure/Density</i>	<i>Canopy (>50 ft)</i>	<i>Midstory (20-50ft)</i>	<i>Understory (<20 ft)</i>
	None	11-20%	61-80%
<i>% Trees w/ exfoliating bark</i>	1	1	0
<i>Dominant Species of Mature Trees</i>	green ash, other		<i>Other Dominant Species:</i> Included but not dominant - Silky dogwood. Glossy buckthorn. One Cherry. One larger Silver maple
<i>Size composition of live trees (%)</i>	<i>Small (3-8 in dbh)</i>	<i>Medium (9-15 in dbh)</i>	<i>Large (>15 in dbh)</i>
	99	1	0
<i>Number of Suitable Snags (enter # or range e.g., 1-5)</i>	0		

Habitat Assessment

Is the habitat suitable for Indiana Bats?

☒ Yes ☐ No ☐ N/A

Is the habitat suitable for NLEB?

☒ Yes ☐ No ☐ N/A

Is the habitat suitable for TCB?

☒ Yes ☐ No ☐ N/A

Project Name: Oakland Southwest (Y47) Tree Clearing EA

Additional comments

Area is mostly mowed grass. Herbaceous with a few isolated trees. Many taller trees with potential forest resources fall outside boundary. One cherry and one taller silver maple, rest of area is herbaceous and shrubby. Suitable roost tree, similar to Assessment Area F.

Assessment Complete? ☒ Yes ☐ No

Comments:

Assessment Area Photos



Photo description

Exterior. West end of Assessment Area P. Herbaceous and shrubby. View to the south.

Project Name: Oakland Southwest (Y47) Tree Clearing EA



Photo description

Exterior. Shrubline along pond. Minimal trees. Many outside boundary. View to the south.



Photo description

Exterior. Pond pictured with shrubs. View to the southeast.
