
Appendix F – Biological Resources



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

Detroit Airports District Office
Metro Airport Center
11677 South Wayne Road, Ste. 107
Romulus, MI 48174

November 12, 2021

Scott Hicks
Field Office Supervisor
U.S. Department of the Interior
Fish and Wildlife Service, Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823

**Re: Section 7 Consultation for the Kalamazoo/Battle Creek International Airport (AZO)
Runway 17/35 Extension and Taxiway C Improvements
Consultation Code: 03E16000-2022-SLI-0131**

Dear Mr. Hicks:

The Kalamazoo/Battle Creek International Airport (AZO), located in the City of Kalamazoo in Kalamazoo County, Michigan, is proposing improvements to Runway 17/35 and Taxiway C.

The proposed project includes the following elements:

- Extend Runway 17 end by 150 feet,
- Extend Runway 35 end by 1,000 feet,
- Realign Taxiway C at the approach end of Runway 17,
- Extend parallel Taxiway B to match Runway 17/35 extensions,
- Relocate an existing railroad spur (owned by Norfolk Southern) on the south end of the Airport, including land acquisition in both Runway 17 and Runway 35 approaches for obstruction clearing),
- Acquire aviation easements/land acquisition in both Runway 17 and Runway 35 approaches for obstruction clearing,
- Clean obstruction(s) in Runway 17/35 approaches,
- Relocate existing aircraft navigational aids (NAVAIDS),
- Conduct noise analysis to lift/modify an existing noise curfew for aircraft operating at night;
- Develop new aircraft approach and departure procedures for Runway 17/35, and
- Complete hazardous materials Phase I and Phase II Environmental Site Assessments (ESA) on acquired property.

The project location is shown on **Attachment A**.

AZO is preparing an Environmental Assessment (EA) to investigate, analyze, and disclose potential environmental impacts associated with the proposed project. The *Biological Resources Report* prepared by Mead & Hunt in support of the EA presents the AZO’s review of biological resources (**Attachment B**).

Early coordination with U.S. Fish and Wildlife Service (USFWS), to the attention of Mr. Matthew Ihnken, was completed May 30, 2019. In addition, Mead & Hunt submitted a determination of effects using the Michigan Endangered Species Determination Key and obtained a Verification Letter on November 5, 2021. Information provided in the USFWS Verification Letter dated November 5, 2021 is presented below (Table 1).

Table 1. Threatened and Endangered Species Effects Determination

Species Name	Common Name	Listing Status	Michigan DKey Determination *
<i>Myotis sodalis</i>	Indiana Bat	Endangered	NLAA
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	Threatened	NLAA
<i>Sistrurus catenatus</i>	Eastern Massasauga rattlesnake	Threatened	NLAA
<i>Neonympha mitchellii mitchellii</i>	Mitchell’s Satyr Butterfly	Endangered	No effect
<i>Epioblasma triquetra</i>	Snuffbox Mussel	Endangered	No effect

* NLAA = “May Affect, Not Likely to Adversely Affect”

Source: USFWS IPaC list, accessed November 2, 2021 by M&H and USFWS Verification Letter dated November 5, 2021. *Consultation Code: 03E16000-2022-SLI-0131, Event Codes: 03E16000-2022-E-00683 and 03E1600-2022-E-00748* (respectively).

The Federal Aviation Administration (FAA) has prepared this determination to address potential effects the proposed project may have on species protected by the Federal Endangered Species Act (ESA) under the jurisdiction of the USFWS as required by Section 7 of the ESA. The FAA is the lead Federal agency for this consultation.

The FAA has reviewed the results of M&H’s investigations (**Attachment B**) and concurs with the effects determination documented in the USFWS Verification Letter on November 5, 2021.

The project may affect potentially suitable summer habitat for the Indiana Bat (*Myotis sodalis*) and the Northern Long-eared Bat (*Myotis septentrionalis*). Tree removals that may be needed for project implementation can be completed outside of the summer bat roosting season (after October 31 and before April 1) to minimize and mitigate any potential impacts to the Indiana Bat or Northern Long-eared Bat and ground disturbance with machinery. Thus, the FAA concludes that the proposed project warrants a determination of “*May Affect, Not likely to Adversely Affect*” for the Indiana Bat and Northern Long-eared Bat.

The project is within the known range of the Eastern Massasauga (*Sistrurus catenatus*) [EMR]. Habitat types within the project area include highly managed airport airfields, sections containing a mixture of emergent and scrub-shrub wetlands, successional uplands, and fallow fields. However, the characteristics and quality of these habitats coupled with significant impediments to potential EMR movement, make these areas unlikely to support EMR. To

minimize and mitigate any potential impacts to EMR, use of recommended erosion control and site restoration materials (“wildlife safe materials”) can be incorporated into construction plans. Additionally, any sightings of EMR will be reported to USFWS. Thus, the FAA concluded that the proposed project warrants a determination of “*May Affect, Not likely to Adversely Affect*” for EMR.

Suitable habitat conditions for the Mitchell’s Satyr butterfly and the Snuffbox mussel are not present within the project area. Thus, the FAA concluded that the proposed project warrants a determination of “*No Effect*” for Mitchell’s Satyr butterfly and the Snuffbox mussel.

In accordance with Section 7 of the ESA, the FAA formally requests USFWS concurrence with the assessment and determination of *May Affect, Not Likely to Adversely Affect for the Indiana Bat, the Northern Long-eared Bat, and the Eastern Massasauga*, and a determination of *No Effect for the Mitchell’s Satyr Butterfly and the Snuffbox Mussel*.

If you have any questions regarding this determination or need additional information, please contact me at guadalupe.cummins-sanchez@faa.gov.

Sincerely,

GUADALUPE
CUMMINS-SANCHEZ

Digitally signed by GUADALUPE
CUMMINS-SANCHEZ
Date: 2021.11.12 14:27:36
-05'00'

Guadalupe Cummins
Environmental Protection Specialist
Detroit Airport District Office

Enclosures:

Attachment A - Project Location Map
Attachment B - Biological Resources Report for *Kalamazoo-Battle Creek Airport Runway 17/35 Extension and Taxiway Improvements* prepared by Mead & Hunt (November 2021).

cc. Eric Anton Bjorkman (AZO)
William Ballard (Mead & Hunt)

William Ballard

From: Galloway, Shaughn L <shaughn_galloway@fws.gov>
Sent: Monday, January 3, 2022 9:44 AM
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Subject: Re: [EXTERNAL] RE: Section 7 Consultation (informal) - Consultation Code: 03E16000-2022-SLI-0131
Attachments: 03E16000-2022-I-0131.JPG

You don't often get email from shaughn_galloway@fws.gov. [Learn why this is important](#)

Hello Guadalupe,

The Michigan Determination Key NLAA Verification Letters become valid following the 30-day verification period. If you were not notified by the Service that the information you provided was incomplete during that time period you are good to go. I apologize if this was not communicated during your Nov. 12 inquiry, but in future scenarios please rely on the guidance provided in the output letters. If you have any additional questions please feel free to give me a call or email.

Best,

Shaughn Galloway
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
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Cc: 'Eric A. Bjorkman' <eabjor@kalcounty.com>; 'William Ballard' <william.ballard@meadhunt.com>
Subject: [EXTERNAL] RE: Section 7 Consultation (informal) - Consultation Code: 03E16000-2022-SLI-0131

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Good afternoon,

I wanted to follow up regarding the request for Section 7 Consultation for the Runway 17/35 Extension project at the Kalamazoo/Battle Creek International Airport (AZO) submitted on November 12, 2021.

Can you please confirm if I can expect a concurrence letter from your office or if the [Verification Letter \(Event Code: 03E16000-2022-E-00748\)](#) dated [November 5, 2021](#) indicating a “Not Likely to Adversely Affect” determination for Eastern Massasauga, Indiana Bat, Northern Long-eared Bat, constitutes USFWS concurrence under Section 7.

Regards,

Guadalupe Cummins
Environmental Protection Specialist

FAA Detroit Airports District Office
11677 S. Wayne Road, Suite 107
Romulus, MI 48174

Cell: 313-282-1297 (during telework)

From: Cummins-Sanchez, Guadalupe (FAA)
Sent: Friday, November 12, 2021 2:42 PM
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Cc: Shaughn_Galloway@fws.gov; Eric A. Bjorkman <eabjor@kalamazoo.com>; William Ballard <william.ballard@meadhunt.com>
Subject: Section 7 Consultation (informal) - Kalamazoo/Battle Creek International Airport

Mr. Hicks,

Please find attached, the Federal Aviation Administration’s (FAA) determination of effects and request for USFWS concurrence under Section 7 of the Endangered Species Act (ESA), for the *Kalamazoo/Battle Creek International Airport (AZO) Runway 17/35 Extension and Taxiway C Improvements* project, in Kalamazoo County, Michigan. The project requires FAA approval, which constitutes a Federal Action.

Previous coordination for this project was conducted under [Consultation Code: 03E16000-2022-SLI-0131](#).

Please let me know if you have any questions or require additional information.

Regards,

Guadalupe Cummins
Environmental Protection Specialist

FAA Detroit Airports District Office
11677 S. Wayne Road, Suite 107
Romulus, MI 48174

Cell: 313-282-1297 (during telework)

Biological Resources

Kalamazoo-Battle Creek Airport Runway 17/35 Extension and Taxiway Improvements

Report prepared for

Kalamazoo County, Michigan

Report prepared by

**Mead
& Hunt**

www.meadhunt.com

November 2021

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Executive Summary

The Kalamazoo/Battle Creek International Airport proposes to extend its primary runway, Runway 17/35 to meet current and future user demand and to correct taxiway geometric deficiencies. Extensions will occur at both ends of the runway under the preferred alternative as well as a matching extension of the parallel taxiway. Other major development items include relocations of an existing railroad spur and existing airfield NAVAIDs, and acquisition of avigation easements and land in both runway approaches for obstruction clearing.

In support of an environmental assessment for the extension of Runway 17/35, a field review for wetlands and biological resources was conducted by Mead & Hunt, Inc. within three separate areas on lands north of Romence Road. Lands to the south of Romence Road, owned by Pfizer, were examined for wetlands and biological resources by Golder and Associates.

This report details biological resources within the proposed project area and a review of threatened and endangered species potentially found within the area of interest. Upland areas on the airfield were dominated by a mix of forbs and introduced grasses typically occurring on and adapted to disturbed conditions.

No rare or unique biotic communities were observed in uplands, wetlands or woodland areas within the project area.

Wetlands identified at the northern end of the airfield form a large complex fed by culverts draining this end of the Airport into three linear drainage catchments or swales. The Central drainage was dominated by trees and shrubs while the North and South drainages were dominated by emergent perennial vegetation.

An area north of Kilgore Road on Airport property is a triangular-shaped parcel dominated by old field vegetation consisting of introduced grasses and a mix of non-native forbs along with small areas of scattered trees. On the southeast side of the project area, a large vacant County-owned parcel is covered by old field vegetation along with remnants of a tree farm. A wooded area to the north of this parcel is located between two commercial facilities and is dominated an even-age stand of upland trees. The Pfizer parcel, located south of Romence Road, contains either developed or farmed areas, small areas of wetland, and two small woodland areas.

A review of threatened and endangered species information provided in the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) database for the project area identified five threatened or endangered species and one candidate species. A review of the State of Michigan Transportation Preliminary Database did not indicate any occurrences for state-listed threatened and endangered species, Eastern Massasauga rattlesnake (EMR) habitat, mussels, contaminated sites, and Section 10 waterways.

An analysis of habitat requirements for the listed species and an assessment of the habitat within the action area determined that the project will have no effect on the Mitchell's satyr butterfly, Rusty patched bumble bee, or the Snuffbox mussel.

Analysis of the proposed action indicates a "may affect, not likely to adversely affect" (NLAA) determination" for the Eastern Massasauga rattlesnake. To minimize potential impacts during construction, use of recommended erosion control and site restoration materials ("wildlife safe materials") can be incorporated into construction plans; any sightings of the snake will be reported to USFWS.

Analysis of the proposed action indicates a "may affect, not likely to adversely affect" (NLAA) determination for the NLEB and the Indiana Bat due to tree removals associated with obstruction clearing within proposed runway approach surfaces. Tree removals can be completed during recommended time periods appropriate for minimizing impacts to any potential bat populations. Specifically, any potential tree removal activities can be accomplished outside the summer roosting season (after October 31 and before April 1) to minimize ground disturbance with machinery and impact to any potential NLEB and Indiana bat populations.

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

Due to the historic agricultural practices associated with these areas, the conversion to residential and commercial land uses, and active vegetation maintenance in upland areas, the AOI provides limited habitat potential for wildlife.

1. Introduction

The Kalamazoo/Battle Creek International Airport (AZO or Airport) is classified by the Federal Aviation Administration (FAA) as a non-hub, commercial service airport that serves the areas of Kalamazoo and Battle Creek and surrounding communities in southwest Michigan. Kalamazoo County owns and operates the Airport covering approximately 806 acres. The Airport is located within the city limits of Kalamazoo in Kalamazoo County, although the boundary between the City of Kalamazoo and the City of Portage runs adjacent to its southern and western borders.

The Airport is at the intersection of Interstate 94 (I-94) and East Kilgore Road. The northern half of the Airport is surrounded by single-family residences and a mix of commercial and general industrial land uses. On the south, the Airport is primarily bordered by general industrial and commercial uses consisting of Pfizer Pharmaceutical (Pfizer) directly south, Mann+Hummel on the southeast, and the Air Zoo Aviation Museum on the west. The southwest portion of airport property holds several open fields and just outside of airport property on the southeast is a County-owned parcel of undeveloped land. The Airport property spans two watersheds: the Portage Creek subwatershed (HUC 12: 040500030604) and the Davis Creek-Kalamazoo River subwatershed (HUC 12: 040500030606), both parts of the Spring Brook-Kalamazoo River Watershed. A project location map is presented in Appendix A.

The airfield at AZO consists of three runways and supporting taxiways. Runway 17/35 is oriented in a north-south direction, is 6,502 feet long and 150 feet wide, and is the primary runway. Runway 5/23 is 3,438 feet long and 100 feet wide, oriented in a northeast-southwest direction, and is the primary crosswind runway. Runway 9/27 is 2,800 feet long and 60 feet wide, oriented in an east-west direction, and serves as a secondary crosswind runway.

As identified in previous planning documents (2013 Master Plan Update and the 2017 Runway Incursion Mitigation (RIM) Study), the Airport has a demonstrated need for a longer primary runway to meet current and future user demand and to also correct taxiway geometric deficiencies. Major proposed development items include the following:

- Extend Runway 17 end by 150 feet
- Extend Runway 35 end by 1,000 feet
- Realign Taxiway C at the approach end of Runway 17
- Extend parallel Taxiway B to match Runway 17/35 extensions
- Relocate an existing railroad spur (owned by Norfolk Southern Railroad) on the south end of the Airport, including land acquisition
- Acquire aviation easements/land acquisition in both Runway 17 and Runway 35 approaches for obstruction clearing
- Clear obstruction(s) in Runway 17/35 approaches
- Relocate existing airfield NAVAIDs
- Conduct noise analysis to lift/modify existing noise curfew for aircraft operating at night
- Develop new aircraft approach and departure procedures for Runway 17/35
- Complete hazardous materials Phase I and Phase II Environmental Site Assessments on acquired property

The preferred alternative project layout is presented in Appendix B. The project proposes to extend the overall length of Runway 17/35. These extensions require the relocation of an existing railroad spur, airfield NAVAIDs, and clearing of obstruction(s) from the new Runway 17/35 approach surfaces.

The relocations at the southern end of the project affect private parcels owned by Pfizer Pharmaceutical who contracted with Golder and Associates for a Biotic Resources Evaluation (Golder, 2019) of the affected portions of that property. This report is provided in Appendix C.

A. Field Reviews and Desktop Assessment

In support of an environmental assessment for the extension of Runway 17/35, a field review for wetlands and biological resources was conducted by Mead & Hunt, Inc. (Mead & Hunt) within an Area of Interest (AOI) covering three separate areas primarily on airport property during two field visits on June 6-7, 2019 and August 19-21, 2019. The AOI comprises 246.4 acres located in Sections 1, 2, 11, and 12, Township 3 South, Range 11 West and Section 35, Township 2 South, Range 11 West, Kalamazoo County, Michigan. A field review of threatened and endangered species for the AOI was also conducted within the same areas.

An obstructions survey, performed by Quantum Spatial (August 2020), identified potential tree obstructions at the Runway 17/35 ends in the approach surfaces for the proposed runway end locations. Potential obstructions, especially at the Runway 17 end, extend into a residential area north of Interstate 94 (I-94) within the proposed approach surface. Fewer trees identified as potential obstructions occur at the Runway 35 within the Pfizer property. The biotic review area, therefore, extends to the north of Interstate 94. No field review of the area north of the Interstate occurred. See Figure 1 for field and biotic review areas.

Golder conducted a site visit covering the Pfizer property on April 15, 2019 during which general site conditions were assessed in conjunction with a wetland assessment and delineation (Golder, 2019). Golder (2019) provides the results of a desktop review of publicly available data sources, review of identified threatened and endangered resources, and field assessment.

This report summarizes the results of Mead & Hunt's field investigation and desktop review, the Pfizer Biotic Resources Evaluation (Golder, 2019) and presents a review of threatened and endangered species that may be present within or near the project area.

Appendices to this report include a Project Location Map (Appendix A), Proposed Preferred Alternative (Appendix B), Biotic Resources Evaluation of Pfizer Property (Appendix C), Topography Map (Appendix D), and U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) Listing of Species and State of Michigan Resource Review (Appendix E).

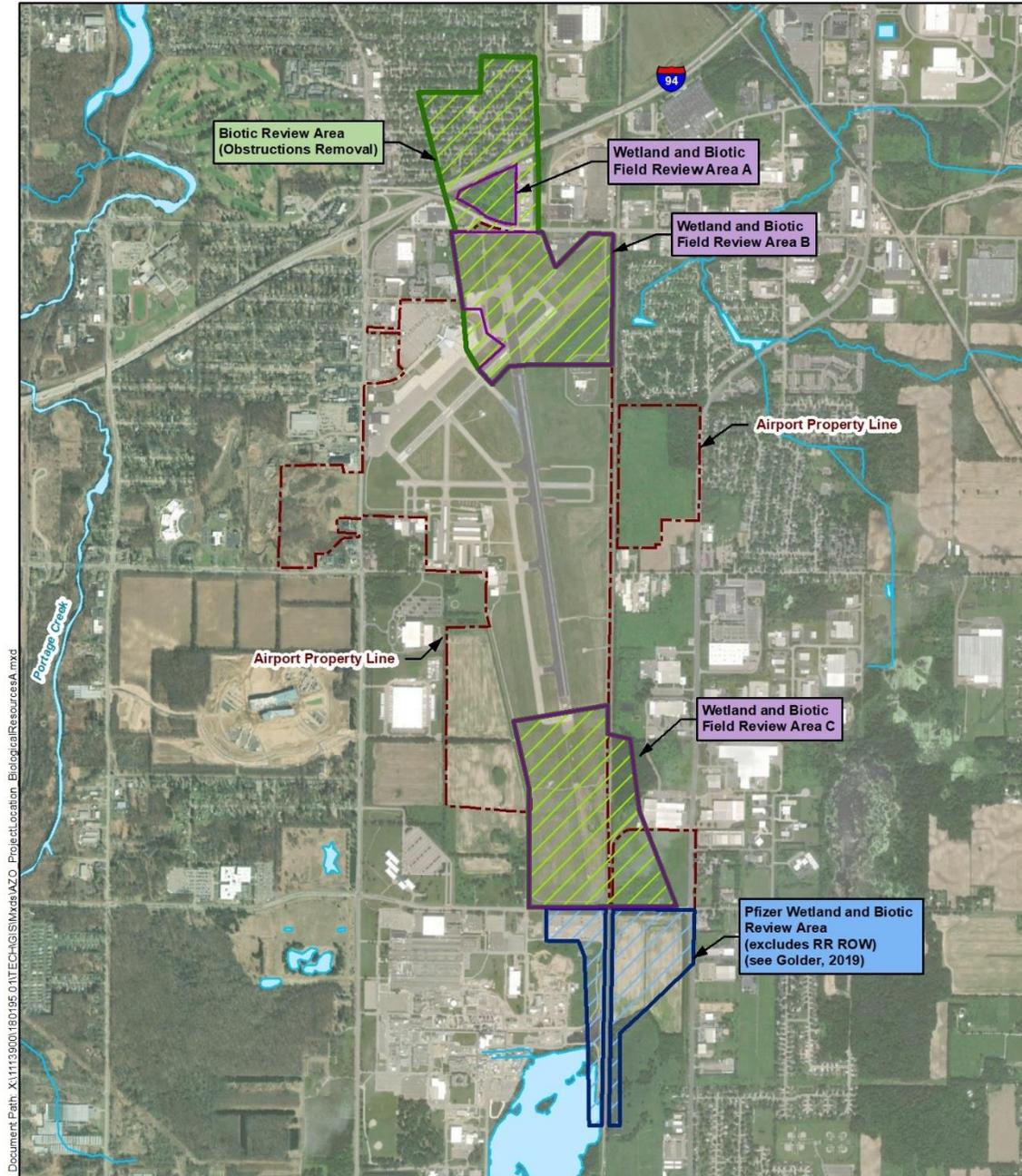
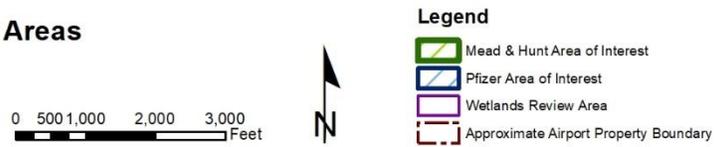


Figure 1.
Biological Resources Review Areas
Kalamazoo/Battle Creek International Airport



B. Site Description

The wetland and biotic AOI covers approximately 246.4 acres on airport property. The AOI is split into three sections. Area A comprises about 12 acres north of East Kilgore Road. Areas B and C are situated at the runway ends: approximately 104.1 acres at the Runway 17 end and 130.34 acres at the Runway 35 end.

A watershed divide occurs along the western side of the Airport with most of airport property falling within the Davis Creek-Kalamazoo River subwatershed. A small portion of the western side of the Airport falls within the Portage Creek subwatershed. Drainage from the northern end of the Airport is directed to the east toward the Davis-Olmstead Drain. See Appendix A for a Project Location Map.

The airfield is relatively flat with little elevation change over the active airside areas. Topography within the active airfield varies from a high of about 870 ft (NAVD 1988) near the terminal and associated parking lot to about 840 ft at the eastern boundary of airport property. From south to north along primary Runway 17/35, the topography remains constant at about 854. Topographic mapping (contour interval 2-foot) from Kalamazoo County is presented in Appendix D.

North of East Kilgore Road is an Airport-owned triangular-shaped parcel (Area A) underlying the Runway 17 Runway Protection Zone (RPZ). A large berm parallels East Kilgore Road, the southern boundary of this parcel, and rises 15-20 feet from the surrounding flatter areas on either side. The berm is dominated by mature box elder. Areas north of the berm contain scattered copses of trees intermixed with old field vegetation.

Nearly all infield areas consist of grasses and forbs and are mown on a regular basis. At the time of field work adequate regrowth was observed, making upland vegetation identifiable in most cases. Upland areas at the Runway 17 end (Area B) were dominated by a mix of grasses and forbs consisting of Kentucky blue grass, orchard grass, white and red clover, English plantain, Bird's-foot trefoil, chickweed, dandelion, Canada thistle, and yarrow. The dominant upland species found at the Runway 35 end (Area C) included a similar turf grass and forb assemblage: orchard grass, Kentucky blue grass, spotted knapweed, dandelion, white and red clover, Canada thistle, Bird's-foot trefoil, and English plantain.

A north-south oriented railroad forms the eastern boundary of the airfield. Part of Area C extends to the east of the railroad at the southeast corner of the airfield. Area C contains parts of three parcels: a large vacant County-owned parcel covered by old field vegetation, the Mann+Hummel south commercial property containing a large warehouse and parking area, and a vacant parcel owned by the City of Portage. The County-owned parcel is fairly flat and is a former tree plantation consisting of scattered spruce and white pine. The western half of the City of Portage parcel is tree-covered while the eastern half is vacant and covered by old field vegetation. To the north of the City of Portage parcel is another parcel owned by Mann+Hummel. An access road spans the City of Portage parcel and connects the two Mann+Hummel properties, splitting the City of Portage parcel in half.

2. Site Observations

A. Infield Areas

All vegetated infield areas consist of grasses and forbs and are mown on a regular basis. At the time of field work, many areas within the AOI had been mowed, with adequate regrowth observed, making upland vegetation identifiable in most cases. Upland areas at the Runway 17 end (Area B) were dominated by a mix of forbs and introduced grasses consisting of Kentucky blue grass, orchard grass, timothy, white and red clover, English plantain, common yarrow, common milkweed, Bird's-foot trefoil, chickweed, dandelion, spotted knapweed, black medick, and Canada thistle (see Figure 2).

The dominant upland species found at the Runway 35 end (Area C) included a similar mix of species: Kentucky blue grass, orchard grass, spotted knapweed, dandelion, red and white clover, Canada thistle, and English plantain.

Upland herbaceous and graminoid vegetation within the infield areas of the AOI consisted of:

- Kentucky blue grass (*Poa pratensis*: FACU),
- Orchard grass (*Dactylis glomerata*: FACU),
- Timothy (*Phleum pratense*: FACU),
- Dandelion (*Taraxacum officinale*: FACU),
- English plantain (*Plantago lanceolata*: FACU),
- Common yarrow (*Achillea millefolium*: FACU),
- Common milkweed (*Asclepias syriaca*: UPL),
- Bird's-foot trefoil (*Lotus corniculatus*: FACU),
- Chickweed (*Stellaria media*: FACU),
- Red clover (*Trifolium pratense*: FACU),
- White clover (*Trifolium repens*: FACU),
- Black medick (*Medicago lupulina*: FACU),
- Spotted knapweed (*Centaurea stoebe*: FACU), and
- Canada thistle (*Cirsium arvense*: FACU).

Four wetlands were identified in Area B at the northern end of the airfield. Three of these wetlands were associated with drainage features (Wetlands 1A, 1B, and 2) and Wetland 3. The dominant feature of this area located to the southeast of the Runway 23 end, is a large complex fed by culverts draining the northern end of the Airport into three linear drainage catchments or swales that drain to the David-Olmsted Drain (see Figures 3 - 5). The Central drainage was dominated by trees and shrubs while the North and South drainages were dominated by emergent perennial vegetation. Standing water was present throughout each of these drainages. Hydrophytic vegetation in these wetlands consisted of:

- Reed canary grass (*Phalaris arundinacea*: FACW),
- Fox sedge (*Carex vulpinoidea*: OBL),
- Porcupine sedge (*C. hystericina*: OBL),
- Fringed sedge (*C. crinita*: OBL),

- Pointed broom sedge (*C. scoparia*: FACW),
- Woolgrass (*Scirpus cyperinus*: OBL),
- Dark-green bulrush (*S. atrovirens*: OBL),
- Soft-stem rush (*Schoenoplectus tabernaemontani*: OBL),
- Soft rush (*Juncus effusus*: OBL),
- Common spike-rush (*Eleocharis palustris*: OBL),
- Straw-colored flat sedge (*Cyperus strigosus*: FACW),
- Avens (*Geum aleppicum*: FAC),
- Late goldenrod (*Solidago gigantea*: FACW),
- Boneset (*Eupatorium perfoliatum*: FACW),
- Riverbank grape (*Vitis riparia*: FAC),
- White Panicked American-Aster (*Symphotrichum lanceolatum*: FACW),
- Purple loosestrife (*Lythrum salicaria*: OBL),
- Cattail (*Typha angustifolia*: OBL),
- Vervain (*Verbena hastata*: FACW),
- Arrow-leaf tearthumb (*Persicaria sagittata*: OBL),
- Buttonbush (*Cephalanthus occidentalis*: OBL),
- Elderberry (*Sambucus nigra [canadensis]*: FACW),
- Black willow (*Salix nigra*: OBL),
- Peach-leaf willow (*S. amygdaloides*: FACW),
- Sandbar willow (*S. interior*: FACW),
- Cottonwood (*Populus deltoides*: FAC),
- Silver maple (*Acer saccharinum*: FACW),
- Box elder (*A. negundo*: FAC), and
- Red osier (*Cornus alba*: FACW).



Figure 2. Runway 17 End. View to the south.



Figure 3. Wetland 3, North drainage, General site. View to the northwest.



Figure 4. Wetland 3, Central drainage, General site. View to the west.



Figure 5. Wetland 3, South drainage, General site. View to the southwest.

Wetlands and adjacent uplands appear to provide habitat for various wildlife, including frogs, toads, and other herpetofauna as well as small mammals. In uplands, regular mowing impacts suitable habitat for birds and no rare or unique plant communities were observed. Culvert input from airport drainage likely affects water quality and areas of stagnant water with algal bloom were noted in the Central Drainage, likely due to nutrient inputs and poor off-site drainage.

B. Area A (North of East Kilgore Road)

Area A, a triangular-shaped parcel located north of the airfield, is marked by a large berm dominated by box elder that parallels East Kilgore Road which forms the parcel's south border. The area is bounded on the north by I-94 and on the east by a parking lot for a truck rental facility. Aside from the berm, the terrain is level. North of the berm is a plant assemblage consistent with old field vegetation characteristic of disturbed environments: yarrow, Canada goldenrod, ox-eye daisy, Kentucky blue grass, riverbank grape, hawkweed (yellow and orange), whorled milkweed, sheep sorrel, Indian hemp, wild strawberry, and blackberry. Scattered trees consist of hawthorn, autumn olive, European white birch, black locust, honey locust, sumac, and red maple (see Figures 6 and 7). No wetlands were delineated in this area. No rare or unique plant communities were observed. A list of species found in this area is provided below:

- Yarrow (*Achillea millefolium*: FACU),
- Canada goldenrod (*Solidago canadensis*: FACU),

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- Ox-eye daisy (*Leucanthemum vulgare*: UPL),
- Kentucky blue grass (*Poa pratensis*: FACU),
- Orange hawkweed (*Hieracium aurantiacum*: UPL),
- Yellow hawkweed (*Hieracium caespitosum*: UPL),
- Whorled milkweed (*Asclepias verticillata*: UPL),
- Sheep sorrel (*Rumex acetosella*: FACU),
- Indian hemp (*Apocynum cannabinum*: FAC),
- Wild strawberry (*Fragaria virginiana*: FACU),
- Blackberry (*Rubus allegheniensis*: FACU),
- Riverbank grape (*Vitis riparia*: FAC),
- Hawthorn (*Crataegus crus-galli*: FAC),
- Autumn olive (*Elaeagnus umbellata*: FACU),
- European white birch (*Betula pendula*: (FACU),
- Black locust (*Robinia pseudoacacia*: FACU),
- Honey locust (*Gleditsia triacanthos*: FAC),
- Sumac (*Rhus typhina*: UPL),
- Red Maple (*Acer rubrum*: FAC), and
- Box elder (*Acer negundo*: FAC).

Trees in this area may provide potentially suitable habitat for the Indiana Bat (*Myotis sodalis*) or the Northern Long-eared Bat (*Myotis septentrionalis*) (NLEB). However, trees are scattered across the area in small patches and the proximity of noise and traffic along major highways on the south and north likely would deter use of this area by either bat.



Figure 6. Area A, north of the berm. View to the west.



Figure 7. Area A, north of the berm. View to the southwest.

C. Area C outside airfield

East of the railroad at the intersection of Romence Road and Sprinkle Road, a large vacant County-owned parcel is covered by old field vegetation along with remnants of a tree farm. Rows of spruce and white pine were interspersed with open areas of old field (see Figure 8) vegetation characteristic of disturbed environments. Herbaceous and woody vegetation is listed below:

- Kentucky blue grass (*Poa pratensis*: FACU),
- Smooth brome (*Bromus inermis*: UPL),
- Quack grass (*Elymus repens*: FACU),
- Yarrow (*Achillea millefolium*: FACU),
- Canada goldenrod (*Solidago canadensis*: FACU),
- Daisy fleabane (*Erigeron annuus*: FACU),
- Common milkweed (*Asclepias syriaca*: UPL),
- Canada thistle (*Cirsium arvense*: FACU),
- Bull thistle (*Cirsium vulgare*: FACU),
- Hoary alyssum (*Berteroa incana*: UPL),
- Queen Anne's lace (*Daucus carota*: FACU),
- Common St. John's-wort (*Hypericum perforatum*: UPL),
- English plantain (*Plantago lanceolata*: FACU),
- Spotted knapweed (*Centaurea stoebe*: UPL),
- Mullein (*Verbascum thapsus*: UPL),
- White pine (*Pinus strobus*: FACU), and
- Spruce (*Picea* sp.).



Figure 8. South of Mann+Hummel Parcel. View to the west.

Trees within this area are dominated by white pine and spruce, species unsuitable as roost trees for Indiana or Northern long-eared bats. The old field vegetation, covered by a predominance of non-native species adapted to disturbed conditions, would support a variety of small mammals and birds.

D. Area C Wooded Area

The portion of the City of Portage-owned parcel within the AOI is bounded by the railroad on the west and a connecting road on the east between the two Mann+Hummel facilities and is covered by an even-age stand of primarily sweet and black cherry trees (*Prunus avium*: FACU and *P. serotina*: FACU). Along the western edges of this area, cottonwood (*Populus deltoides*: FAC), box elder (*Acer negundo*: FAC), and paper birch (*Betula papyrifera*: FACU) were observed. The understory is dominated by pokeweed (*Phytolacca americana*: FACU), burnweed (*Senecio hieraciifolius*: FACU), greenbrier (*Smilax rotundifolia*: FAC), three-seeded mercury (*Acalypha rhomboidea*: FACU), and jumpseed (*Persicaria virginiana*: FAC). A small depressional wetland was delineated within this larger area and was dominated by Lady's thumb (*Persicaria maculosa*: FAC).

The depressional wooded area has had a long history of modification beginning with the construction of a north-south road splitting this area in two sometime before 1938 and which later becomes the bed for the railroad. Later construction of buildings and associated grading, conversion to agriculture, woody encroachment, and construction of a connecting access road on the east side have resulted in significant hydrological alterations to this area. Vegetation is now dominated by facultative upland tree species. No evidence of culvert inputs was found during field work, leaving surface runoff and precipitation as the only sources of hydrology to the area which presently does not support hydrophytic vegetation (see Figure 9).



Figure 9. Area, wooded area. City of Portage Parcel. View to the west.

This forested area is covered by cherry, with box elder, birch, and cottonwood on the fringe along the railroad. This area contains habitat suitable to the Indiana bat and Northern long-eared bat. Some trees were large enough to provide suitable roosting habitat. Suitable habitat for small mammals and birds is

present. No rare or unique plant communities were observed. The even-age stand characterizes the woody encroachment overtaking this area as a result of land conversion and development around this area.

E. Pfizer Parcel Review

Golder (2019) presents the results of field review and assessment of the Pfizer property (approximately 77.0 acres) located to the south of the Airport. Refer to Appendix C for the full report. In summary, most lands on the property are either developed or farmed (56.4 acres). Small areas of wetland total approximately 10.4 acres and two small woodland areas cover 6.2 acres (Golder, 2019: Table 3).

In emergent wetland areas, vegetation was characterized by “common reed (*Phalaris arundinacea*) with some willows (*Salix* sp.) and other shrubs along the edges” (Golder, 2019: 6). Emergent/scrub-shrub vegetation was “characterized by willow, common reed, blue joint grass (*Calamagrostis canadensis*), and sedges (*Carex* sp.) (Golder, 2019: 6). Both habitat types could provide suitable habitat for frogs, toads, and other herpetofauna, small mammals, and songbirds.

The disturbed woodland contains “cottonwood (*Populus deltoides*), dead and dying green ash (*Fraxinus pennsylvanica*), common buckthorn (*Rhamnus cathartica*), honeysuckle (*Lonicera tartarica*), riverbank grape (*Vitis riparia*), yellow avens (*Geum aleppicum*), motherwort (*Leonurus cardiaca*), yarrow (*Achillea millefolium*), Queen-Anne's-lace (*Daucus carota*), smooth brome (*Bromus inermis*), bluegrass (*Poa pratensis*), and switchgrass (*Panicum virgatum*)” (Golder, 2019: 5-6). The mature woodland, on the other hand, contains mature “red maple (*Acer rubra*), black cherry (*Prunus serotina*), box elder, and pin oak with a relatively sparse understory.” Both wooded areas appear to contain habitat suitable to the Indiana bat and the NLEB.

No rare or unique biotic communities were observed in either emergent wetlands or woodland areas.

F. Tree Removal Areas

An obstruction analysis (Quantum Spatial, 2020) identified potential tree obstructions in the proposed approach surfaces for the preferred alternative. Obstructions penetrating an approach surface are required to be removed to provide safe aircraft operating conditions. The preferred alternative project layout provided in Appendix B shows locations of identified potential obstructions. These generally are small, dispersed groupings of trees, less than five acres in size. At the Runway 17 end, the residential area north of I-94 contains many individual and dispersed trees while Area A (between I-94 and Kilgore Road) contains two small areas: a line of trees along the berm and a small copse just south of I-94.

The analysis of the proposed approach surface for the Runway 35 end identified small areas (<5 acres in size) along the railroad spur, along a field edge adjacent to Romence Road, and forested area at the south edge of the field along Sprinkle Road.

3. Biological Assessment

A. Regulatory Background

(1) Endangered Species Act

Section 7 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 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.

(2) Natural Resources and Environmental Protection Act

Under Part 365 of the 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.

B. Listed Species

(1) Federal

Mead & Hunt accessed and reviewed threatened and endangered species information provided in the U.S. Fish and Wildlife Service’s (USFWS) Information for Planning and Consultation (IPaC) database for the project (<https://ecos.fws.gov/ipac/>, accessed November 2, 2021). Appendix E provides the Federal list of threatened and endangered species that may occur in the AOI. No critical habitat under USFWS jurisdiction was found in the project area.

Also provided in Appendix E is USFWS consultation for the identified listed species. The IPaC tool provides a determination key (DKey) for species identified in Michigan. Table 1 summarizes the species identified in the project area and the results of the Michigan determination key.

Table 1. IPaC Species List

Species Name	Common Name	Status	USFWS Determination
<i>Myotis sodalis</i>	Indiana Bat	Endangered	NLAA*
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	Threatened	NLAA*

Table 1. IPaC Species List

Species Name	Common Name	Status	USFWS Determination
<i>Sistrurus catenatus</i>	Eastern Massasauga rattlesnake	Threatened	NLAA*
<i>Neonympha mitchellii mitchellii</i>	Mitchell's Satyr Butterfly	Endangered	No effect
<i>Epioblasma triquetra</i>	Snuffbox Mussel	Endangered	No effect
<i>Danaus plexippus</i>	Monarch Butterfly	Candidate	

*May affect, Not likely to adversely affect

(2) State of Michigan

Mead & Hunt requested a Transportation Preliminary Database Search from the EGLE. This database search revealed no occurrences of State-listed threatened and endangered species. No Tier 1 Eastern Massasauga Rattlesnake (EMR) designated habitat is present within the project area. The database search did not indicate any occurrences of Michigan Mussel Protocol Group 1/Group 2 (state) or Group 3 (federal) threatened and endangered mussel nor known contamination sites. While no known occurrences of the Indiana bat or NLEB were noted, the project location is within the range of the Indiana bat (Appendix E).

C. Northern Long-eared Bat (NLEB) and Indiana Bat

(1) Habitat Requirements

The NLEB and Indiana bat have similar, overlapping habitat requirements. Both bats hibernate in winter in caves and mines, preferring the constant temperatures, high humidity, and no air currents present in these landscape features. Summer finds them 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. Tree species used by Indiana bats as roosts may include “ash, elm, hickory, maple, oak, or poplar, although any tree that retains large, thick slabs of peeling bark may be suitable” (USFWS, 2018a). Larger trees (i.e. >5 inches dbh) also are indicative. The NLEB seems to be more flexible in selecting roost trees, with the suitability of bark or presence of cavities or crevices being important.

“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 with generally more canopy cover than Indiana bats. 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 preferred by the Indiana bat.

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, 2018b)

(2) Habitat Assessment

The Airport is surrounded by residential, commercial, or light industrial land uses. Two areas of tree cover are located within the AOI: Area A, north of East Kilgore Road and a portion of Area C in the depressional wooded area on the City of Portage parcel. In Area A, a copse of black locust is located in the northwest corner and the berm is covered with an even-age stand of box elder trees. Other trees are found loosely aggregated throughout the primarily herbaceous cover of this parcel. These conditions could provide roosting sites for both bats although the relatively large open area would tend to be avoided for foraging and for this reason, Area A may not be conducive habitat for either bat. In addition, proximity to major highways may deter the use of this area.

Potential tree obstructions identified north of I-94 in the residential area were not field reviewed. These are scattered individually or in small groupings throughout the residential area. Trees here could be large enough to provide for roosting and could therefore potentially provide suitable habitat. The developed nature of the area may deter use by the bats.

The wooded area within Area C provides a fairly large area of forested cover consisting primarily of sweet and black cherry which can provide exfoliating bark desired by these bats for roosting sites. Along the edges of this area, cottonwood, box elder, and paper birch were observed. This more closed canopy area affords more protection as well as potential foraging opportunities along the open edges of the adjacent vacant lands.

The Pfizer property has some small areas of woodland that contain potentially suitable habitat for both bats. Relatively mature trees are present in the mature wooded area while the disturbed woodland contained some habitat that would be suitable for general roosting needs (Golder, 2019).

No known NLEB hibernacula are documented in Kalamazoo County. No NLEB roost trees are documented in Kalamazoo County (USFWS, 2021).

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. There is no designated critical habitat for the Indiana bat in the State. The Indiana bat is known to be present in Lower Michigan and is considered potentially present wherever areas of suitable habitat exist within their range.

(a) Proposed Tree Removals

The preferred alternative project layout provided in Appendix B shows locations of identified potential obstructions. These generally are small, dispersed groupings of trees, less than five acres in size. The residential area north of I-94 contains many individual and dispersed trees while Area A (between I-94 and Kilgore Road) contains two small areas: a line of trees along the berm and a small copse just south of I-94.

The analysis of the proposed approach surface for the Runway 35 identified small areas (<5 acres in size) along the railroad spur, along a field edge adjacent to Romence Road, and forested area at the south edge of the field along Sprinkle Road.

The USFWS Michigan Determination Key results (Appendix E) indicated a “may affect, not likely to adversely affect” (NLAA) determination” for the NLEB and the Indiana Bat. Since many areas identified for potential tree removal for the runway extension project are small and/or individual isolated trees, removal likely can be accomplished by selective tree removal. Tree removals can be completed during recommended time periods appropriate for minimizing impacts to any potential bat populations. Specifically, any potential tree removal activities can be accomplished outside the summer roosting season (after October 31 and before April 1) to minimize ground disturbance with machinery and impact to any potential NLEB and Indiana bat populations.

D. Eastern Massasauga Rattlesnake

(1) Habitat Requirements

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

“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, 2018c)

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, 2018c). 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.

(2) Habitat Assessment

Occurrences of the Eastern Massasauga Rattlesnake have been reported in Kalamazoo County as recently as 2019 (MNFI, 2020a). Within highly-managed airfield areas, potential upland habitat

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is characterized as a mixture of turf and introduced grasses such as Kentucky blue grass and orchard grass and common forbs. The on-going vegetation maintenance operations cause significant regular vegetative disturbance in upland airfield areas. Surrounding areas were also historically in agriculture before conversion to residential and commercial land uses or road and railroad corridors.

Wetlands within Area A are covered by a mixture of emergent and scrub-shrub vegetation with standing water present for much of the growing season. Suitable potential wetland habitat is present within the airfield although water quality is degraded by airport drainage inputs and consistent human presence will likely deter the snake's use of these areas.

The upland area to the north of East Kilgore Road (Area A) may provide suitable upland habitat in certain times of the year but it is unknown how far the EMR would travel to find such habitat. Mobility from the large wetland complex on the north end of the Airport is significantly impeded by the road embankment of East Kilgore Road. Access to the site from the north is also impeded by the I-94 road corridor. A parking lot associated with an active truck rental facility sits to the east of Area A and likely constitutes an area of high human disturbance unattractive to the EMR.

The upland area on the County-owned parcel formerly in agricultural production and later converted to a tree farm caused significant landscape disturbance. The now fallow field is covered by common forbs and introduced grasses. This area may provide suitable upland habitat in certain times of the year for snakes potentially moving from wetland areas to the south, outside of the Airport. As with north of the Airport, Romence and Sprinkle roads may prove to be significant impediments to movement.

The wooded area on the City of Portage-owned parcel was mapped as emergent wetland (PEM1C) but has over time experienced early successional growth with near total canopy closure and a transition to more upland species. This shady cherry-dominated area would likely not support the summer thermoregulation needs of the EMR.

The USFWS Michigan Determination Key results (Appendix E) indicated a "may affect, not likely to adversely affect" (NLAA) determination" for the snake. Given historical agricultural land use in the area and later conversion to residential and commercial land uses, suitable habitat for the EMR was likely severely impacted early in the Airport's history. On-going vegetation maintenance operations create unstable and unsuitable habitat conditions for the EMR on the Airport. Woody succession within the City of Portage's parcel likely is not conducive to supporting the EMR's summer thermoregulation needs and a lack of undisturbed nearby wetland habitat would likely not attract the snakes to the southern part of the Airport. Mobility to these areas is also limited by busy road corridors. Therefore, the project area provides limited potential habitat for the EMR and therefore, will not likely adversely affect the snake.

Construction activities on the airfield occur in upland areas and could span a full season, potentially affecting movement of the snake between wetland and upland habitats if present. Use of recommended erosion control and site restoration materials ("wildlife safe materials") can be incorporated into construction plans; any sightings of the snake will be reported to USFWS.

E. Mitchell's Satyr Butterfly

(1) Habitat Requirements

The Mitchell's satyr butterfly is one of the most geographically restricted eastern butterflies. Historically, the Mitchell's satyr was found in New Jersey, Ohio, Michigan, Indiana, and possibly Maryland. Today, the butterfly can only be found in southern Michigan and northern Indiana in the Upper Midwest. The Mitchell's satyr is restricted to rare fen wetlands, a type of low nutrient wetland that receives carbonate-rich ground water from seeps and springs (USFWS, 1998).

“Bog fens are characterized as fen communities which contain a significant number of species of northern affinities, including conspicuous species such as *Larix laricina* (tamarack), *Toxicodendron vernix* (poison sumac), and *Sarracenia purpurea* (pitcher plant). Other conspicuous plant indicator species which are often present in Midwestern fens supporting this butterfly include *Potentilla fruticosa* (shrubby cinquefoil), and *Cornus stolonifera* (red-osier dogwood).” (USFWS, 1998)

More generally, though, the butterfly's habitat is known to occur on peatlands but ranges along a continuum from prairie/bog fen to sedge meadow/swamp. Mitchell's satyr appears to have a close association with young tamarack trees (USFWS, 1998).

(2) Habitat Assessment

The USFWS Michigan DKey results (Appendix E) indicated a “No effect” determination for the butterfly. Suitable fen habitat for the butterfly is not found within the project area. Wetland areas identified on the airport are dominated by common or invasive species such as reed canary grass and cattail, lack species typically found in fens of Michigan (MNFI, 2020b), are fed by flows from drainage systems rather than groundwater, and have been highly altered over time. Therefore, the project area provides limited potential habitat for the butterfly and therefore, will have no effect on the butterfly.

F. Snuffbox Mussel

(1) Habitat Requirements

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

“The snuffbox is a filter-feeding species from the Unionidae family with a diet likely consisting of a mixture of algae, detritus, bacteria, and microscopic zooplankton. The snuffbox is found in small to medium-size creeks as well as lakes and larger rivers. Preferable habitat is characterized as having swift currents with riffles and shoals or wave-washed lakeshores over gravel and sand with occasional cobble and boulders. Generally, they are found burrowed deep into the substrate except for when they emerge to spawn or attract a host.” (USFWS, 2019)

(2) Habitat Assessment

The USFWS Michigan DKey results (Appendix E) indicated a “No effect” determination for the mussel. Suitable riverine habitat is not present within the Area of Interest. Therefore, the project area provides no potential habitat and will have no effect on the mussel.

G. Monarch Butterfly

The monarch butterfly is a migratory species utilizing grassland and prairie habitats in the Midwest for foraging in all life stages. Currently, the monarch is a candidate species and is not listed or proposed for listing. There are no Section 7 requirements for candidate species.

H. Rusty Patched Bumblebee

(1) Habitat Requirements

The project area is located within the historical range of the rusty patched bumble bee (*Bomus affinis*) (RPBB) as shown on the FWS habitat map (<https://www.fws.gov/midwest/endangered/insects/rpbb/rpbbmap.html>, accessed May 18, 2020). No Low or High Potential Zones are identified for Kalamazoo County.

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.

(2) Habitat Assessment

The MNFI lists the RPBB as a Special Concern species. Most documented occurrences of the bumble bee in Michigan are confined to lower Michigan and although much of the state has not been surveyed, there are few documented occurrences of the species in Kalamazoo County and none since 1975.

Vegetation on the airfield is actively managed by mowing and does not provide habitat with the species diversity or undisturbed nesting and overwintering sites necessary for the RPBB. Area A and the southeast corner of Area C (at the intersection of Romence and Sprinkle roads) are relatively small upland areas consisting of a low diversity mix of forbs, trees, and introduced grasses surrounded by development.

The project area is within the historical range of the RPBB but suitable foraging and nesting habitat is limited within the AOI due to the long history of land alteration both on and in close proximity to the airport (farming and conversion to residential and commercial land uses), tree farm production, and on-going vegetation maintenance activities on the airfield. Therefore, the project area provides limited potential habitat for the RPBB.

Section 7 consultation and incidental take permits are not needed in the historical range of the bumble bee where none have been observed since before the year 2000.

4. Conclusion

A review of threatened and endangered species information provided in the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) database for the project area identified five threatened or endangered species and one candidate species. No critical habitat under USFWS jurisdiction was found in the project area.

The small, wooded areas within Areas A and C and wooded areas on the Pfizer property contain potential forested habitat for both the NLEB and the Indiana bat. The USFWS Michigan Determination Key results (Appendix E) indicated a "may affect, not likely to adversely affect" (NLAA) determination for the NLEB and the Indiana bat.

Since many areas identified for potential tree removal for the runway extension project are small and/or individual isolated trees, removal likely can be accomplished by selective tree cutting. Tree removals can be completed during recommended time periods appropriate for minimizing impacts to any potential bat populations. Specifically, any potential tree removal activities can be accomplished outside the summer roosting season (after October 31 and before April 1) to minimize ground disturbance with machinery and impact to any potential NLEB and Indiana bat populations.

Due to the historic agricultural practices associated with these areas and the conversion to residential and commercial land uses, the AOI provides limited habitat potential for wildlife. Upland areas associated with the five on-airfield wetlands are actively maintained by mowing. This regular disturbance does not provide attractive habitat to the EMR. Other less actively maintained uplands outside of the airfield have significant impediments to access for the EMR across road corridors as well as a lack of wetland habitat in close proximity to these uplands.

The USFWS Michigan Determination Key results (Appendix E) indicated a "may affect, not likely to adversely affect" (NLAA) determination for the snake. Construction activities on the airfield occur in upland areas and could span a full season, potentially affecting movement of the snake between wetland and upland habitats if present. Use of recommended erosion control and site restoration materials ("wildlife safe materials") can be incorporated into construction plans; any sightings of the snake will be reported to USFWS.

No high-quality fens attractive to the Mitchell's satyr butterfly were identified within the AOI. Therefore, the project area provides limited potential habitat for the butterfly. Similarly, the relatively small low-diversity upland areas and on-going maintenance activities provide limited foraging and nesting habitat for the rusty patched bumble bee. The project will have no effect on either of these species.

Suitable riverine habitat is not present within the Area of Interest. Therefore, the project area provides no potential habitat for the snuffbox mussel and will have no effect on the mussel.

The monarch butterfly is a migratory species utilizing grassland and prairie habitats in the Midwest for foraging in all life stages. Currently, the monarch is a candidate species and is not listed or proposed for listing. There are no Section 7 requirements for candidate species.

Section 4
Conclusion

The project area is within the historical range of the RPBB but suitable foraging and nesting habitat is limited within the AOI due to the long history of land alteration both on and in close proximity to the airport. Section 7 consultation and incidental take permits are not needed in the historical range of the bumble bee where none have been observed since before the year 2000.

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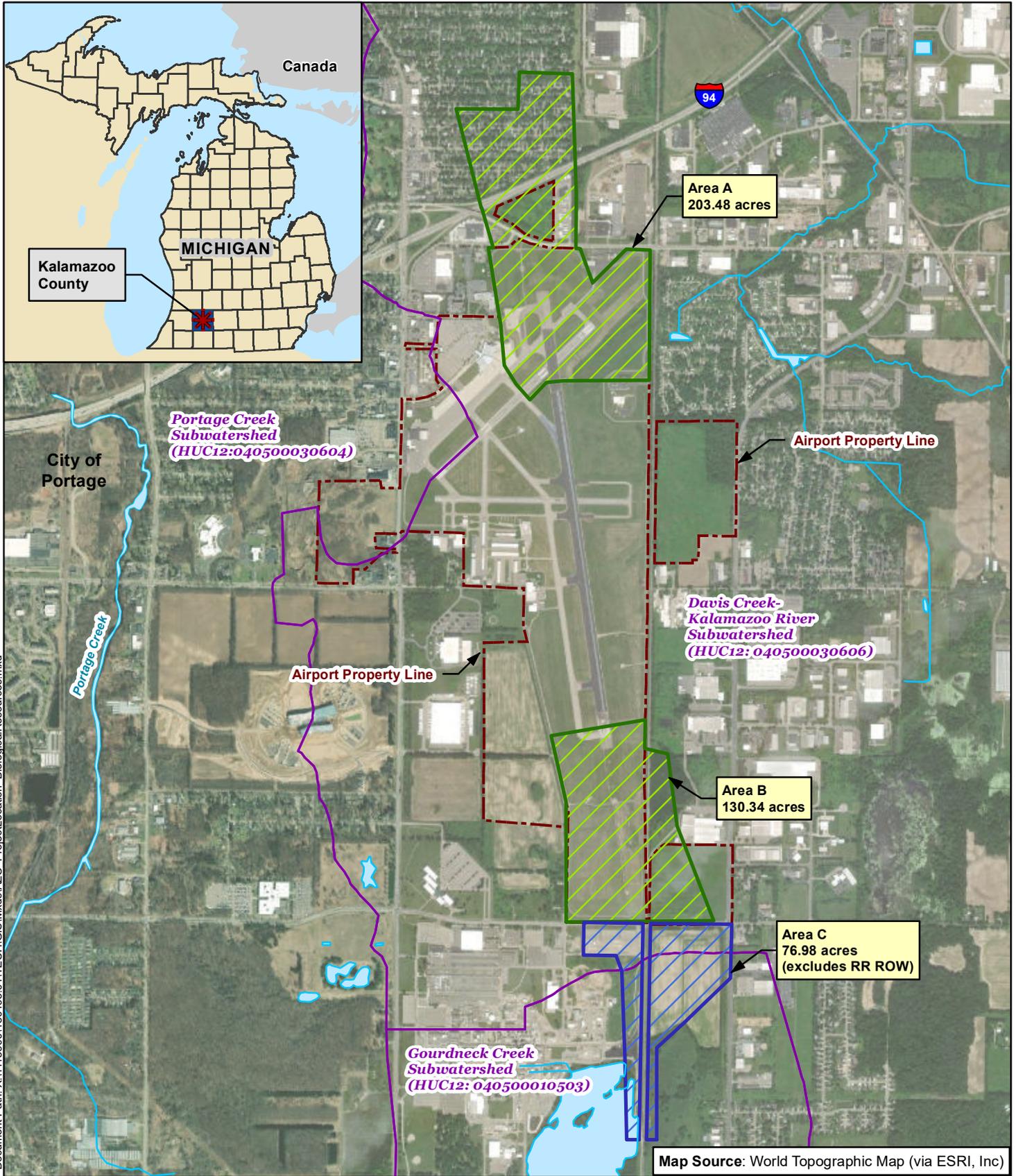
U.S. Fish and Wildlife Service, 2018b. Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat. Prepared by U.S. Fish and Wildlife Service, Midwest Regional Office, Bloomington, Minnesota. Revised February 2018.

U.S. Fish and Wildlife Service, 2018c. Biological Opinion: Range-wide Programmatic Agreement for The Conservation and Management of the Eastern Massasauga Rattlesnake (*Sistrurus catenatus*) in Michigan. Prepared by U. S. Fish and Wildlife Service, Michigan Ecological Services Field Office, East Lansing, Michigan. November 5, 2018.

U.S. Fish and Wildlife Service, 2019. Biological Opinion on the Ohio Department of Transportation Vrooman Road Bank Stabilization (associated with the LAK-Vrooman Road Project, PID105029) in Lake County, Ohio. Prepared by U. S. Fish and Wildlife Service, Ohio Ecological Services Field Office, Columbus, Ohio. August 9, 2019.

U.S. Fish and Wildlife Service, 2021. Michigan Northern Long-eared Bat Hibernacula and Roost Tree Locations. U.S. Fish and Wildlife Service, Midwest Region – Michigan Field Office. Accessed at <https://www.fws.gov/midwest/EastLansing/te/index.html>, February 10, 2021.

Appendix A. Project Location Map



Project Location

Kalamazoo/Battle Creek International Airport



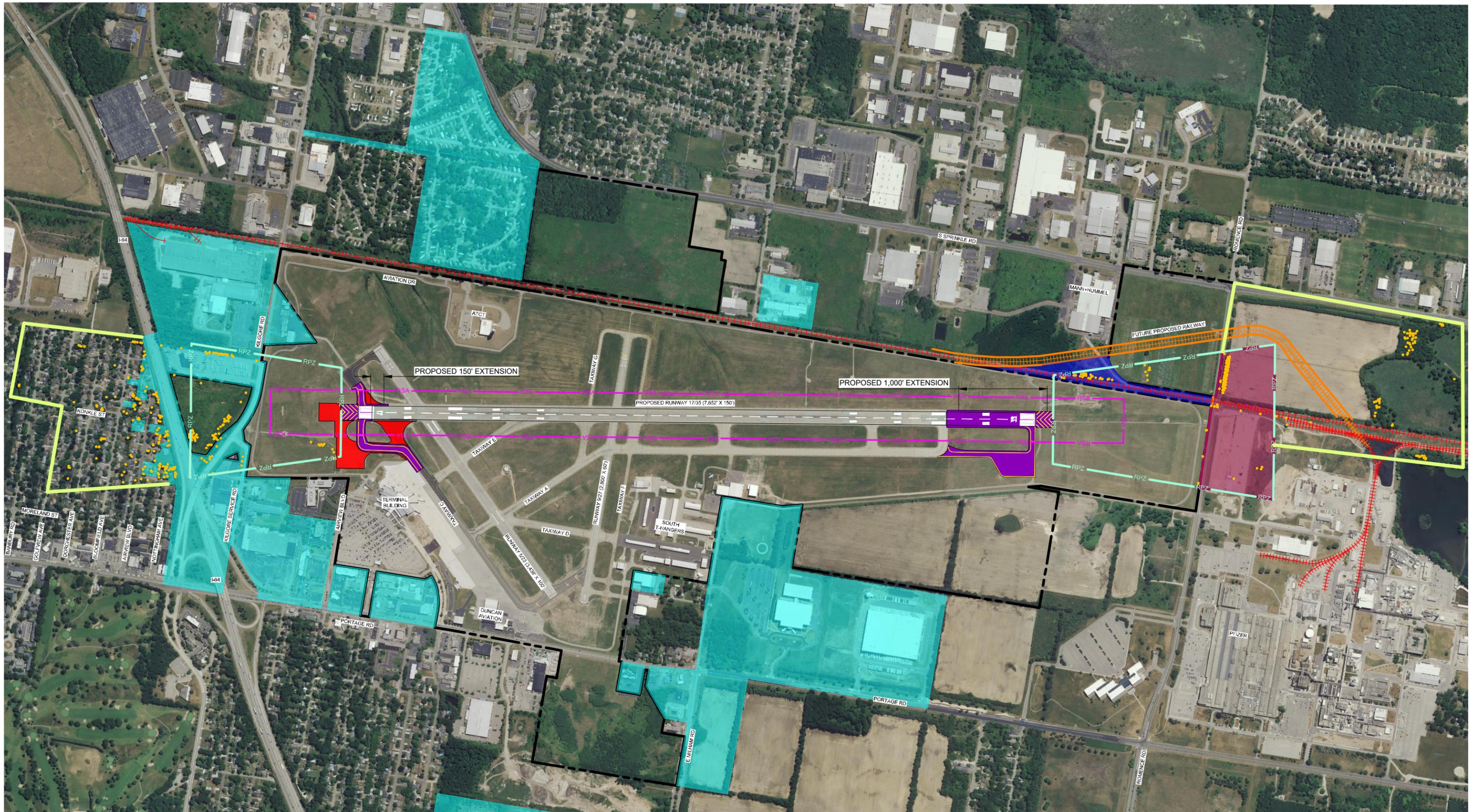
Legend

- Mead & Hunt Area of Interest
- Pfizer Area of Interest
- Approximate Airport Property Boundary
- HUC 12 Watershed

Project Information

T3S, R11W, Sections 1, 2, 11, and 12
 T2S, R11W, Section 35
 City of Kalamazoo
 Kalamazoo County, MI
 Area of Interest = 333.8 acres
 Field work conducted: June 6 - 7, 2019
 and August 19 - 21, 2019

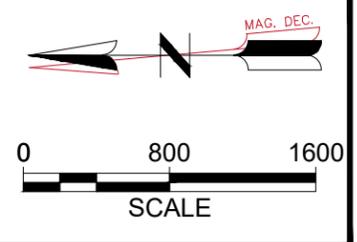
Appendix B. Proposed Preferred Alternative



**KALAMAZOO/BATTLE CREEK
 INTERNATIONAL AIRPORT RUNWAY
 BUILD ALTERNATIVE 2
 17-35 - 1,150' EXTENSION**
 KALAMAZOO, MICHIGAN

- LEGEND**
- RUNWAY PROTECTION ZONE
 - RUNWAY SAFETY AREA
 - + + + + + EXISTING RAILROAD
 - + + + + + PROPOSED RAILROAD
 - EXISTING AIRPORT PROPERTY LINE
 - AREA OF POSSIBLE EASEMENT

- EXISTING EASEMENT
- FUTURE RPZ EASEMENT
- PROPERTY ACQUISITION
- PROPOSED PAVEMENT
- PAVEMENT REMOVED
- POTENTIAL OBSTRUCTIONS



Appendix C. Biotic Resources Evaluation of Pfizer Property

TECHNICAL MEMORANDUM

DATE October 10, 2019

Project No. 18105133

TO Joshua Slater
Pfizer, Inc.

CC Robert Iles, Golder
Steve Thumma, Golder

FROM Brian Huebner

EMAIL bhuebner@golder.com

**GENERAL BIOTIC RESOURCES EVALUATION
Pfizer Property – Runway 17/35 Extension and Taxiway C Realignment
Kalamazoo, Michigan**

Golder Associates Inc. (Golder) respectfully submits this technical memo to Pfizer Inc. (Pfizer) summarizing the desktop screening and general biotic resources evaluation for the Pfizer property proposed as part of the Kalamazoo/Battle Creek International Airport (Airport) runway extension and taxiway realignment project (Project).

1.0 INTRODUCTION

Golder has been retained by Pfizer to complete a general biotic resources evaluation required by Mead & Hunt to complete an Environmental Assessment (EA) for the Project. Mead & Hunt is working with the Airport and the Federal Aviation Administration (FAA) to extend a runway approximately 1,150 feet (ft.) which includes the installation of FAA light extensions and the abandonment and relocation of an existing rail line. Elements of the Project (FAA light extensions and the abandonment and relocation of an existing rail line) will extend onto property owned by Pfizer, hereinafter referred to as the Area of Potential Effects (APE). The approximate location of the Project and key elements in relation to the Pfizer property are shown on the Proposed Property map provide by Mead and Hunt (Attachment A). The APE consists of about 76.98 acres of a larger parcel comprising a 300 foot buffer around the proposed Project features. The APE excludes the railroad right-of-way (ROW) currently controlled and used by Penn Central Railroad. The railroad ROW will be assessed by others. The area comprised by the railroad ROW was not included in Golder's scope.

2.0 METHODS

2.1 Desktop Review

Golder reviewed publicly-available information from the following sources to evaluate potential habitat and biotic resource areas at the APE.

- United States Geological Survey (USGS) topographic map (Figure 1)
- Readily-available aerial imagery (Figures 2 through 7, and viewed online)
- Natural Resources Conservation Service (NRCS) Soil Survey Map (Figure 3)
- National Wetlands Inventory (NWI) Map (Figure 4)

- Michigan Department of Environment, Great Lakes, and Energy (EGLE) Wetland Inventory (Figure 5)
- Federal Emergency Management Agency (FEMA) 100-Year Floodplain Map (Figure 6)

To evaluate the presence of biotic resources under the jurisdiction of federal authorities, Golder used the US Fish and Wildlife Service's (USFWS) Information Planning and Consultation tool (IPaC) to obtain an unofficial species list for the APE (Attachment B). IPaC is the USFWS' preferred method for obtaining a review regarding federally-listed species or other resources subject to federal (USFWS) regulation, such as migratory birds, that may occur or could possibly be affected by activities in a location. The IPaC Report is a standard resource for initial project scoping and review. An official list can be requested for the overall Project once the full extent of the Project is defined. The official list will include a list of species and critical habitat that should be considered under Section 7 of the Endangered Species Act, as well as a project tracking number and other pertinent information from the local USFWS field office.

To evaluate the presence of biotic resources under the jurisdiction of state authorities, Golder obtained a Rare Species Review from the Michigan Natural Features Inventory (MNFI) regarding the known or potential presence of endangered resources on or within the immediate vicinity of the APE (Attachment C). Endangered resources may include natural features such as rare or unique habitats and state- or federally-listed T&E species.

2.2 Field Assessment

Golder personnel visited the APE on April 15, 2019 to assess general APE conditions. The visit was completed by Mr. Brian Huebner, PWS, of Golder in conjunction with a wetland assessment and delineation. The assessment was conducted during the onset of the growing season as evidenced by newly emerging herbaceous plant growth and buds bursting on trees and shrubs. Golder is of the opinion that conditions on the APE were conducive to performing the scope of work for its intended purpose.

3.0 RESULTS

3.1 Desktop Review

The USGS topographic map (Figure 1) indicated that the ground elevation in the vicinity of the APE ranges between 860 - 870 feet above mean sea level (MSL), with the highest elevations located on the northern end. Surface water drainage on and near the APE has been modified by surrounding development. Upjohn Pond is located on and adjoins the southwest part of the APE. The USGS map indicated the presence of wetlands (marsh symbols) on the south part of the APE.

Aerial imagery from the National Agriculture Imagery Program (Figure 2) and viewed online indicated that in 1950, the north part of the APE was used as farmed land, the central part was used as part of the railroad access to a large industrial facility, and the south part was relatively low-lying, undeveloped meadow and scrub-shrub, and forested habitat. Upjohn Pond did not appear to have been present in 1950. The railroad was present through the middle part of the APE. Sometime between 1950 and 1960, the area of Upjohn Pond appeared to have been dammed and/or excavated to form a lake. Land use on the north part of the APE remained relatively unchanged until sometime between 1989 and 1997, during which time a parking lot had been established on the northwest part of the APE. Land use on the APE remained similar from about 1997 through the present. It appeared there were areas of standing water or saturated soils on the APE in the aerial imagery. Areas of standing water and saturated soils typically appear as relatively darkened areas or areas characterized by differing vegetation types on the aerial photos, while areas of stressed vegetation may appear as contrasting shades of green.

The NRCS soil survey map (Figure 3) indicated five soil map units on the APE. Map units are composed of one or more components or soil types. Table 1 presents a summary of soil map units on the APE and the NRCS hydric rating, which indicates the percentage of a representative map unit that is expected to meet the criteria for hydric

soils as determined by the National Technical Committee on Hydric Soils (NTCHS). A hydric soil is defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (typically wetland soils).

Table 1: NRCS Soil Types Mapped on the APE

Soil Series Map Unit	Soil Series Map Unit Symbol	Hydric Rating (%)
Aquents and Histosols, ponded	Aq	100
Houghton muck, 0 to 1 percent slopes	Hn	100
Kalamazoo loam, 0 to 2 percent slopes	KaA	0
Kalamazoo loam, 2 to 6 percent slopes	KaB	0
Urban land-Kalamazoo complex	UKB	0

The presence of these soil types on the APE was generally verified during the APE visit. Based on visual observation of fill material, abrupt changes in topography, and apparent development history of the APE, Golder is of the opinion that surface and near-surface soils in some areas have been modified by historic filling and grading. NRCS soil surveys are compiled using information at coarse spatial scales, including sources typically based on remote sensing techniques. It is not unusual for the results of fieldwork to differ from conditions depicted by NRCS soil survey, particularly in areas of historic development.

The NWI map (Figure 4) and EGLE wetland map (Figure 5) indicated the presence of mapped wetlands on the APE. The extent of wetlands shown on the NWI map was generally consistent with observations during the wetland delineation APE visit while the extent of wetlands on the EGLE wetland maps appeared greater than the extents based on field assessment, particularly near the central part of the APE. The NWI and EGLE wetland maps were compiled using information at coarse spatial scales from sources typically based on remote sensing techniques. It is not unusual for the results of fieldwork to identify areas with conditions different from those depicted by the EGLE and NWI maps, particularly in areas of historic development.

The FEMA floodplain map (Figure 6) indicated that the APE is not located within a designated 100-year floodplain.

The IPaC results indicated the potential presence of four federally-listed species that may occur on or in the vicinity of the APE but no critical habitats for listed species, wildlife refuges, or fish hatcheries occur on or in the immediate vicinity of the APE (Attachment B). The evaluation of potential presence of listed species on the APE is presented in the Preliminary Threatened and Endangered Species Assessment tech memo prepared by Golder dated October 10, 2019 (Endangered Species Memo).

The IPaC report identified nine migratory bird species of particular concern because they occur on the USFWS Birds of Conservation Concern list or that warrant special attention in the APE location that could potentially be affected by the Project (Table 2).

Table 2: Federal Migratory Bird Species of Particular Concern Indicated by the IPaC

Species Common Name (<i>Scientific Name</i>)	Type	Federal Status ¹	State Status ²
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Bird	BCC	SC
Bobolink (<i>Dolichonyx oryzivorus</i>)	Bird	BCC	NL
Cerulean Warbler (<i>Dendroica cerulae</i>)	Bird	BCC	NL
Henslow's Sparrow (<i>Ammodramus henslowii</i>)	Bird	BCC	E
Lesser Yellowlegs (<i>Tringa flavipes</i>)	Bird	BCC	NL
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	Bird	BCC	SC
Rusty Blackbird (<i>Euphagus carolinus</i>)	Bird	BCC	NL
Willow Flycatcher (<i>Empidonax traillii</i>)	Bird	BCC	NL
Wood Thrush (<i>Hylocichla mustelina</i>)	Bird	BCC	NL

¹ Federal status obtained from the IPaC list: BCC = Bird of Conservation Concern

² State status obtained from the MNFI web site (<https://mnfi.anr.msu.edu/>, accessed may 31, 2019): NL = Not Listed, E = Endangered, SC = Special Concern

"Species of concern" is an informal term that refers to those species which the USFWS Region 3 or state regulatory agency believes might need concentrated conservation actions. Species of concern receive no legal protection and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species.

The MNFI review (Attachment C) indicated that there have been documented occurrences of rare and and/or protected resources within 1.5 miles of the APE. The MNFI review did not provide a specific list of these resources, nor did it indicate whether or not they were located within the APE limits. However, it did include the statement "Although legally protected species have been documented within approximately 1.5 miles of this activity, the occurrences are well away from the location and it is not likely that negative impacts will occur".

3.2 Field Assessment

The APE consisted of paved parking areas and developed access roads (northwest and west parts), actively farmed land (northeast part), and undeveloped but historically disturbed meadow and forested habitat (southeast part) with some relatively low-lying areas (wetlands). Table 3 presents a summary of prominent land use/cover types on the APE.

Table 3: Prominent Land Use/Cover Types on the APE

Land Use/Cover Type	Area (acres)
Coal Pile	1.8
Developed Land	21.7
Disturbed Woodland	4.2
Emergent Wetland	7.2
Emergent/Scrub-shrub Wetland	<0.1
Farmed Land	35.7
Landscape Buffer	1.7
Mature Woodland	2.0
Shallow Water	2.6
Total	77.0

The approximate limits of each land use/cover type are shown on Figure 7. The above calculations are for general reference and have not been verified by delineation or survey. Below is a description of typical conditions in each area of land use/cover type.

Coal Pile

This area was used to store a large pile of coal used as fuel for power and/or heat generation at the current Pfizer facility. There were no significant biotic communities associated with the coal pile.

Developed Land

This area consisted of nearly level to gently sloping land that has been historically graded and developed as part of the current Pfizer facility. Parts of this area were paved (concrete, asphalt, and compacted gravel) and used for parking and access drives. There was part of a small, constructed stormwater detention pond in this area. Areas that were not paved were typically covered by lawn and meadow periodically maintained by mowing. There were no significant biotic communities associated with the developed land.

Disturbed Woodland

This area consisted of land adjacent to Upjohn Pond that has been historically filled and graded as evidenced by abrupt changes in topography and the presence of foreign materials in the soil such as brick, concrete, and metal fragments. The ground surface in this area was nearly level to undulating with distinct and abrupt changes in topography. Vegetation in this area was characterized by cottonwood (*Populus deltoides*), dead and dying green ash (*Fraxinus pennsylvanica*), common buckthorn (*Rhamnus cathartica*), honeysuckle (*Lonicera tartarica*), riverbank grape (*Vitis riparia*), yellow avens (*Geum aleppicum*), motherwort (*Leonurus cardiaca*), yarrow (*Achillea millefolium*), Queen-Anne’s-lace (*Daucus carota*), smooth brome (*Bromus inermis*), bluegrass (*Poa pratensis*),

and switchgrass (*Panicum virgatum*). Vegetation was characterized by species typically occurring on and adapted to disturbed conditions and most areas supported a predominance or strong presence of non-native and/or invasive species. There were no rare or unusual biotic communities associated with the disturbed woodland. However, as indicated in the Endangered Species Memo, the wooded area did appear to contain habitat that is potentially suitable for Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) (NLEB). Some trees appeared large enough and/or contained areas with dead branches, cavities, and/or peeling or flaking bark that might be suitable for general bat roosting habitat.

Emergent Wetland

This area consisted of relatively low-lying habitat with areas of seasonally ponded surface water. The wetland was identified and designated as Wetland D during a wetland assessment and delineation conducted by Golder (refer to Wetland Regulatory Status Review Report prepared by Golder dated October 10, 2019 [Wetland Report]). The wetland consisted of seasonally inundated and saturated emergent (wet meadow) habitat with some trees and shrubs along the edges. Vegetation was characterized by common reed (*Phalaris arundinaceae*) with some willows (*Salix* sp.) and others shrubs along the edges. Soil in the wetland consisted of muck or mucky peat. The wetland is part of a larger wetland complex greater than five acres (historically part of Upjohn Pond and adjacent wetlands) that extended beyond the APE limits.

There was a narrow area of historically filled and graded uplands adjacent to the west limits of the wetland (along the east side of the railroad ROW). Uplands adjacent to the wetland consisted of forested, scrub-shrub, and meadow habitat. Vegetation in uplands adjacent to Wetland D was characterized by black cherry (*Prunus serotina*), pin oak (*Quercus palustris*), red maple (*Acer rubrum*), cottonwood, box elder (*Acer negundo*), white birch (*Betula papyrifera*), willows, blackberry (*Rubus allegheniensis*), blue joint grass, common reed, and little blue stem (*Schizachyrium scoparium*). Vegetation was characterized by species typically occurring on and adapted to disturbed conditions and most areas supported a predominance or strong presence of non-native and/or invasive species. Conditions in wetlands and adjacent uplands on the APE are described in further detail in the Wetland Report).

The wetland and adjacent uplands appeared to provide habitat for various wildlife, including small mammals, herpetofauna (frogs, toads, and snakes), and songbirds. There were no rare or unusual biotic communities associated with the emergent wetland.

Emergent/Scrub-shrub Wetland

These areas consisted of relatively low-lying habitat with areas of seasonally ponded surface water. The wetlands were identified and designated as Wetlands A and C during a wetland assessment and delineation conducted by Golder (refer to Wetland Report). The wetlands consisted of seasonally inundated and/or saturated emergent (wet meadow) and scrub-shrub habitat along and near the edge of Upjohn Lake. Vegetation was characterized by willow, common reed, blue joint grass (*Calamagrostis canadensis*), and sedges (*Carex* sp.). Conditions in wetlands and adjacent uplands are described in further detail in the Wetland Report.

Uplands adjacent to Wetlands A and C consisted of forested habitat formed on historically filled and graded land, as evidenced by abrupt changes in topography and the presence of foreign materials in the soil such as brick, concrete, and metal fragments (refer to above description of Disturbed Woodland).

The wetland and, to a lesser degree, adjacent uplands appeared to provide habitat for various wildlife, including small mammals, herpetofauna (frogs, toads, and snakes), and songbirds. There were no rare or unusual biotic communities associated with the emergent/scrub-shrub wetlands.

Farmed Land

This area consisted of actively farmed land that had apparently been tilled and planted in 2018. Review of aerial imagery indicated that the area has been actively farmed since at least 1950. There were no significant biotic communities associated with the farmed land.

Landscape Buffer

This area consisted of land adjacent to Romence Road that has been maintained as part of the farmed land or open meadow habitat until sometime between 2000 and 2002, at which time the area was planted with pine trees to form a visual buffer along the road. Vegetation was characterized by (planted) pine trees (*Pinus* sp.). The landscape buffer appeared to provide habitat for various wildlife, particularly small mammals and songbirds. There were no rare or unusual biotic communities associated with the landscape buffer.

Mature Woodland

This area consisted of wooded habitat characterized by relatively mature trees. Vegetation was characterized by red maple (*Acer rubra*), black cherry (*Prunus serotina*), box elder, and pin oak with a relatively sparse understory. The wooded area appeared to provide habitat for various wildlife, including large and small mammals, songbirds, and herpetofauna. There were no rare or unusual biotic communities associated with the mature woodland. However, as indicated in the Endangered Species Memo, the wooded area did appear to contain habitat that is potentially suitable for Indiana bat and NLEB. Some trees appeared large enough and/or contained areas with dead branches, cavities, and/or peeling or flaking bark that might be suitable for general bat roosting habitat.

Shallow Water

This area consisted of shallow water habitat apparently less than three feet deep associated with Upjohn Pond. Upjohn Pond is a permanent waterbody that was apparently created sometime between 1950 and 1960 by impounding water and flooding a historic wetland complex. There is a water level control structure near the south end of the APE that can apparently be used to lower the water level in the lake. Shallow water areas were characterized by submergent vegetation such as water lily (*Nuphar* sp.) and algae. The shallow water area appeared to provide habitat for various wildlife, including fish, herpetofauna (turtles, frogs, and toads), ducks, and wading birds. There were no rare or unusual biotic communities associated with the shallow water areas.

Golder did not observe any of the federal- or state-listed species or any rare or unique habitats on the APE during the visit on April 15, 2019. Photographs depicting typical conditions on the APE during the visit are included as Attachment D. Photographs were taken by Pfizer staff during the APE visit and provided to Golder at a subsequent date.

4.0 POTENTIAL IMPACTS TO BIOTIC COMMUNITIES

Below is a general discussion of potential impacts to biotic communities (other than threatened and endangered species) from the Project and associated activities.

Coal Pile

The Project will not result in direct or indirect impacts to biotic communities in the coal pile.

Developed Land

The Project will impact about four acres of developed land. Impacts are anticipated to be limited to removal of existing pavement and fencing with some soil excavation and grading and construction of several new lighting structures associated with the runway extension. The Project will not result in direct or indirect impacts to significant biotic communities in the developed land.

Disturbed Woodland

The Project will not result in direct impacts to biotic communities in the disturbed woodland. Indirect impacts may include increased noise from airline traffic, as the new runway end will be closer to the disturbed woodland. Increased noise may deter use of the area by some wildlife, though overall wildlife use is not expected to change significantly.

Emergent Wetland

The Project will not result in direct impacts to biotic communities in the emergent wetland. Indirect impacts may include increased noise from airline traffic, as the new runway end will be closer to the emergent wetland. Increased noise may deter use of the area by some wildlife, though overall wildlife use is not expected to change significantly.

Emergent/Scrub-shrub Wetland

The Project will not result in direct impacts significant indirect impacts to biotic communities in the emergent/Scrub/Shrub wetland.

Farmed Land

The Project will impact about six to seven acres of farmed land. Direct impacts include excavation and grading of land associated with relocating a segment of the railroad tracks. Indirect impacts include the cessation of farming activities in areas near the new runway and development of open meadow (likely to be maintained by periodic mowing) in undeveloped areas adjacent to the new runway. Wildlife use in areas near the new runway will be discouraged by the Airport to reduce the potential for accidents involving aircraft and incidental harm to wildlife. Overall wildlife use may increase as areas develop into meadow. However, it is not expected to change significantly.

Landscape Buffer

The Project will impact less than one acre of landscape buffer. Direct impacts include tree removal on and excavation and grading of about 0.3 acres of land. Indirect impacts include increased noise and airline traffic in any remaining landscape buffer areas. Wildlife use in areas near the new runway will be discouraged by the Airport to reduce the potential for accidents involving aircraft and incidental harm to wildlife. Overall wildlife use it is not expected to change significantly.

Mature Woodland

The Project will not result in any direct impacts to biotic communities in the mature woodland. Indirect impacts may include increased noise from airline traffic. Increased noise may deter use of the area by some wildlife, though overall wildlife use is not expected to change significantly.

Shallow Water

The Project will not result in any direct impacts to biotic communities in the shallow water. Indirect impacts may include sediment deposition into the water during removal of the railroad tracks and increased noise from airline traffic. Impacts from sedimentation should not be significant if the Project complies with applicable permits that will be required. Increased noise may deter use of the area by some wildlife, though overall wildlife use is not expected to change significantly.

5.0 REGULATORY GUIDANCE

Waters and Wetlands

Since 1984, the federal government has authorized the State of Michigan to administer the Clean Water Act (CWA) Section 404 program within its borders, regulating impacts to wetlands and waters of the US (WOUS). Because the program is administered by the State of Michigan, applicants for most wetland permits are required only to apply to the EGLE for approval under Michigan's Natural Resources and Environmental Protection Act (NREPA), Part 303, Wetlands Protection. The State of Michigan regulates wetlands based on their location and surface connectivity to inland lakes, ponds, streams, and rivers. Wetlands are regulated under Part 303 if they have a direct surface water connection to or are within 500 feet of a lake, pond, stream, or river as defined above, or are within 1,000 feet of the Great Lakes or Lake St. Clair. Wetlands are also regulated under Part 303 if they do not meet the above guidelines but are greater than five acres in size or are known or suspected to support the presence of a threatened or endangered species. Wetland areas that are separated by man-made features, such as roads, railroads, dikes, and levees are considered part of the same wetland complex when determining overall wetland size and connectivity. Based on current provisions of Part 303 and conditions observed during the APE visit, Golder is of the opinion that all wetlands on the APE are regulated under Part 303. A permit is required from the EGLE to place fill in, excavate soil from, or otherwise modify the soil and/or hydrology of regulated wetlands.

The State of Michigan regulates inland lakes and streams under NREPA, Part 301 Inland Lakes and Streams. Based on the current provisions of Part 301, Golder is of the opinion that Upjohn Pond is regulated under Part 301. A permit is required from the EGLE to place fill in, excavate soil from, or otherwise modify areas below the ordinary high watermark (OHWM) of Upjohn Lake. A more detailed discussion regarding the regulatory status of wetlands and waters on the APE is presented in the Wetland Delineation Report.

Threatened and Endangered Species

Threatened and endangered species are regulated under the federal Endangered Species Act (ESA) and Michigan's Natural Resources and Environmental Protection Act, PA 451, as amended (NREPA), Part 365: Endangered Species protection. Discussion regarding the potential presence of federal and state-listed threatened and endangered species is presented in the Endangered Species Memo. **Based on review of information obtained during the performance of this assessment, Golder concurs with the statement presented in the MNFI review (Attachment B) that "although legally protected species have been documented within approximately 1.5 miles of this activity, the occurrences are well away from the location and it is not likely that negative impacts will occur".**

Migratory Birds

Migratory birds, their nests, eggs, and young are federally-protected from intentional take by the Migratory Bird Treaty Act. Take is defined by the MBTA as to: "pursue, hunt, shoot, wound, kill, trap, capture, or collect." Federal agencies must comply with the Migratory Bird Treaty Act (MBTA) which prohibits the intentional take of any migratory bird, their eggs, or nests without a permit pursuant to 50 CFR 21. There is no incidental take

permitting process by the USFWS and no specific measures are required to address the presence of these species unless they are directly observed on the APE during planned project activities. However, the USFWS recommends avoiding incidental take to the greatest extent practicable by restricting vegetation clearing during the nesting period for migratory bird species. The nesting period for most of migratory birds in Michigan is May 1 through July 31.

6.0 CLOSING

The above conclusions and regulatory guidance are to be used for general planning purposes only. The USFWS, EGLE, and MDNR have final discretion regarding the regulatory status of threatened and endangered species and wetlands on the APE. Other permits and approvals may be required for various APE development, improvement, or modification activities. Golder's evaluation was performed in accordance with generally accepted procedures for conducting similar assessments.

Golder's conclusions reflect our professional opinion based on information readily available at the time of the evaluation. Discrepancies may arise between current and future evaluations at the APE due to changes in land use and/or hydrology. No warranties, implied or expressed, are made.

Figures: Figure 1. APE Location Map (USGS Topographic Map)
 Figure 2. APE Location Map (Aerial Image)
 Figure 3. NRCS Soil Survey Map
 Figure 4. EGLE Wetland Map
 Figure 5. NWI Map
 Figure 6. FEMA Floodplain Map
 Figure 7. APE Map

Attachments: Attachment A. Mead and Hunt Proposed Property Map
 Attachment B. USFWS IPaC Report
 Attachment C. MNFI Rare Species Review
 Attachment D. APE Photographs

Figures



LEGEND

- APPROXIMATE APE LIMITS
- SECTION
- TOWNSHIP/RANGE



REFERENCE
 1. TOPOGRAPHIC BACKGROUND: ESRI BASEMAP SERVICES. USGS 1:24,000 TOPOGRAPHIC QUADRANGLE SHOWN: "PORTAGE, MI".

CLIENT
 PFIZER INC.

PROJECT
 KALAMAZOO AIRPORT EXPANSION
 PORTAGE TOWNSHIP, KALAMAZOO COUNTY, MICHIGAN

TITLE
APE LOCATION MAP
USGS TOPOGRAPHIC MAP

CONSULTANT	YYYY-MM-DD	2019-07-21
	PREPARED	KJC
	DESIGN	KJC
	REVIEW	JBM
	APPROVED	BJH

Path: M:\Pfizer_Kalamazoo\Map\portage0201_Central\BoreResources\111417_18105133_Bore_Fig01_USGS.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



LEGEND

- APPROXIMATE APE LIMITS
- APPROXIMATE RAILROAD ROW



REFERENCE

1. AERIAL IMAGERY: ESRI, DIGITAL GLOBE, MICROSOFT, BING MAPS. IMAGERY FLOWN 2016.

CLIENT
PFIZER INC.

PROJECT
KALAMAZOO AIRPORT EXPANSION
PORTAGE TOWNSHIP, KALAMAZOO COUNTY, MICHIGAN

TITLE
APE LOCATION MAP
AERIAL IMAGERY

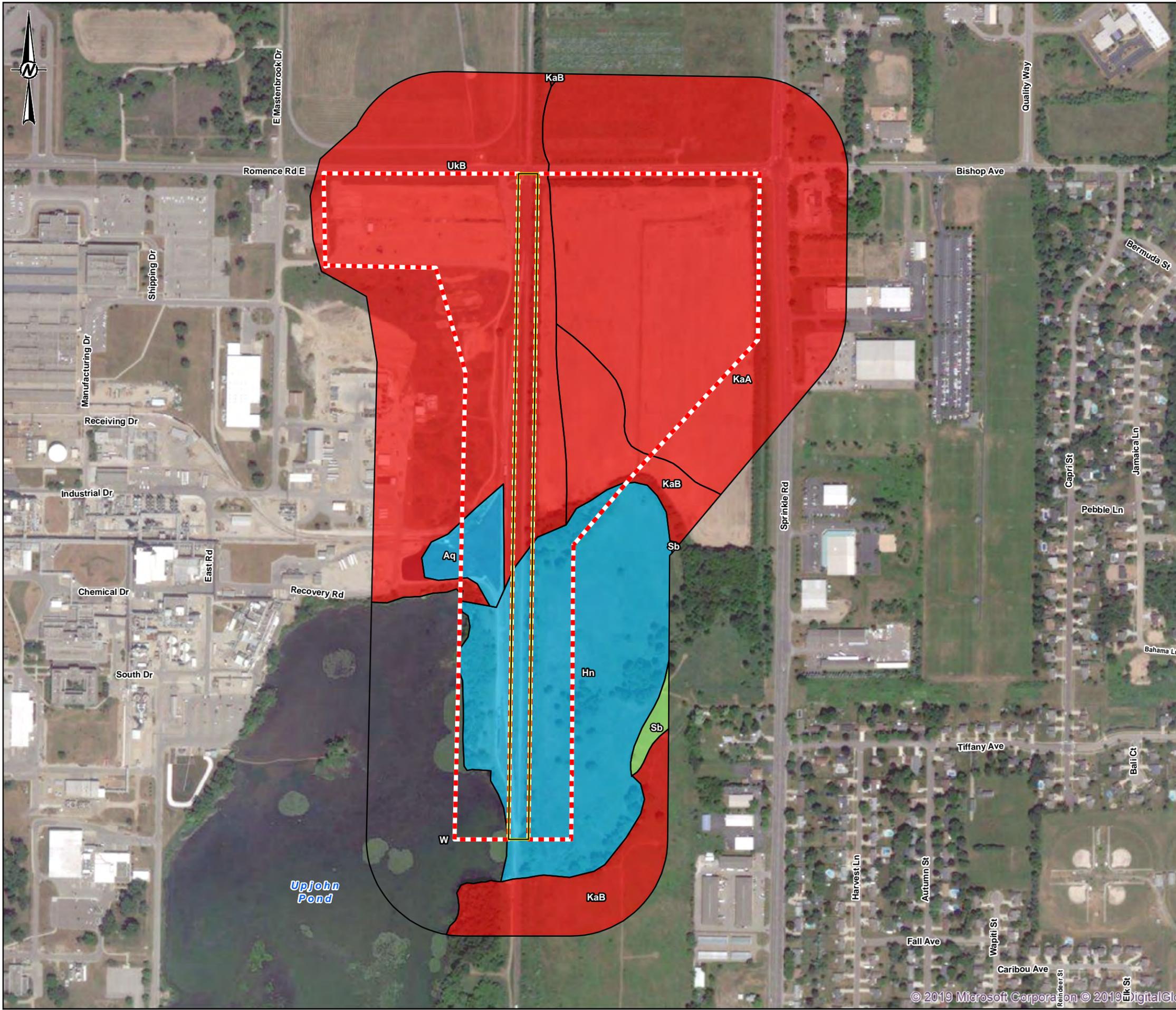
CONSULTANT	YYYY-MM-DD	2019-07-21
GOLDER	PREPARED	KJC
	DESIGN	KJC
	REVIEW	JBM
	APPROVED	BJH

PROJECT No.
18105133

FIGURE
2

Path: M:\PFizer_Kalamazoo\Map\portage\0001_General\Bate\Resources\18105133_Bate_Fig02_Aerial.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



- LEGEND**
- APPROXIMATE APE LIMITS
 - APPROXIMATE RAILROAD ROW
- NRCS SOIL SURVEY**
- NOT HYDRIC (0%)
 - HYDRIC (1 TO 32%)
 - HYDRIC (66 TO 99%)
 - HYDRIC (100%)
- SOIL TYPE (WITH HYDRIC RATING)**
- AQ - AQUENTS AND HISTOSOLS PONDED (100%)
 - HN - HOUGHTON MUCK, 0 TO 1 PERCENT SLOPES (100%)
 - KAA - KALAMAZOO LOAM, 0 TO 2 PERCENT SLOPES (0%)
 - KAB - KALAMAZOO LOAM, 2 TO 6 PERCENT SLOPES (0%)
 - SB - SEBEWA LOAM, 0 TO 2 PERCENT SLOPES (95%)
 - UKB - URBAN LAND-KALAMAZOO COMPLEX (0%)
 - W - WATER



- REFERENCE**
1. AERIAL IMAGERY: ESRI, DIGITAL GLOBE, MICROSOFT, BING MAPS. IMAGERY FLOWN 2016.
 2. SOILS DATASET: USDA-NRCS SOIL SURVEY GEOGRAPHIC (SSURGO),

CLIENT
PFIZER INC.

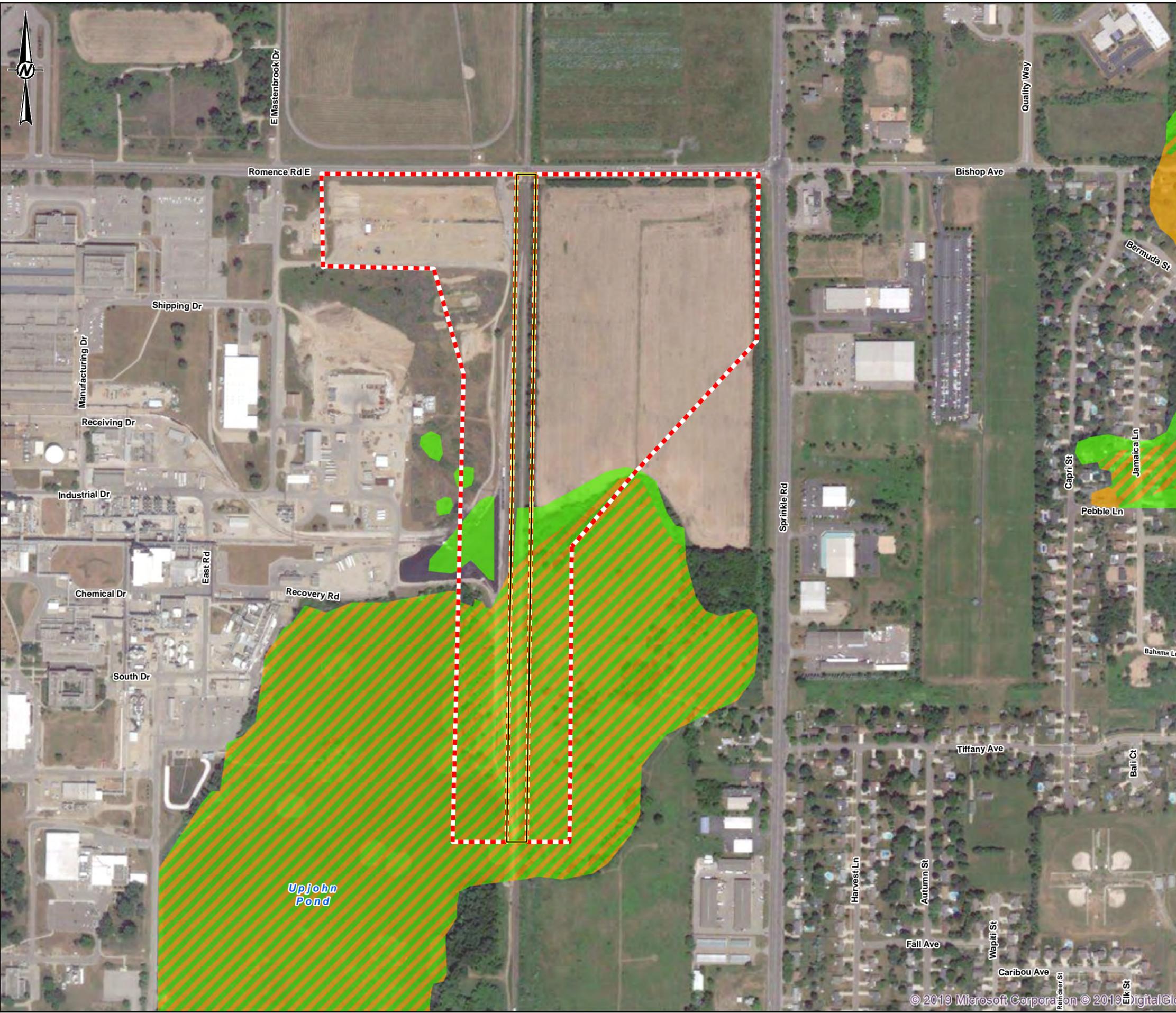
PROJECT
KALAMAZOO AIRPORT EXPANSION
PORTAGE TOWNSHIP, KALAMAZOO COUNTY, MICHIGAN

TITLE
NRCS SOIL SURVEY MAP

CONSULTANT	YYYY-MM-DD	2019-07-21
GOLDER	PREPARED	KJC
	DESIGN	KJC
	REVIEW	JBM
	APPROVED	BJH

Path: M:\PFizer_Kalamazoo\Maping\0001_General\Bate\Resources\11x17_18105133_Bate_Fig03_Soils.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11x17



- LEGEND**
- APPROXIMATE APE LIMITS
 - APPROXIMATE RAILROAD ROW
- EGLE WETLANDS**
- SOIL AREAS WHICH INCLUDE WETLAND SOILS
 - WETLANDS AS IDENTIFIED ON NWI AND/OR MIRIS MAPS
 - WETLANDS AS IDENTIFIED ON NWI AND/OR MIRIS MAPS AND SOIL AREAS WHICH INCLUDE WETLAND SOILS



REFERENCE

1. AERIAL IMAGERY: ESRI, DIGITAL GLOBE, MICROSOFT, BING MAPS. IMAGERY FLOWN 2016.
2. WETLANDS DATASET: MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY.

CLIENT
PFIZER INC.

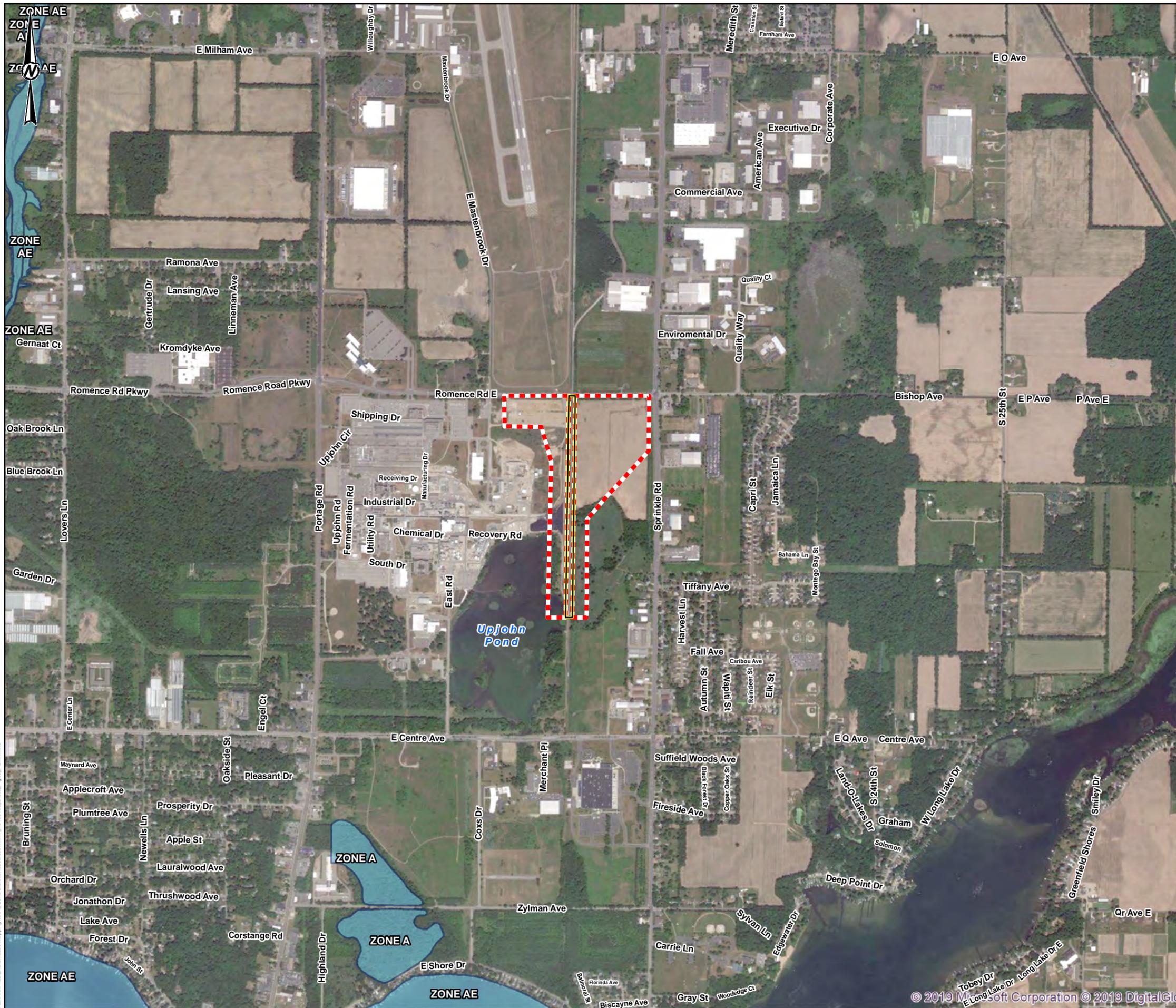
PROJECT
KALAMAZOO AIRPORT EXPANSION
PORTAGE TOWNSHIP, KALAMAZOO COUNTY, MICHIGAN

TITLE
EGLE WETLAND MAP

CONSULTANT	YYYY-MM-DD	2019-07-21
	PREPARED	KJC
	DESIGN	KJC
	REVIEW	JBM
	APPROVED	

Path: M:\P\p\Kalamazoo\Map\pfig0001_General\BateResources\11x17_18105133_Bate_Fig05_EGLE.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11x17

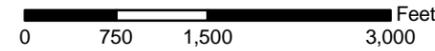


LEGEND

- APPROXIMATE APE LIMITS
- APPROXIMATE RAILROAD ROW
- ☹ FEMA 100-YEAR FLOODPLAIN

ZONE AE = AN AREA INUNDATED BY 1% ANNUAL CHANCE FLOODING, FOR WHICH BFES HAVE BEEN DETERMINED.

ZONE A = AN AREA INUNDATED BY 1% ANNUAL CHANCE FLOODING, FOR WHICH NO BASE FLOOD ELEVATIONS HAVE BEEN DETERMINED.



REFERENCE

1. AERIAL IMAGERY: ESRI, DIGITAL GLOBE, MICROSOFT, BING MAPS. IMAGERY FLOWN 2016.
2. FLOODPLAIN DATASET: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

CLIENT
PFIZER INC.

PROJECT
KALAMAZOO AIRPORT EXPANSION
PORTAGE TOWNSHIP, KALAMAZOO COUNTY, MICHIGAN

TITLE
**FEMA
100-YR FLOODPLAIN MAP**

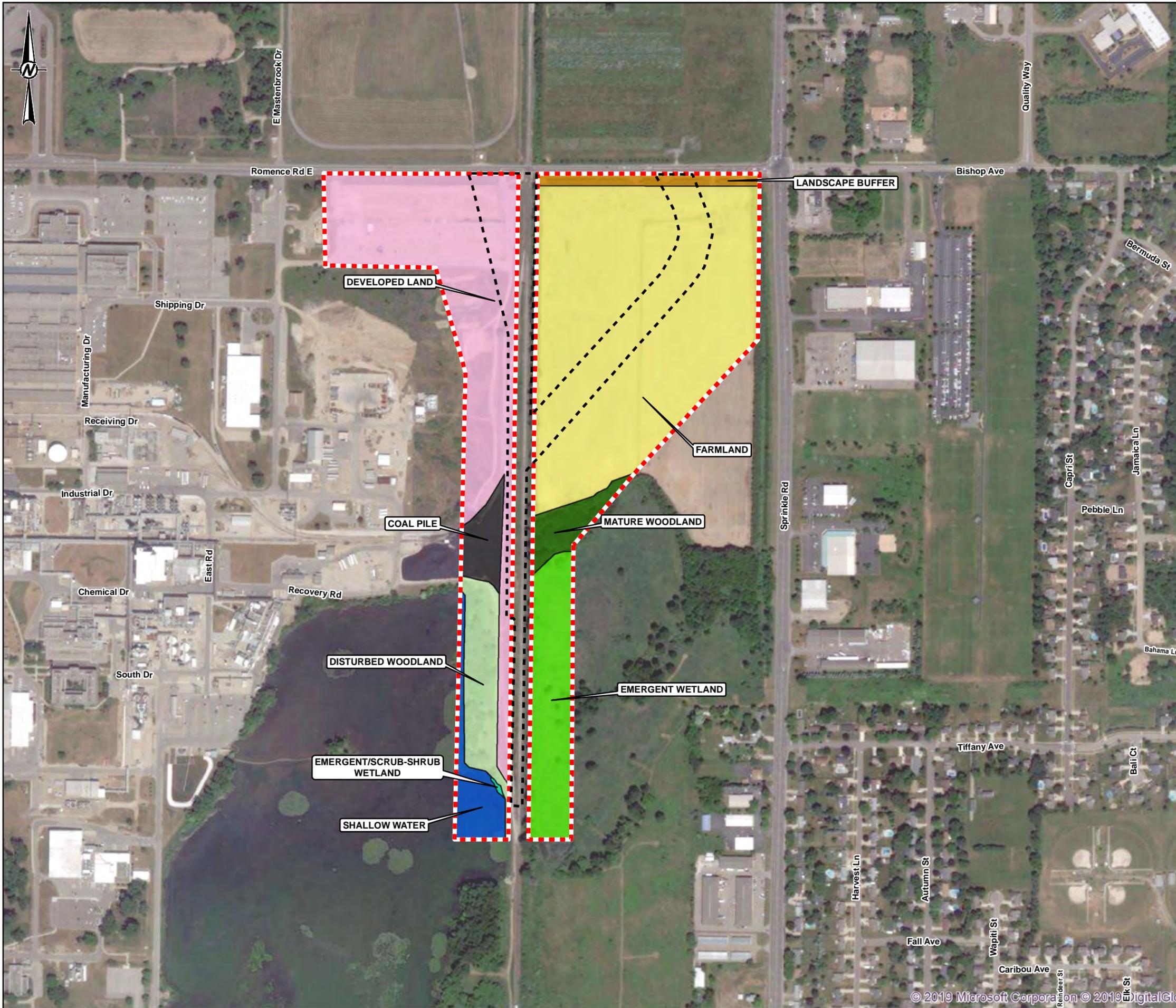
CONSULTANT	YYYY-MM-DD	2019-07-21
GOLDER	PREPARED	KJC
	DESIGN	KJC
	REVIEW	JBM
	APPROVED	BJH

PROJECT No.
18105133

FIGURE
6

Path: M:\P\Kalamazoo\Map\18105133_001_General\Bates\Bates.mxd, General\Bates\Bates.mxd, 18105133_Bates_Fig6_FEMA.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in

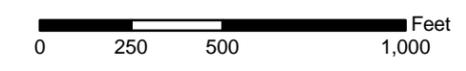


LEGEND

- APPROXIMATE APE LIMITS
- APPROXIMATE PROJECT LIMITS

LAND USE/COVER TYPE

- COAL PILE
- DEVELOPED LAND
- DISTURBED WOODLAND
- EMERGENT WETLAND
- EMERGENT/SCRUB-SHRUB WETLAND
- FARMLAND
- LANDSCAPE BUFFER
- MATURE WOODLAND
- SHALLOW WATER



REFERENCE

1. AERIAL IMAGERY: ESRI, DIGITAL GLOBE, MICROSOFT, BING MAPS. IMAGERY FLOWN 2016.
2. WETLAND BOUNDARIES BASED ON FIELD DELINEATION CONDUCTED BY GOLDER ON APRIL 15, 2019.

CLIENT
PFIZER INC.

PROJECT
**KALAMAZOO AIRPORT EXPANSION
 PORTAGE TOWNSHIP, KALAMAZOO COUNTY, MICHIGAN**

TITLE
SITE MAP WITH LAND USE/COVER TYPES

CONSULTANT	YYYY-MM-DD	2019-07-21
	PREPARED	KJC
	DESIGN	KJC
	REVIEW	JBM
	APPROVED	BJH

Path: M:\P\Kalamazoo\Map\18105133_General\BoreResources\18105133_Bore_Fig07_SiteMap.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11x17

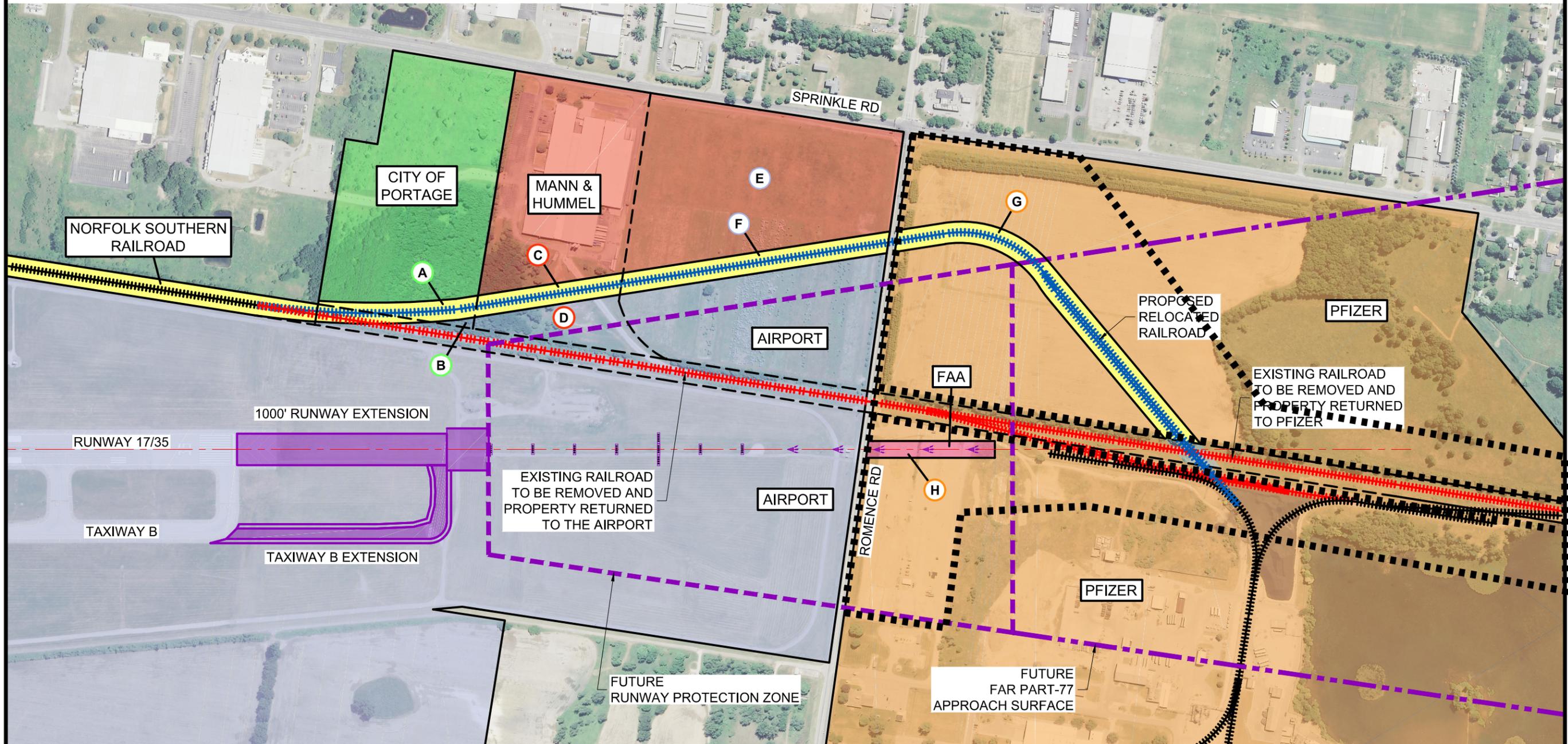
ATTACHMENT A

Mead and Hunt Proposed Property Map

PROPOSED PROPERTY
 WITH PROPOSED RAILROAD



APPROXIMATE APE LIMITS
(PFIZER PROPERTY)



NOTE: CITY OF PORTAGE, MANN & HUMMEL, AND PFIZER PARCEL BOUNDARIES HAVE BEEN ESTIMATED USING DATA FROM THE KALAMAZOO COUNTY GIS SYSTEM.

- | | | | |
|--|--|--|---|
| CITY OF PORTAGE | MANN & HUMMEL | AIRPORT | PFIZER |
| AREA DEEDED TO NORFOLK SOUTHERN RAILROAD | AREA DEEDED TO NORFOLK SOUTHERN RAILROAD | AREA DEEDED TO MANN & HUMMEL | AREA DEEDED (TO BE DETERMINED) |
| AREA DEEDED TO THE AIRPORT | AREA DEEDED TO THE AIRPORT | AREA DEEDED TO NORFOLK SOUTHERN RAILROAD | AREA DEEDED TO FAA FOR MALSR CRITICAL AREA*
*ACTUAL TYPE OF ACQUISITION TO BE DETERMINED |



These documents shall not be used for any purpose or project for which it is not intended. Mead & Hunt shall be indemnified by the client and held harmless from all claims, damages, liabilities, losses, and expenses, including attorney's fees and costs, arising out of such misuse or use of the documents. In addition, unauthorized reproduction of these documents, in part or as a whole, is prohibited.

**KALAMAZOO/BATTLE CREEK
 INTERNATIONAL AIRPORT
 RUNWAY 17/35 RIM, EXTENSION
 AND RAILROAD RELOCATION
 KALAMAZOO, MICHIGAN**

ISSUED

M&H NO.: 1113900-141424.01
 DATE: 4/23/18
 DESIGNED BY: AEF
 DRAWN BY: AEF
 CHECKED BY: SADW
 DO NOT SCALE DRAWINGS

SHEET CONTENTS
 PROPERTY INVOLVED
 IN RAILROAD
 RELOCATION

SHEET NO.

ATTACHMENT B

USFWS IPaC List

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Kalamazoo County, Michigan



Local office

Michigan Ecological Services Field Office

☎ (517) 351-2555

📠 (517) 351-1443

2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360

<http://www.fws.gov/midwest/endangered/section7/s7process/step1.html>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
 2. [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.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> This species only needs to be considered if the following condition applies: <ul style="list-style-type: none">• All Projects: Project is Within EMR Range No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2202	Threatened

Insects

NAME	STATUS
Mitchell's Satyr Butterfly <i>Neonympha mitchellii mitchellii</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8062	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ 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 habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Dec 1 to Aug 31

Bobolink *Dolichonyx oryzivorus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Jul 31

Cerulean Warbler *Dendroica cerulea*

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

Henslow's Sparrow *Ammodramus henslowii*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3941>

Breeds May 1 to Aug 31

Lesser Yellowlegs *Tringa flavipes*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

Breeds elsewhere

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Willow Flycatcher *Empidonax traillii*

Breeds May 20 to Aug 31

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/3482>

Wood Thrush *Hylocichla mustelina*

Breeds May 10 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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 AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1E](#)

LAKE

[L1UBHx](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

ATTACHMENT C

MNFI Report

Mr. Kenneth Leister, CWB
Project Ecologist
Golder Associates Inc.
15851 South US 27, Suite 50
Lansing, MI 48906
(517) 482-2262

April 3, 2019

Re: Rare Species Review #2349 – Kalamazoo-Battle Creek Airport Expansion, City of Portage, Kalamazoo County, MI (T3S R11W Section 13).

Mr. Leister:

The location for the proposed project was checked against known localities for rare species and unique natural features, which are recorded in the Michigan Natural Features Inventory (MNFI) natural heritage database. This continuously updated database is a comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. Records in the database indicate that a qualified observer has documented the presence of special natural features. The absence of records in the database for a particular site may mean that the site has not been surveyed. The only way to obtain a definitive statement on the status of natural features is to have a competent biologist perform a complete field survey.

Under Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection, "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), Wildlife Division. Responsibility to protect endangered and threatened species is not limited to the lists below. Other species may be present that have not been recorded in the database.



MSU EXTENSION

Michigan Natural Features Inventory

PO Box 13036
Lansing MI 48901

(517) 284-6200
Fax (517) 373-9566

mnfi.anr.msu.edu

Although legally protected resources have been documented within 1.5 miles of this activity, the occurrences are well away from the location and it is **not likely** that negative impacts will occur. Keep in mind that MNFI cannot fully evaluate this project without visiting the project site. MNFI offers several levels of [Rare Species Reviews](#), including field surveys which I would be happy to discuss with you.

Sincerely,

Michael A. Sanders

Michael A. Sanders
Environmental Review Specialist/Zoologist
Michigan Natural Features Inventory

Comments for Rare Species Review #2349: It is important to note that it is the applicant’s responsibility to comply with both state and federal threatened and endangered species legislation. Therefore, if a state listed species occurs at a project site, and you think you need an endangered species permit please contact: Casey Reitz, Wildlife Division, Michigan Department of Natural Resources, 517-284-6210, or ReitzC@michigan.gov. If a federally listed species is involved and, you think a permit is needed, please contact Carrie Tansy, Endangered Species Program, U.S. Fish and Wildlife Service, East Lansing office, 517-351-8375, or Carrie_Tansy@fws.gov.

Special concern species and natural communities are not protected under endangered species legislation, but efforts should be taken to minimize any or all impacts. Species classified as special concern are species whose numbers are getting smaller in the state. If these species continue to decline they would be recommended for reclassification to threatened or endangered status.

Please consult MNFI’s Rare Species Explorer for additional information on management and survey methods regarding the listed species: <http://mnfi.anr.msu.edu/explorer/search.cfm>.

Table 1: Occurrences of threatened & endangered species within 1.5 miles of RSR #2349

ELCAT	SNAME	SCOMNAME	USESA	SPROT	G_RANK	S_RANK	FIRSTOBS	LASTOBS
Plant	<i>Juncus scirpoides</i>	Scirpus-like rush		T	G5	S2	1937	1942-07-16
Plant	<i>Linum virginianum</i>	Virginia flax		T	G4G5	S2	1947	1947
Plant	<i>Rhynchospora scirpoides</i>	Bald-rush		T	G4	S2	1931	1955-09-09

Of concern:

No concerns with the list. Historic occurrences well away from project site.

Table 2: Occurrences of special concern species & other natural features within 1.5 miles of RSR #2349

ELCAT	SNAME	SCOMNAME	USESA	SPROT	G_RANK	S_RANK	FIRSTOBS	LASTOBS
Animal	<i>Bombus pensylvanicus</i>	American bumble bee		SC	G3G4	SNR	1963-09-05	1963-09-05
Animal	<i>Pandion haliaetus</i>	Osprey		SC	G5	S4	2017	2017
Animal	<i>Bombus affinis</i>	Rusty-patched bumble bee	LE	SC	G1	SNR	1963-09-10	1963-09-10
Plant	<i>Baptisia lactea</i>	White or prairie false indigo		SC	G4Q	S3	1979-07-17	1979-07-17
Plant	<i>Juncus dichotomus</i>	Forked rush		SC	G5	SNR	1937-07-09	1937-07-09

Of concern:

No concerns with the list. Occurrences well away from project site.

Codes to accompany Tables:

State Protection Status Code Definitions (SPROT)

E: Endangered
T: Threatened
SC: Special concern

Federal Protection Status Code Definitions (USESA)

LE = listed endangered
LT = listed threatened
LELT = partly listed endangered and partly listed threatened
PDL = proposed delist
E(S/A) = endangered based on similarities/appearance
PS = partial status (federally listed in only part of its range)
C = species being considered for federal status

Global Heritage Status Rank Definitions (GRANK)

The priority assigned by [NatureServe](#)'s national office for data collection and protection based upon the element's status throughout its entire world-wide range. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.

G1 = critically imperiled globally because of extreme rarity (5 or fewer occurrences range-wide or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G2 = imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.

G3: Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g. a single western state, a physiographic region in the East) or because of other factor(s) making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.

G4: Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5: Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

Q: Taxonomy uncertain

State Heritage Status Rank Definitions (SRANK)

The priority assigned by the Michigan Natural Features Inventory for data collection and protection based upon the element's status within the state. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.

S1: Critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation in the state.

S2: Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.

S3: Rare or uncommon in state (on the order of 21 to 100 occurrences).

S4 = apparently secure in state, with many occurrences.

S5 = demonstrably secure in state and essentially ineradicable under present conditions.

SX = apparently extirpated from state.

Rare Species Review #2349
Golder Associates, Inc.
Kalamazoo-Battle Creek Airport Expansion
City of Portage
Kalamazoo County, MI
April 3, 2019

For projects involving Federal funding or a Federal agency authorization

The following information is provided to assist you with Section 7 compliance of the Federal Endangered Species Act (ESA). The ESA directs all Federal agencies "to work to conserve endangered and threatened species. Section 7 of the ESA, called "Interagency Cooperation, is the means by which Federal agencies ensure their actions, including those they authorize or fund, do not jeopardize the existence of any listed species."

This activity falls within the range of five (4) federally listed/proposed species which have been identified by the U.S. Fish and Wildlife Service (USFWS) to occur in Kalamazoo County, Michigan:

Federally Endangered

Indiana bat - there appears to be suitable habitat within the 1.5-mile search buffer. The state and federally endangered Indiana bats (*Myotis sodalis*) are found only in the eastern United States and are typically confined to the southern three tiers of counties in Michigan. Indiana bats that summer in Michigan winter in caves in Indiana and Kentucky. This species forms colonies and forages in riparian and mature floodplain habitats. Nursery roost sites are usually located under loose bark or in hollows of trees near riparian habitat. Indiana bats typically avoid houses or other artificial structures and typically roost underneath loose bark of dead elm, maple and ash trees. Other dead trees used include oak, hickory and cottonwood.

Foraging typically occurs over slow-moving, wooded streams and rivers as well as in the canopy of mature trees. Movements may also extend into the outer edge of the floodplain and to nearby solitary trees. A summer colony's foraging area usually encompasses a stretch of stream over a half-mile in length. Upland areas isolated from floodplains and non-wooded streams are generally avoided.

Management and Conservation: the suggested seasonal tree cutting range for Indiana bat is between October 1 and March 31 (i.e., no cutting April 1-September 30). This applies throughout the Indiana bat range in Michigan.

Mitchell's satyr butterfly – there does not appear to be suitable habitat within 1.5-miles of the project site. The federally endangered and state endangered Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*) is restricted to calcareous wetlands known as prairie fens. In Michigan, this habitat is characterized by scattered tamaracks, poison sumac, and dogwood with a ground cover of sedges, shrubby cinquefoil, and a variety of herbaceous species with prairie affinities. Adult Mitchell's satyr butterflies are active two to three weeks each summer, with males emerging before females. Adult flight dates are from mid-June to mid-July. Larvae hibernate near the bottom of a sedge. The larval food plant is thought to be several species of sedge. The caterpillar is green with white stripes.

Management and Conservation: the primary threat to the continued survival of this species is habitat loss and modification. Many of the wetland complexes occupied currently have been altered or drained for agriculture or development. Wetland alteration is responsible for extirpating the single known satyr population in Ohio. Wetland alteration also can lead to invasion by exotic plant species such as glossy buckthorn (*Rhamnus frangula*), purple loosestrife (*Lythrum salicaria*), common buckthorn (*Rhamnus cathartica*), and the common reed (*Phragmites australis*). In addition, landscape-scale processes that may be important for maintaining suitable satyr habitat and/or creating new habitat, such as wildfires, fluctuations in hydrologic regimes, and flooding from beaver (*Castor canadensis*) activity, have been virtually eliminated or altered throughout the species' range.

Rusty-patched bumble bee – there appears to be suitable habitat within 1.5 miles of the project site. The federally endangered and state special concern rusty-patched bumble bee (*Bombus affinis*) will occupy a wide range of habitats including dunes, marshes, forests, farmland and urban locales. This habitat generalist usually nests underground in vacant rodent burrows. Rusty-patched bumble bees are active from mid-April to late-October.

Management and Conservation: Once common and widespread, this species, along with several other North American bumblebees has declined dramatically range-wide. Factors contributing to these declines include pesticides, habitat loss, and the spread of bumblebee pathogens. Conservation strategies for bumblebees center around preserving healthy natural habitat areas, reducing pesticide/herbicide use, and promoting native wildflower reestablishment within urban and agricultural landscapes. Additionally, planting hedgerows and restoring native grasses along field margins, and in urban parks and residential yards provides habitat for small mammals, whose abandoned holes will in turn become bumblebee nesting and hibernating habitat.

Federally Threatened

Northern long-eared bat - Northern long-eared bat (*M. septentrionalis*) numbers in the northeast US have declined up to 99 percent. Loss or degradation of summer habitat, wind turbines, disturbance to hibernacula, predation, and pesticides have contributed to declines in Northern long-eared bat populations. However, no other threat has been as severe to the decline as White-nose Syndrome (WNS). WNS is a fungus that thrives in the cold, damp conditions in caves and mines where bats hibernate. The disease is believed to disrupt the hibernation cycle by causing bats to repeatedly awake thereby depleting vital energy reserves. This species was federally listed in May 2015 primarily due to the threat from WNS.

Although no known hibernacula or roost trees have been documented within 1.5 miles of the project area, this activity occurs within the designated [WNS zone](#) (i.e., within 150 miles of positive counties/districts impacted by WNS). In addition, there appears to be suitable habitat within the buffer. The USFWS has prepared a [dichotomous key](#) to help determine if this action may cause prohibited take of this bat. Please consult the USFWS [Endangered Species Page](#) for more information.

Also called northern bat or northern myotis, this bat is distinguished from other *Myotis* species by its long ears. In Michigan, northern long-eared bats hibernate in abandoned mines and caves in the Upper Peninsula; they also commonly hibernate in the Tippy Dam spillway in Manistee County. This species is a regional migrant with migratory distance largely determined by locations of suitable hibernacula sites.

Northern long-eared bats typically roost and forage in forested areas. During the summer, these bats roost singly or in colonies underneath bark, in cavities or in crevices of both living and dead trees. Roost trees are selected based on the suitability to retain bark or provide cavities or crevices. Common roost trees in southern Lower Michigan include species of ash, elm and maple. Foraging occurs primarily in areas along woodland edges, woodland clearings and over small woodland ponds. Moths, beetles and small flies are common food items. Like all temperate bats this species typically produces only 1-2 young per year.

Management and Conservation: when there are no known roost trees or hibernacula in the project area, we encourage you to conduct tree-cutting activities and prescribed burns in forested areas during October 1 through March 31 when possible, but you are not required by the ESA to do so. When that is not possible, we encourage you to remove trees prior to June 1 or after July 31, as that will help to protect young bats that may be in forested areas but are not yet able to fly.

Eastern massasauga rattlesnake – This project falls outside of Tier 1 or Tier 2 Level Eastern massasauga rattlesnake habitat as designated by the US Fish and Wildlife Service. Tier 1 habitat indicates areas where Eastern massasaugas are known to occur. Tier 2 habitat indicates areas with high potential for Eastern massasaugas to occur. The federal and state threatened Eastern massasauga rattlesnake (*Sistrurus catenatus*) is Michigan's only venomous snake and is found in a variety of wetland habitats including bogs, fens, shrub swamps, wet meadows, marshes, moist grasslands, wet prairies, and floodplain forests. Eastern massasaugas occur throughout the Lower Peninsula but are not found in the

Upper Peninsula. 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. These snakes normally overwinter in crayfish or small mammal burrows often close to the groundwater level and emerge in spring as water levels rise. During late spring, these snakes move into adjacent uplands they spend the warmer months foraging in shrubby fields and grasslands in search of mice and voles, their favorite food.

Often described as “shy and sluggish”, these snakes avoid human confrontation and are not prone to strike, preferring to leave the area when they are threatened. However, like any wild animal, they will protect themselves from anything they see as a potential predator. Their short fangs can easily puncture skin and they do possess potent venom. Like many snakes, the first human reaction may be to kill the snake, but it is important to remember that all snakes play vital roles in the ecosystem. Some may eat harmful insects. Others like the massasauga consider rodents a delicacy and help control their population. Snakes are also a part of a larger food web and can provide food to eagles, herons, and several mammals.

Management and Conservation: any sightings of these snakes should be reported to the Michigan Department of Natural Resources, Wildlife Division. If possible, a photo of the live snake is also recommended.

USFWS Section 7 Consultation Technical Assistance can be found at:

<https://www.fws.gov/midwest/endangered/section7/s7process/index.html>

The website offers step-by-step instructions to guide you through the Section 7 consultation process with prepared templates for documenting “no effect.” as well as requesting concurrence on “may affect, but not likely to adversely affect” determinations.

Please let us know if you have questions.

Mike Sanders
Environmental Review Specialist/Zoologist
Sander75@msu.edu
517-284-6215

ATTACHMENT C

APE Photographs

**PFIZER – RUNWAY 17/35 EXTENSION AND TAXIWAY C REALIGNMENT
GENERAL BIOTIC RESOURCES EVALUATION
KALAMAZOO COUNTY, MICHIGAN**

PHOTO 1

Photo taken on by Pfizer staff on April 15, 2019 depicting typical conditions in areas of developed land (from near the north end of the west side of the APE facing northeast).



PHOTO 2

Photo taken on by Pfizer staff on April 15, 2019 depicting typical conditions in areas of developed land and railroad ROW (from near the south end of the APE, west of the railroad RWO facing north).

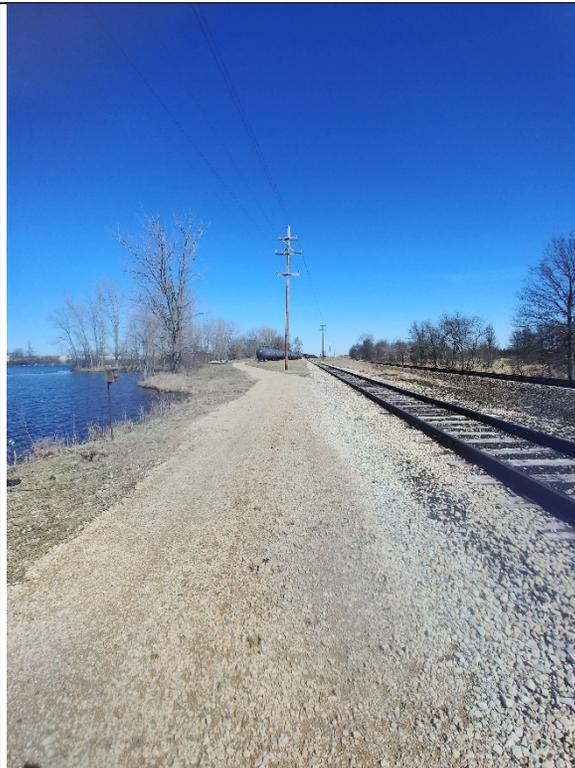


PHOTO 3

Photo taken on by Pfizer staff on April 15, 2019 depicting typical conditions in areas of disturbed woodland (from near the middle of the south end of the west side of the APE facing north).



PHOTO 4

Photo taken on by Pfizer staff on April 15, 2019 depicting typical emergent wetland (from near the middle of the south end of the east side of the APE facing north).



PHOTO 5

Photo taken on by Pfizer staff on April 15, 2019 depicting typical emergent/scrub-shrub wetland (from near the south end of the west side of the APE facing northwest).



PHOTO 6

Photo taken on by Pfizer staff on April 15, 2019 depicting typical conditions in the farmland area (from near the middle of the east half of the APE facing north).



PHOTO 7

Photo taken on by Pfizer staff on April 15, 2019 depicting typical conditions in the farmland area and landscape buffer (from near the northwest part of the farmed area facing northeast). Landscape buffer (evergreen trees) evident in upper left part of photo.



PHOTO 8

Photo taken on by Pfizer staff on April 15, 2019 depicting typical conditions in the mature woodland (from near the west side of the woodland facing northeast).

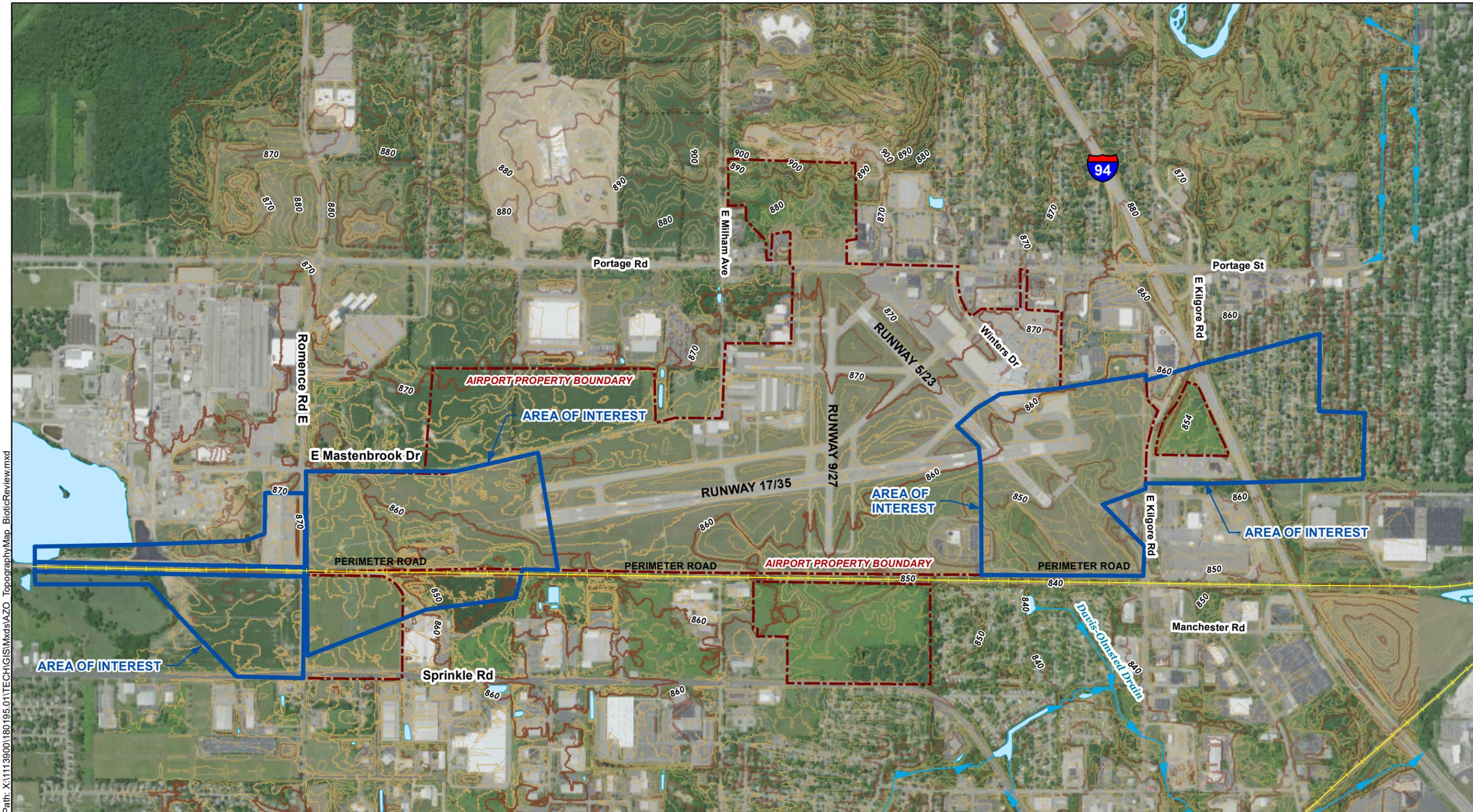


PHOTO 9

Photo taken on by Pfizer staff on April 15, 2019 depicting typical conditions in the shallow water area (from near the west side of the south end of the APE facing north). Shallow water on left side of photo, developed land on the right.



Appendix D. Site Topography



Path: X:\11139001\180195.01\TECH\GIS\Mxds\AZO_TopographyMap_BioticReview.mxd

Image Source: FSA-NAIP July 2018

Topography Map Kalamazoo/Battle Creek International Airport

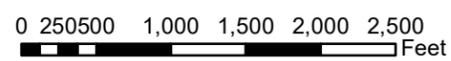
Data Sources:
 Airport Property Boundary: AZO Airport Layout Plan
 Contours: 2-foot elevation contours created by Remote Sensing & GIS Research and Outreach Services, Michigan State University, 2015. Obtained from Kalamazoo County GIS.
 Lakes & Drains: Obtained from Kalamazoo County GIS

Legend

- Approximate Airport Property Boundary
- Wetland/Biotic Area of Interest
- Pond/Lake
- County Drain
- Railroads

Contour Type

- Index
- Index Depression
- Intermediate
- Intermediate Depression



Project Location

T3S, R11W, Sections 1, 2, 11, and 12
 T2S, R11W, Section 35
 Kalamazoo/Battle Creek Intl Airport
 City of Kalamazoo
 Kalamazoo County, MI
 Field work conducted: June 6 - 7, 2019
 and August 19 - 21, 2019;
 April 15, 2019 (Golder, 2019)

**Appendix E. USFWS IPaC Listing of Species, State of Michigan
Resource Review, and Consultation Documentation**



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
<http://www.fws.gov/midwest/EastLansing/>

In Reply Refer To:

November 02, 2021

Consultation Code: 03E16000-2022-SLI-0131

Event Code: 03E16000-2022-E-00683

Project Name: Kalamazoo/Battle Creek International Airport (AZO) Runway 17/35 Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The 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.

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 several important steps in evaluating the effects of a project on listed species. Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at <http://www.fws.gov/midwest/endangered/section7/s7process/index.html>. This website contains step-by-step instructions to help you determine if your project may affect listed species and lead you through the section 7 consultation process.

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 ECOS-IPaC website (<http://ecos.fws.gov/ipac/>) at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, 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.

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 prohibitions include the take and disturbance of eagles. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <https://www.fws.gov/midwest/eagle/permits/index.html> 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/birds/policies-and-regulations/administrative-orders/executive-orders.php>.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

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

Consultation Code: 03E16000-2022-SLI-0131

Event Code: Some(03E16000-2022-E-00683)

Project Name: Kalamazoo/Battle Creek International Airport (AZO) Runway 17/35 Extension

Project Type: TRANSPORTATION

Project Description: Environmental Assessment to evaluate proposed actions including

- Extend Runway 17 end by 150 feet
- Extend Runway 35 end by 1,000 feet
- Realign Taxiway C at the approach end of Runway 17
- Extend parallel Taxiway B to match Runway 17/35 extensions
- Relocate an existing railroad spur (owned by Norfolk Southern Railroad) on the south end of the Airport, including land acquisition
- Acquire aviation easements/land acquisition in both Runway 17 and Runway 35 approaches for obstruction clearing
- Clear obstruction(s) in Runway 17/35 approaches
- Relocate existing airfield NAVAIDs
- Conduct noise analysis to lift/modify existing noise curfew for aircraft operating at night
- Develop new aircraft approach and departure procedures for Runway 17/35
- Complete hazardous materials Phase I and Phase II Environmental Site Assessments on acquired property

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.220090400000004,-85.54699707278328,14z>



Counties: Kalamazoo 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. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ecos.fws.gov/ipac/project/P73RJ2EM2FBXXKRIDKPK3NTYSQ/documents/generated/5663.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 General project design guidelines: https://ecos.fws.gov/ipac/project/P73RJ2EM2FBXXKRIDKPK3NTYSQ/documents/generated/5664.pdf	Threatened

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: <ul style="list-style-type: none"> ▪ For all Projects: Project is within EMR Range Species profile: https://ecos.fws.gov/ecp/species/2202 General project design guidelines: https://ecos.fws.gov/ipac/project/P73RJ2EM2FBXXKRIDKPK3NTYSQ/documents/generated/5280.pdf	Threatened

Clams

NAME	STATUS
Snuffbox Mussel <i>Epioblasma triquetra</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4135	Endangered

Insects

NAME	STATUS
Mitchell's Satyr Butterfly <i>Neonympha mitchellii mitchellii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8062	Endangered
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.

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.

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 habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
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)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list 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
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31

NAME	BREEDING SEASON
<p>Cerulean Warbler <i>Dendroica cerulea</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/2974</p>	Breeds Apr 22 to Jul 20
<p>Henslow's Sparrow <i>Ammodramus henslowii</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/3941</p>	Breeds May 1 to Aug 31
<p>Lesser Yellowlegs <i>Tringa flavipes</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Red-headed Woodpecker <i>Melanerpes erythrocephalus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Sep 10
<p>Rusty Blackbird <i>Euphagus carolinus</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere
<p>Wood Thrush <i>Hylocichla mustelina</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	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 and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee

was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

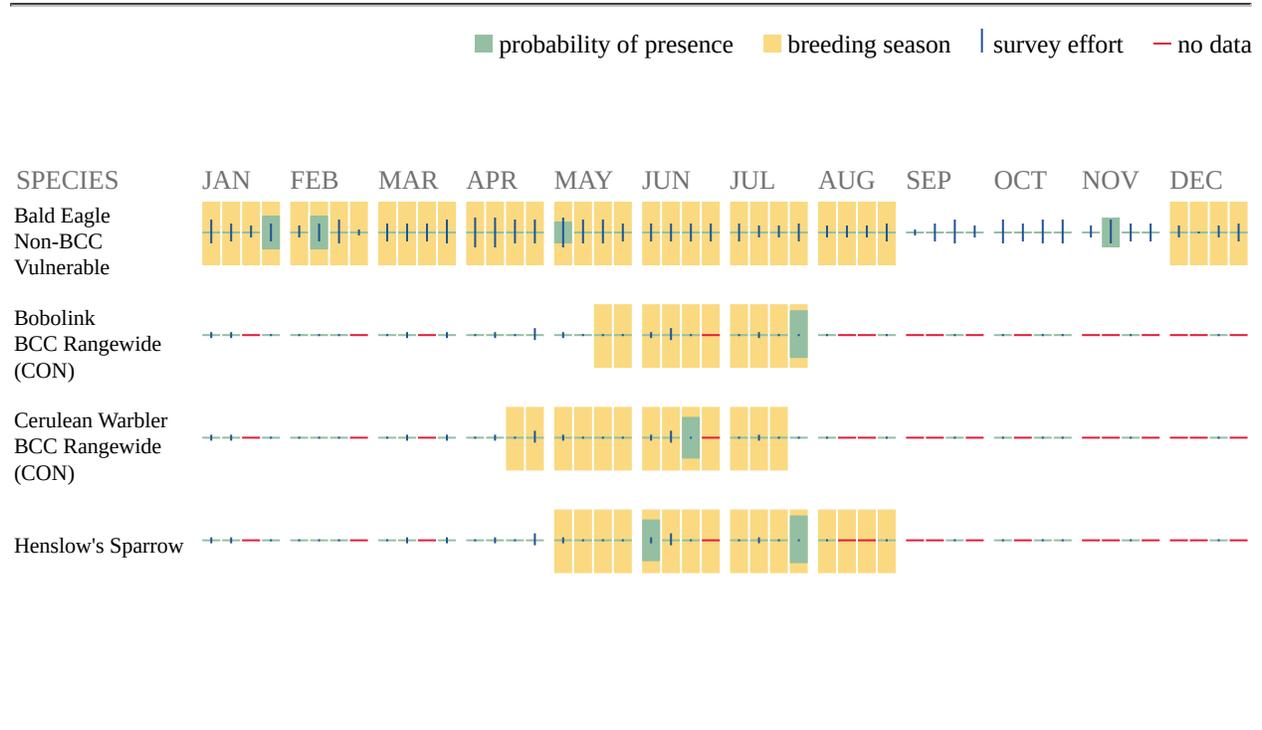
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (-)

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

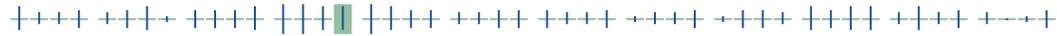
Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

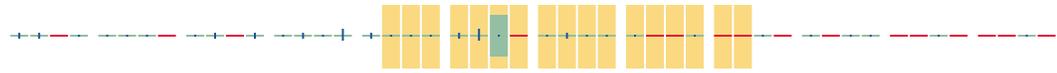


BCC Rangewide
(CON)

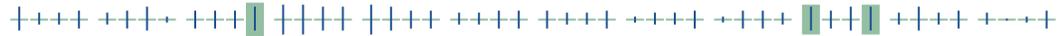
Lesser Yellowlegs
BCC Rangewide
(CON)



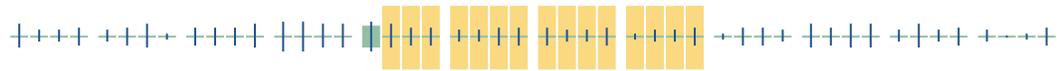
Red-headed
Woodpecker
BCC Rangewide
(CON)



Rusty Blackbird
BCC - BCR



Wood Thrush
BCC Rangewide
(CON)



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as

warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

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

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

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

FRESHWATER EMERGENT WETLAND

- [PEM1C](#)
 - [PEM1Cd](#)
 - [PEM1F](#)
-



GRETCHEN WHITMER
GOVERNOR

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



LIESL EICHLER CLARK
DIRECTOR

July 7, 2020

VIA EMAIL

Mr. Eric Anton Bjorkman
Kalamazoo/Battle Creek International Airport
5235 Portage Road
Kalamazoo, Michigan 49002

Dear Mr. Bjorkman:

SUBJECT: Transportation Preliminary Database Search
Project Name: AZO Rwy 17/35 Extension EA / Kalamazoo, Michigan
Site Name: 39 - AZO Rwy 17/35 Extension EA
Submission Number: HP0-8NT5-00ZH1
Location: T02S, R11W, Section 35

This letter provides the results of the Transportation Preliminary Database Search that was requested on June 4, 2020, 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:

- Historical 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

Mapped 303 regulated wetlands were noted in the database as being observed within 500 feet of your project area at the following locations:

- Far south end of project buffer zone area at Upjohn Pond.
- Immediately south of RW 35 and extending south approximately 1,360 LF and east beyond the project buffer zone in the vicinity of the Mann+Hummel USA South Campus building.

The database did not indicate occurrences of the Northern long-eared bat or the Indiana bat which are federally listed as an endangered species. Indiana bats, however, are considered potentially present wherever suitable habitat exists within their range. Your project location is within the range of the Indiana bat in Michigan. You should consult with the United States Fish & Wildlife Service (USFWS) prior to performing work or applying for permits.

The database search did not indicate any occurrences for state-listed T&E species, EMR habitat, mussels, contaminated sites, and Section 10 waterways.

** Historical 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 Ms. Casey Reitz, MDNR, at 517-284-6210 or reitzc@michigan.gov.

This review does not include a comprehensive search for federally listed species. The project location must be screened using the self-service USFWS IPaC website. If your project will potentially impact a federally listed T&E species, you should contact USFWS Ecological Services Field Office at 517-351-2555 or eastlansing@fws.gov to begin the consultation process. If your project requires a permit from the WRD, the application submission should include documentation from USFWS of concurrence/approval.

This letter does not include a review of potential lake, stream, wetland, or floodplain impacts caused by your project that may require a permit from our office. A copy of this letter should be provided as an attachment to any future Joint Permit Application submitted for this location. If you have any questions, please feel free to contact me at prysbym1@michigan.gov or 517-899-7316.

Sincerely,



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

cc: USFWS
Ms. Casey Reitz, MDNR



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
<http://www.fws.gov/midwest/EastLansing/>

In Reply Refer To:

November 05, 2021

Consultation code: 03E16000-2022-I-0131

Event Code: 03E16000-2022-E-00748

Project Name: Kalamazoo/Battle Creek International Airport (AZO) Runway 17/35 Extension

Subject: Verification letter for the project named 'Kalamazoo/Battle Creek International Airport (AZO) Runway 17/35 Extension' 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 **November 05, 2021** your effect determination(s) for the 'Kalamazoo/Battle Creek International Airport (AZO) Runway 17/35 Extension' (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
Mitchell's Satyr Butterfly (<i>Neonympha mitchellii mitchellii</i>)	Endangered	No effect
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Threatened	NLAA
Snuffbox Mussel (<i>Epioblasma triquetra</i>)	Endangered	No effect

The Service will notify you within 30 calendar days if we determine that this proposed Action does not meet the criteria for a "may affect, not likely to adversely affect" (NLAA) determination for Federally listed species in Michigan. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the Michigan Ecological Services Field Office to apply local

knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, the Michigan Ecological Services Field Office may request additional information to verify the effects determination reached through the Michigan DKey.

Your agency has met consultation requirements by informing the Service of your “No Effect” determination(s). No consultation is required for species that you determined will not be affected by the Action.

Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions and the Service’s 30-day review period. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

The Service recommends that you contact the Service or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

For non-Federal representatives: Please note that when a project requires consultation under section 7 of the Act, the Service must consult directly with the Federal action agency unless that agency formally designates a non-Federal representative (50 CFR 402.08). Non-Federal representatives may prepare analyses or conduct informal consultations; however, the ultimate responsibility for section 7 compliance under the Act remains with the Federal agency. If the Federal agency concurs with your determination, the project as proposed has completed section 7 consultation. All documents and supporting correspondence should be provided to the Federal agency for their records.

Bats of Conservation Concern:

Implementing protective measures for bats, including both federally listed and unlisted 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) and/or the non-volant season (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/midwest/eagle/>. 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 <http://www.fws.gov/midwest/eagle/pdf/NationalBaldEagleManagementGuidelines.pdf>.

If you have further questions regarding potential impacts to eagles, please contact Chris Mensing, Chris_Mensing@fws.gov or 517-351-2555.

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.

Action Description

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

1. Name

Kalamazoo/Battle Creek International Airport (AZO) Runway 17/35 Extension

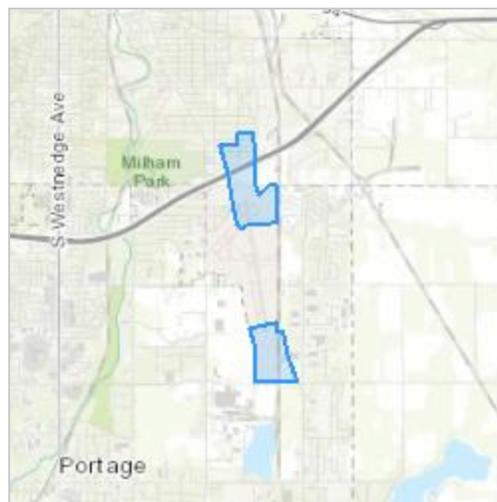
2. Description

The following description was provided for the project 'Kalamazoo/Battle Creek International Airport (AZO) Runway 17/35 Extension':

Environmental Assessment to evaluate proposed actions including

- Extend Runway 17 end by 150 feet
- Extend Runway 35 end by 1,000 feet
- Realign Taxiway C at the approach end of Runway 17
- Extend parallel Taxiway B to match Runway 17/35 extensions
- Relocate an existing railroad spur (owned by Norfolk Southern Railroad) on the south end of the Airport, including land acquisition
- Acquire aviation easements/land acquisition in both Runway 17 and Runway 35 approaches for obstruction clearing
- Clear obstruction(s) in Runway 17/35 approaches
- Relocate existing airfield NAVAIDs
- Conduct noise analysis to lift/modify existing noise curfew for aircraft operating at night
- Develop new aircraft approach and departure procedures for Runway 17/35
- Complete hazardous materials Phase I and Phase II Environmental Site Assessments on acquired property

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.220090400000004,-85.54699707278328,14z>



Qualification Interview

1. 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

2. Is the action the approval of a long-term (i.e., in effect greater than 10 years) permit, plan, or other action?

No

3. Is the action being funded, authorized, or carried out by a Federal agency?

Yes

4. Does the action involve the installation or operation of wind turbines?

No

5. Does the action involve purposeful take of a listed animal?

No

6. Does the action involve a new communication tower?

No

7. Does the activity involve aerial or other large-scale application of any chemical (including insecticide, herbicide, etc.)?

No

8. Will your action permanently affect local hydrology by impacting 1/2 acre or more of wetland; or by increasing or decreasing groundwater or surfacewater elevations?

No

9. Will your action temporarily affect local hydrology by impacting 1/2 acre or more of wetland; or by increasing or decreasing groundwater or surfacewater elevations?

No

10. 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

11. 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

12. 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

13. Does your action area occur entirely within an already developed area with no natural habitat or trees present? For the purposes of this question, "already developed areas" are already paved, covered by existing structures, manicured lawns, industrial sites, or cultivated cropland, AND do not contain trees that could be roosting habitat. Be aware that listed species may occur in areas with natural, or semi-natural, vegetation immediately adjacent to existing utilities (e.g. roadways, railways) or within utility rights-of-way such as overhead transmission line corridors, and can utilize suitable trees, bridges, or culverts for roosting even in urban dominated landscapes (so these are NOT considered "already developed areas" for the purposes of this question).

No

14. [Hidden Semantic] Does the action intersect the Eastern massasauga rattlesnake area of influence?

Automatically answered

Yes

15. Does your action involve prescribed fire?

No

16. Have you determined that the area is not occupied by Eastern massasauga rattlesnake using the accepted survey [protocol](#) or an otherwise approved survey method? Only answer yes here if you have already coordinated with the Service on the survey effort to ensure the level of effort was sufficient to determine presence/absence. If you have conducted a survey in coordination with the Service, email a copy of your survey report to MIFO_Dkey@fws.gov with "Survey Report" in subject line, and upload the survey report(s) here in the next step of this key.

No

17. Will this action occur entirely in the Eastern massasauga rattlesnake inactive season (October 16 through April 14)?

No

18. Will this action occur entirely in the Eastern massasauga rattlesnake active season (April 15 through October 15)?

Yes

19. 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

20. 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
21. 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
22. 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
23. [Semantic] Does the action area intersect the snuffbox area of influence?
Automatically answered
Yes
24. [Hidden Semantic] Does the action area intersect the Mitchell's satyr area of influence?
Automatically answered
Yes
25. [Hidden Semantic] Does the action area intersect the Indiana bat area of influence?
Automatically answered
Yes
26. The project has the potential to affect Indiana bat. Does the action area contain any known or potential bat hibernacula (natural caves, abandoned mines, or underground quarries)?
No
27. Has a presence/absence bat survey following the Service's Range-wide [Indiana Bat Summer Survey Guidelines](#) been conducted within the action area within the last 5 years?
No
28. Does the action involve removal/modification of a human structure (barn, house or other building) known to contain roosting Indiana bats?
No
29. Does the action include removal/modification of an existing bridge or culvert?
No
30. Does the action include tree cutting/trimming, prescribed fire, and/or pesticide application?
Yes
-

31. [Small, isolated forest patch\(es\)](#) are not considered suitable habitat for Indiana bat if they are less than 5 acres in size AND disconnected from other forest/trees by at least 1000 ft. Is your project within a small, isolated forest patch? If so, select yes. If you are not sure, follow the hyperlink above for more information or select No to answer more questions about your project.
No
32. Will the action [clear ≥20 acres of forest or fragment a connective corridor](#) between 2 or more forest patches of at least 5 acres?
No
33. Will the action [clear >10% of the available forested habitat](#) within a half-mile buffer of the action area?
No
34. 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)?
Yes
35. Does the action include cutting/trimming hazard trees in order to prevent imminent loss of human life and/or property?
No
36. Will all tree cutting/trimming, prescribed fire, and/or pesticide application occur entirely during the bat inactive (hibernation) season (October 1 through March 31)?
Yes
37. Does the action include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s)?
No
38. [Hidden Semantic] Does this project intersect the northern long-eared bat area of influence?
Automatically answered
Yes
39. Is the project action area located within 0.25 miles of a known northern long-eared bat hibernaculum?
Automatically answered
No
40. Will the action involve Tree Removal as defined in the 4(d) rule for northern long-eared bat?
Yes
41. Is the project action area located within 150 feet of a known occupied northern long-eared bat maternity roost tree?
Automatically answered
No
-

42. [Small, isolated forest patch\(es\)](#) are not considered suitable habitat for northern long-eared bat if they are less than 5 acres in size AND disconnected from other forest/trees by at least 1000 ft. Is your project within a small, isolated forest patch? If so, select yes. If you are not sure, follow the hyperlink above for more information or select No to answer more questions about your project.

No

43. Does the action area contain [potential northern long-eared bat bat roost trees](#) (trees ≥ 3 inches in diameter [at breast height] with cracks, crevices, cavities and/or exfoliating bark)?

Yes
