Appendix B

Biological Resources and Agency Consultation

U.S. Department
of Transportation
Federal Aviation Administration

Aviation Safety

800 Independence Ave., SW.
Washington, DC 20591

Mr. Scott Hicks
Field Office Supervisor
U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road
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East Lansing, MI 48823

SUBJECT: Endangered Species Act Section 7 Consultation for Drone Commercial Package Delivery Operations in Detroit, Michigan

In accordance with Section 7 of the Endangered Species Act (ESA), the Federal Aviation Administration (FAA) is requesting U.S. Fish and Wildlife Service (USFWS) concurrence that the FAA's action of authorizing Amazon Prime Air (Prime Air) to conduct commercial drone package delivery operations from its four Prime Air Drone Delivery Centers (PADDCs) located in Detroit, MI (the Proposed Action), is ***not likely to adversely affect***, the Whooping Crane (*Grus americana*). Additionally, the Proposed Action would have ***no effect*** on the eastern massasauga (*Sistrurus catenatus*) and eastern prairie fringed orchid (*Platanthera leucophaea*), as Conservation Measures (CMs) are provided for these species. Our biological evaluation is provided below, including a brief background, project description, identification of the action area, and a discussion of potential effects to ESA-listed species.

Project Description

Prime Air is seeking authorization to conduct commercial package deliveries using drones in the Detroit, MI area. Prime Air intends to introduce its drone delivery capabilities in 2025 and has requested the FAA to authorize the operation of its MK30 drone, so it can provide drone package delivery services across its operating area. The four proposed MK30 operating areas and PADDCs are depicted in **Attachment A**.

Prime Air anticipates flying up to approximately 1,000 MK30 drone flights per operating day from each of the four PADDCs located in the Detroit area, with each flight taking a package to a customer delivery address before returning to the PADDC. The number of flights per day would vary based on customer demand and weather conditions. Prime Air is taking an incremental approach to operations and expects to gradually ramp up to approximately 1,000 flights per day per PADDC as consumer demand increases over time. Drone flights could be conducted up to 365 days a year between 7 A.M. and 10 P.M.

<u>Unmanned Aircraft</u>

As pictured in **Attachment B**, the MK30 drone is a hybrid multicopter fixed-wing tail-sitter drone with six propulsors allowing it to take off and land vertically and transition to wing borne flight. Its airframe is

composed of staggered tandem wings for stable wing borne flight. The drone weighs approximately 78 pounds and has a maximum takeoff weight of approximately 83 pounds, which includes a maximum package payload of 5 pounds. It has a maximum operating range of 7.5 miles (or about 15 minutes) and can fly up to 58 knots (67 miles per hour) during wing-borne flight. It uses electric power from rechargeable lithium-ion batteries and is launched vertically using powered lift and converts to using wing lift during en route flight. The MK30 is equipped with collision avoidance technology to help avoid conflicts with other aircraft and drones; however, no effective technology exists that can be used to help avoid collisions with wildlife.

Flight Operations

The MK30 drone would generally be operated at an altitude between 180 and 377 feet above ground level (AGL). The outbound en route altitude to a delivery location is expected to be flown between 180 and 279 feet AGL. The inbound en route altitude is expected to be flown between 279 and 377 feet back to the PADDC. At a delivery location, the drone would descend vertically to a stationary hover and drop a package to the ground. Once a package has been delivered, the drone would ascend vertically to the inbound transition altitude and depart the delivery area while climbing to the en route altitude to return to the PADDC. The PADDC is a controlled area wherein drone flights are launched and recovered. The drone would fly a predefined flight path that is set prior to takeoff. Flight missions would be automatically planned by Prime Air's flight planning software, which assigns, deconflicts, and routes each flight. In accordance with FAA safety requirements, the drone would avoid operating over areas with dense human populations, such as over roadways, public gathering spots, etc.

Takeoff

Once a package is loaded onto the MK30 drone and the drone is cleared for departure from the PADDC, the drone takes off from the ground vertically to an altitude of about 115 feet AGL and then transitions and climbs to its en route altitude of about 200 feet AGL (ranges from 180 and 279 feet AGL). The takeoff phase of flight would last less than one minute.

En Route Outbound

The en route outbound phase is the part of flight in which the MK30 drone transits from the PADDC to a delivery point on a predefined flight path. During this flight phase, the drone will typically operate at a typical en route altitude of 200 feet AGL with a typical airspeed of 58 knots (67 miles per hour).

Delivery

The delivery phase consists of descent from the en route altitude to a delivery point to deliver a package. The MK30 drone transitions and descends to about 140 feet AGL and then vertically descends to about 13 feet AGL while maintaining position over the delivery point. The drone hovers while dropping the package and then proceeds to climb vertically back to the inbound transition altitude of 197 feet AGL. The MK30 then transitions and climbs to its en route inbound altitude of 345 feet AGL (ranges from 279 to 377 feet AGL). The delivery phase of flight would last approximately one minute.

En Route Inbound

The MK30 drone continues to fly at a typical en route altitude of about 345 feet AGL with a speed of 58 knots towards the PADDC.

Landing

The drone decelerates as it approaches the PADDC and descends to the transition altitude of 197 feet AGL and where it transitions from horizontal flight to vertical flight, coming to a zero-speed position

over its assigned landing pad. The MK30 drone slowly descends over its assigned landing pad and lands on the pad.

Predicted Sound Levels

Based on a noise analysis using sound level measurement data for the MK30 drone, the estimated maximum sound exposure level (SEL) for the takeoff, delivery, and landing phases of flight is approximately 90.5 (at 20 feet), 92.1 (at 25 feet), and 91.8 dB (at 20 feet), respectively. Predicted sound levels decrease as distances from the drone increase. The maximum SEL for the en route phase is approximately 63.7 dB when the drone at an altitude of 200 feet AGL and flying at approximately 58 knots (67 miles per hour). The detailed noise analysis is provided as **Attachment C**.

Action Area

The action area is defined as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR § 402.02). For this Proposed Action, the action areas are defined as Prime Air's four proposed MK30 operating areas, as depicted in Attachment A. These areas capture all possible flight routes to the delivery areas and where potential effects (e.g., visual, auditory, physical) to listed species could occur.

According to the US Environmental Protection Agency Ecoregion database, the operating areas are in the 1) Maumee Lake Plain, 2) Interlobate Dead Ice Moraines US EPA Level IV ecoregions, and 3) Clayey High Lime Till Plains (USEPA, 2024).

- The Maumee Lake Plain ecoregion extends along the western shores of Lake Erie. This ecoregion contains most of the Detroit metro area including the SMI1and DET6 PADDCs. The Maumee Lake Plain ecoregion has been severely altered with urbanization including residential and industrial development. Currently there are no natural areas within the operating areas in the ecoregion (Bplant.org, 2024).

- The Interlobate Dead Ice Moraines ecoregion occurs in southern Michigan. This ecoregion consists of more rugged terrain than the lake plain region, with coarse textured, well drained soils (iNaturalist, 2024). Historically, this area supported open oak savanna, oak-hickory forests, and prairie. Much of this area has been developed or converted to agriculture. This ecoregion is located on the west side of the operating area, in the area of the STW1 PADDC and portions of the DET3 PADCC.

- Lastly, the Clayey High Lime Till Plains ecoregion is located between the Loamy, High Lime Till Plains and the Maumee Lake Plains ecoregions along Lake Erie. This area is relatively level and overlain by glacial till. This area has now been largely cleared for agriculture, as well as residential and commercial development.

As indicated above, the Proposed Action within these ecoregions would take place largely over high to medium density developed urban and commercial areas, with some rural areas and open land. Therefore, wildlife habitats within the action area predominantly include parks, a few open spaces, waterways, and vacant lands. These areas may provide habitat for many of the more common fauna in the region, including beavers, muskrats, cottontail rabbits, skunks, possums, groundhogs, foxes, and coyotes.

ESA-Listed Species and Critical Habitat in the Action Area

The FAA acquired the Official Species List (see **Attachment D**) from the USFWS Information for Planning and Conservation online system to identify ESA-listed, proposed, and candidate species within the action area (**Table 1**). The action area does not contain designated critical habitat for any species.

Table 1. ESA-Listed Species, Species Proposed for Listing, and Candidate Species Potentially Present in the Action Areas

Species	Common Name	Species Name	Federal Status	Critical Habitat
Mammals	Tricolored bat	*Perimyotis subflavus*	Proposed Endangered	N
	Northern long-eared bat	*Myotis septentrionalis*	Endangered	N
	Indiana bat	*Myotis sodalis*	Endangered	N
Reptiles	Eastern massasauga	*Sistrurus catenatus*	Threatened	N
Birds	Rufa Red Knot	*Calidris canutus rufa*	Threatened	N
	Whooping Crane	*Grus americana*	Experimental population, non-essential	N
Clams	Rayed bean	*Villosa fabalis*	Endangered	N
	Salamander mussel	*Simpsonaias ambigua*	Proposed Endangered	Proposed
	Snuffbox mussel	*Epioblasma triquetra*	Endangered	N
Insects	Monarch butterfly	*Danaus plexippus*	Candidate Species	N
	Mitchell's satyr butterfly	*Neonympha mitchellii mitchellii*	Endangered	N
Plants	Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	N

SOURCE: USFWS IPaC, accessed November 2024.

The Official Species List states the Rufa Red Knot (*Calidris canutus rufa*), a threatened species, only needs to be considered if the action area occurs along coastal areas during the Red Knot migratory window (May 1 – September 30). The Proposed Action is not expected to occur along coastal areas utilized by the Red Knot therefore, it would have ***no effect*** on the Rufa Red Knot.

Potential Effects of the Proposed Action on ESA-Listed and Candidate Species

Drone noise, visual presence, and the potential for airborne strikes with flying species are the Proposed Action's potential stressors or threats to ESA-listed species. Flight operations would take place mostly in an urban environment, within airspace, and typically remain well above the tree line while en route to and from the PADDC. The duration of exposure by wildlife on the ground to visual or noise impacts from the drone would be of very short duration (approximately 30 seconds during takeoff/landing and delivery and a few seconds during the en route phase).

As noted above, the highest estimated SEL associated with Prime Air's proposed operations is 92.1 dB, which would occur during a delivery. For reference, the sound level of a diesel truck at 50 feet or a noisy urban environment during the day is approximately 80 to 90 dB. The SEL on the ground when the drone is at an altitude of 200 feet AGL is estimated to be around 63.7 dB, which is comparable to the sound of an air conditioning unit at 100 feet (60 dB). The MK30 drone is expected to operate at altitudes higher than 200 feet AGL during en route flight; as such, the en route sound level is expected to be less than 63.7 dB.

A descriptor for noise effects on wildlife has not been universally adopted, but some research indicates SEL is the most useful predictor of responses. Characteristic of the bulk of research to date has been lack of systematic documentation of the source noise event. Many studies report "sound levels" without specifying the frequency spectrum or duration. A notable exception is a study sponsored by U.S. Air Force that identifies SEL as the best descriptor for response of domestic turkey poults to low-altitude aircraft overflights (Bradley et al. 1990). This study identified a threshold of response for disturbance of domestic turkeys ("100 percent rate of crowding") as SEL 100 dB. None of the predicted sound levels for the different flight phases exceed SEL 92.1 dB.

The following paragraphs describe the anticipated effects of the Proposed Action on the remaining ESA-listed and candidate species, as listed in **Table 1**.

Eastern massasauga and eastern prairie fringed orchid

Since the operations would continue to occur within airspace only, and there would be no construction or ground disturbance under the Proposed Action, it is anticipated that there would be ***no effect*** on the eastern massasauga or the eastern prairie fringed orchid identified within the USFWS IPaC official species list. The eastern massasauga rattlesnake is Michigan's only venomous snake. It occurs primarily within wetland habitats but may also be found in adjacent upland areas (Michigan Natural Features Inventory, 2024). The eastern prairie fringed orchid prefers wet prairies and meadows. It is rare throughout its range from Wisconsin south to Oklahoma (UF Forest Service, 2024).

For these species, additional CMs have been proposed, should a drone unintentionally land in sensitive areas, which include:

1. Eastern massasauga
    - Permanent loss of massasauga habitat is not anticipated,
    - Recovery personnel should recognize appropriate massasauga habitat – The Massasauga survives in a variety of habitats including open-canopy forested regions for hibernation season, and wetlands such as shore marshlands, shrubby swamps, and fens in their active season,
    - Recovery personnel should be familiar with the species and should be able to identify - watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video, available at *https://www.youtube.com/watch?v=-PFnXe_e02w*, (Weatherhead, P.J. & Prior, K.A, 1992).
    - Recovery personnel should report sightings of any federally listed species, including the Eastern massasauga, to USFWS within 24 hours.
2. Eastern prairie fringed orchid
    - Alterations (including indirect or direct impacts) of the Eastern prairie fringed orchid habitat is not anticipated,

- Recovery personnel should recognize appropriate Eastern prairie fringed orchid habitat (found in a wide variety of habitats, including wet to mesic prairie, to wetland communities such as sedge meadow, fen marsh and marsh edges) and should be able to identify,

- Recovery personnel should report sightings of any federally listed plant species, including the Eastern prairie fringed orchid.

Rayed bean, salamander mussel and snuffbox mussel

The three clam species listed, rayed bean (*Villosa fabalis*), snuffbox mussel (*Epioblasma triquetra*), and salamander mussel (*Simpsonaias ambigua*), are freshwater mussel species. The rayed bean and snuffbox mussel are small freshwater mussels listed as endangered under the ESA. Rayed bean mussels prefer sand or gravel substrates in small streams and lakes. Snuffbox mussels inhabit sand, gravel or cobble substrates in small and medium-sized streams. The salamander mussel is a small thin-shelled mussel that is found in swift-flowing streams and rivers. This species is currently proposed for listing as endangered. Based on the Michigan D-Key, it is expected that the Proposed Action will have ***no effect*** on proposed critical habitat for the salamander mussel or for the above listed mussel species, as it is not anticipated to impact habitat or create /cause water quality issues.

Whooping Crane

The federally endangered Whooping Crane (*Grus americana*) was identified in the official species list as possibly occurring in the action areas, although it typically nests west of these areas in Wisconsin, so there is little threat of disturbing that critical part of their lifecycle. The Whooping Crane within the action areas is considered experimental and non-essential, as the Whooping Crane's Eastern Migration Population occurs approximately 230 miles west of Detroit, along the western and southern edge of Lake Michigan (International Crane Foundation, 2024). While it is possible that Whooping Cranes could utilize open land, such as agricultural fields or unimproved pastures located within some of the operating areas as stopover habitat on their way to wintering grounds in the southeast and Whooping Crane observations have been recorded transitioning through the action areas, the FAA has determined that the Proposed Action is ***not likely to adversely affect*** the Whooping Crane, based on:

1) operations occurring mostly in an urban environment,

2) the altitude at which the drone flies in the en route phase (180–377 feet AGL),

3) the expected low sound levels experienced by a Whooping Crane,

4) any increase in ambient sound levels would be short in duration,

5) the low probability of a Whooping Crane occurring in the action area, and

6) the low likelihood of the drone striking a Whooping Crane,

Any effects would be discountable (extremely unlikely to occur) or insignificant (not able to be meaningfully measured, detected, or evaluated).

Mitchell's satyr butterfly

Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*), a federally endangered species, is known to occur in wetland fen habitats in Washtenaw County and has been observed in Wayne County (Michigan Natural Features Inventory, 2024). However, there are no suitable fen habitats within the action areas (USFWS Mitchell's Satvr Habitat Conservation Plan, 2024). They typically fly low over vegetation and would not be expected to be encountered during drone flights. It is not anticipated that the Proposed Action would affect the life cycle of the Mitchell's satyr butterfly; therefore, ***no effect*** will occur to this species as a result of the Proposed Action.

Monarch butterfly

The monarch butterfly (*Danaus plexippus*), a candidate for federal listing, has the potential to occur in the action areas. Information regarding drone impacts on insects is limited and there have been no widespread negative impacts identified in scientific literature. Some research shows that monarch butterflies are not commonly observed at higher altitudes (generally between 1 and 300 feet) and would not be expected to frequently occur at the altitudes where Prime Air is proposing to operate (Altitudes Attained by migrating Monarch Butterflies, 2024). Therefore, it is anticipated that the Proposed Action will have ***no effect*** on the monarch butterfly.

Tri-colored bat, long-eared bat, and Indiana bat

Federally listed bat species, including the Northern long-eared bat (*Myotis septentrionalis*), the Indiana bat (*Myotis sodalis*), and the tricolored bat (*Perimyotis subflavus*), may be located within the action areas. The Proposed Action would include drone operations up until 10 P.M., which is anticipated to overlap with the dusk emergence of bat activity; however, drone operations will not affect the dawn civil twilight hours. Although operations may occur during dusk emergence, the listed bat species typically forage in areas near water or along forested edges (USFWS Tricolored Bat, 2024 and Michigan Department of Natural Resources, 2024). Research suggests that drones have "*minimal impact on bat behavior*" (Fu, Y., M. Kinniry and L.N. Kloepper, 2018) and that bats do not appear to be disturbed by drones (August, T. and T. Moore, 2008). Also, the risk of bat conflicts is only present for 3 to 6 months each year (when bats are not hibernating). Bats at roost or in flight could experience drone noise during the en route and delivery flight phases. Bats foraging at or near the tree line at the time a drone flies by would experience the greatest sound levels. Roosting bats or bats foraging near the ground at the time a drone flies by would experience lower sound levels. Given the estimated sound levels of the drone, the drone's linear flight profile to and from PADDCs and delivery locations, the short period of time the drone would be in any particular location, and the low probability of encountering an individual bat in the action area, drone noise is not expected to adversely affect bats. Any increase in ambient sound levels caused by the drone's flight would only last a few seconds during the en route phase and approximately 49 seconds during a delivery. Given the bat's ability to avoid flying into objects, the short period of time the drone would be in any one place, and the low probability of encountering a bat during operations, the likelihood of the drone striking a bat is extremely low. The FAA has determined that the Proposed Action will have ***no effect*** on the tricolored bat, Indiana bat, and the northern long-eared bat based on:

1) operations occurring mostly in an urban environment,

2) the altitude at which the drone flies in the en route phase (180 to 377 feet AGL),

3) the expected low sound levels experienced by a bat,

4) the short duration of any increases in ambient sound levels,

5) the low probability of a listed bat species occurring in the action area, and

6) the low likelihood of the drone striking a bat.

Any effects would be discountable (extremely unlikely to occur) or insignificant (not able to be meaningfully measured, detected, or evaluated).

Conclusion

Based on the analysis above, the FAA has determined the following:

- There is no critical habitat, for any listed species, located within the action areas.
- Critical habitat for the salamander mussel is proposed at this time, however the Proposed Action will have ***no effect***.
- The action areas are mostly urbanized, with minimal suitable habitat for the ESA-listed species identified in them.
- Any increase in ambient sound levels would be short in duration.
- Drone dwell/hover time during takeoff and delivery would be less than one minute.
- Drones would generally operate at an altitude between 200 and 345feet AGL.
- Drone activity would be highly concentrated over developed areas, where there is consumer demand for drone delivery service.
- Based on all of these factors, the probability of a drone/wildlife interaction would be low.

It is important to note that Prime Air has been performing similar drone delivery operations at its College Station, TX facility, for more than two years. A recent assessment of drone maintenance and telemetry records indicates zero instances of drone/wildlife collisions over the course of more than 8,000 delivery operations.

Accordingly, the FAA has determined the Proposed Action is ***not likely to adversely affect*** the Whooping Crane. The FAA has also determined that the Proposed Action would have ***no effect*** on the tricolored bat, northern long-eared bat, Indiana bat, rayed bean, salamander mussel, snuffbox mussel, monarch butterfly, and the Mitchell's satyr butterfly. Two additional species, eastern massasauga and eastern prairie fringed orchid, are determined that the Proposed Action will have **no effect**; however, additional CM are included for these species in case of unintentional landings within sensitive areas.

Because the delivery of commercial goods by drones is an emerging technology and its potential effects on wildlife are still not well understood, Prime Air is proposing to implement an "Biological Monitoring Program" for this project, which would include:

- Record and analyze daily maintenance and telemetry records to document any potential drone/wildlife interactions,
- If applicable, report wildlife movement / activity in and around airport property that may be obtained from operations or wildlife management staff from nearby airports.
- If applicable, recover and analyze potential biological materials (e.g., snarge, feathers, etc.), generally in accordance with existing protocols used in cases of aircraft bird strikes at airports

- Report findings to the USFWS on an annual basis

The proposed Biological Monitoring Program would serve as a useful tool for Prime Air, the FAA, and USFWS to better understand the possible interactions between drones and wildlife.

The FAA appreciates your review of the proposed project and requests your concurrence with (1) our "may affect" determination as stated above and (2) implementation of the proposed Biological Monitoring Program within 30 days of receiving this letter. If you have any questions, please contact Christopher Hurst via email at 9-faa-drone-environmental@faa.gov.

Sincerely,

JOSEPH K HEMLER JR.

Digitally signed by JOSEPH K HEMLER JR.
Date: 2025.05.08 10:47:26 -04'00'

Joseph Hemler
Manager, General Aviation and Commercial Branch (AFS-752)
Emerging Technologies Division
Office of Safety Standards, Flight Standards Service

Attachments:
Attachment A – Proposed MK30 Operating Areas
Attachment B – MK 30 Drone
Attachment C – Technical Noise Report
Attachment D – Official Species List

References

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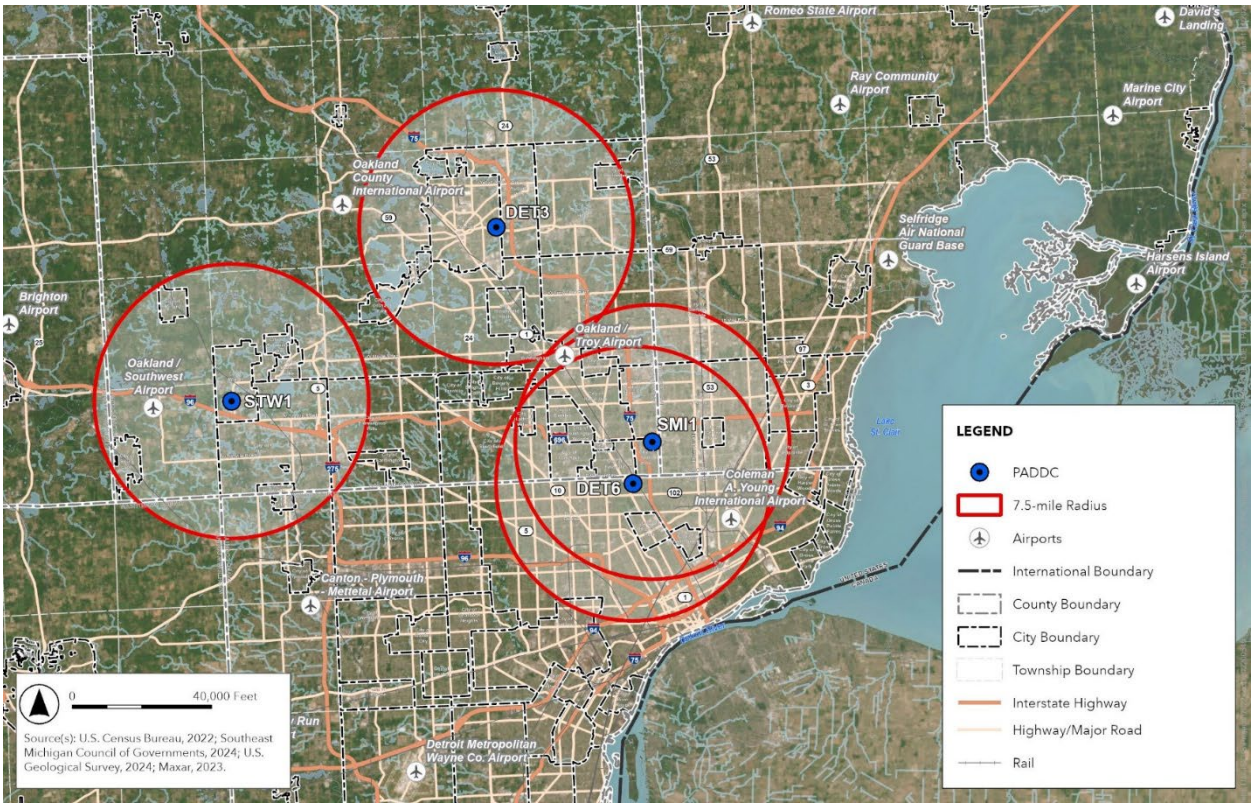
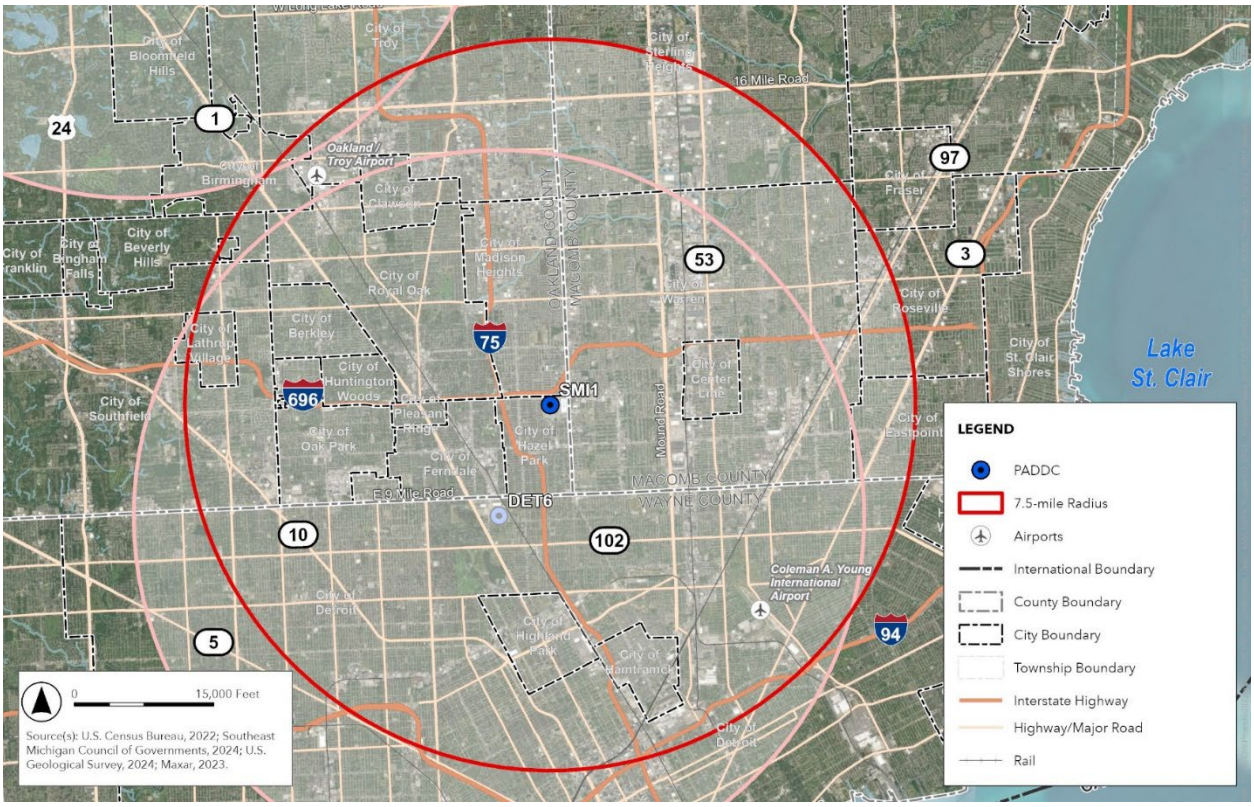
Attachment A

Proposed MK30 Operating Areas

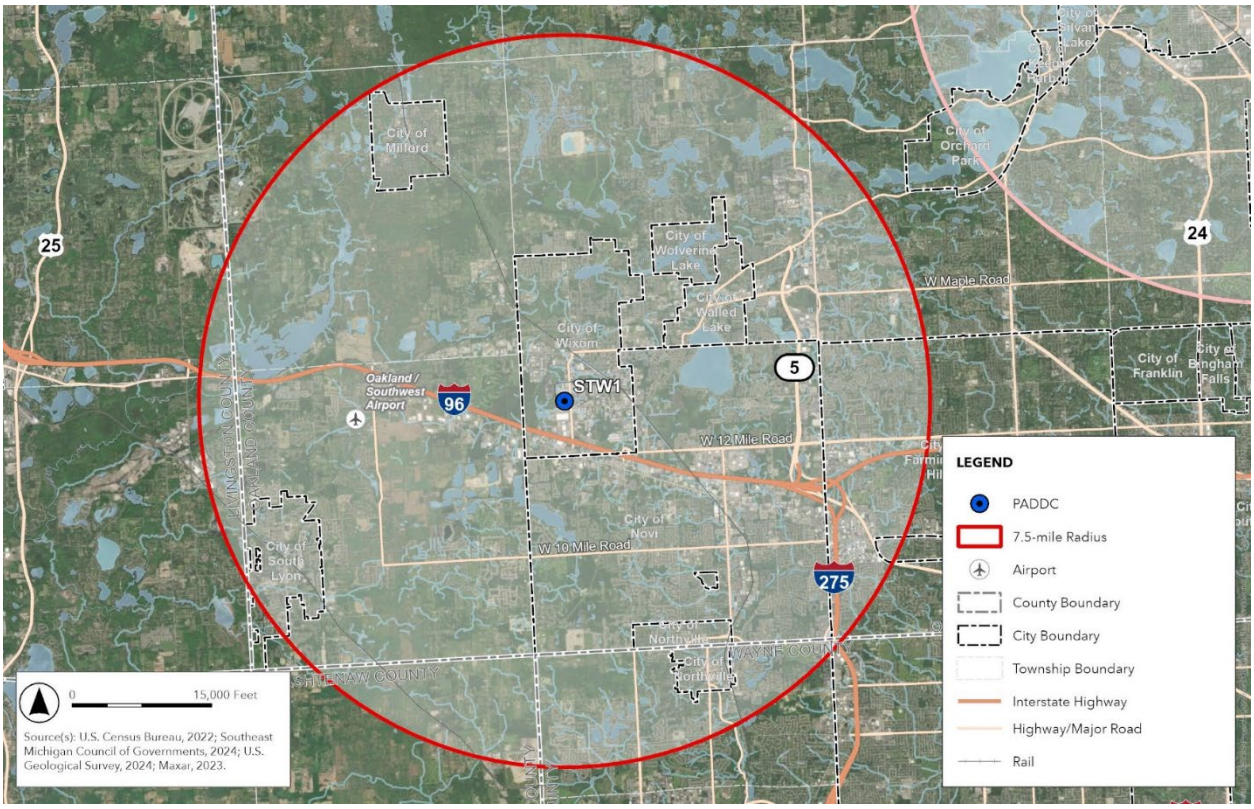
MK30 Drone Action Areas – All PADDCs



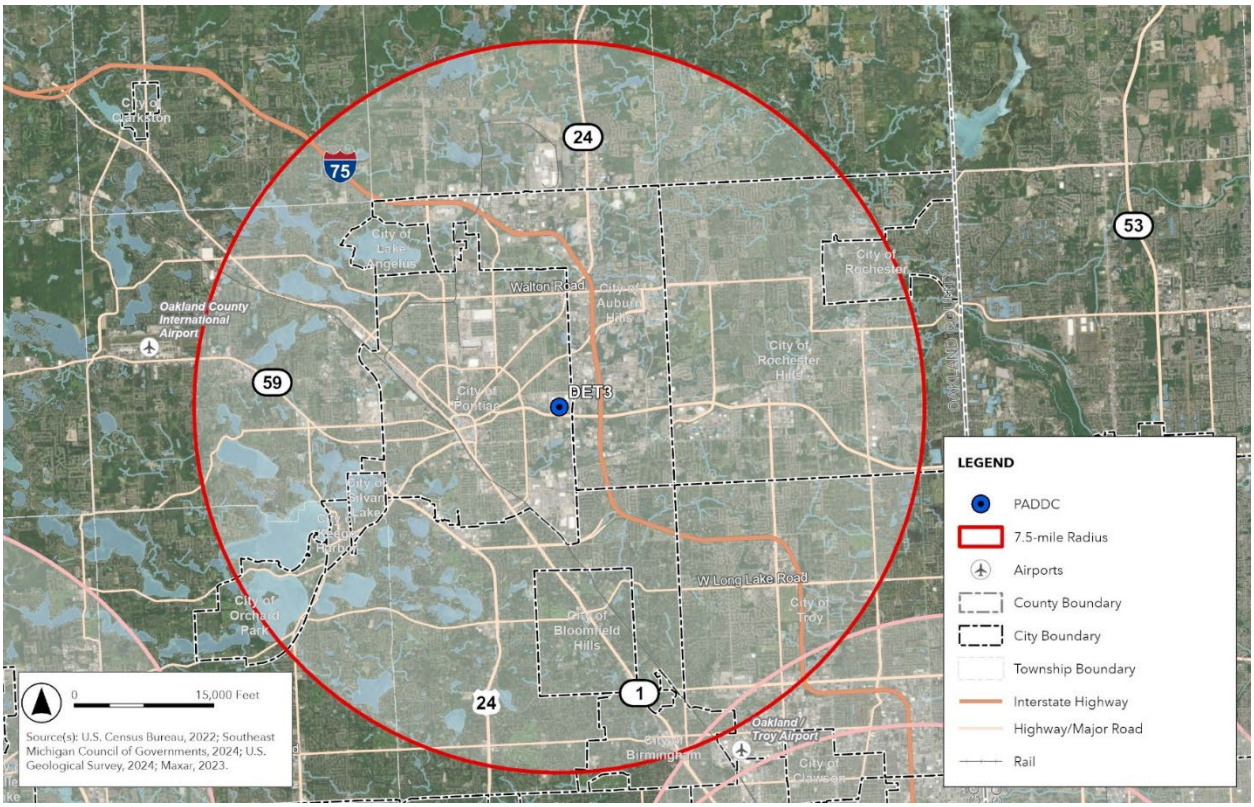
SMI1 PADDC Drone Operation Action Area



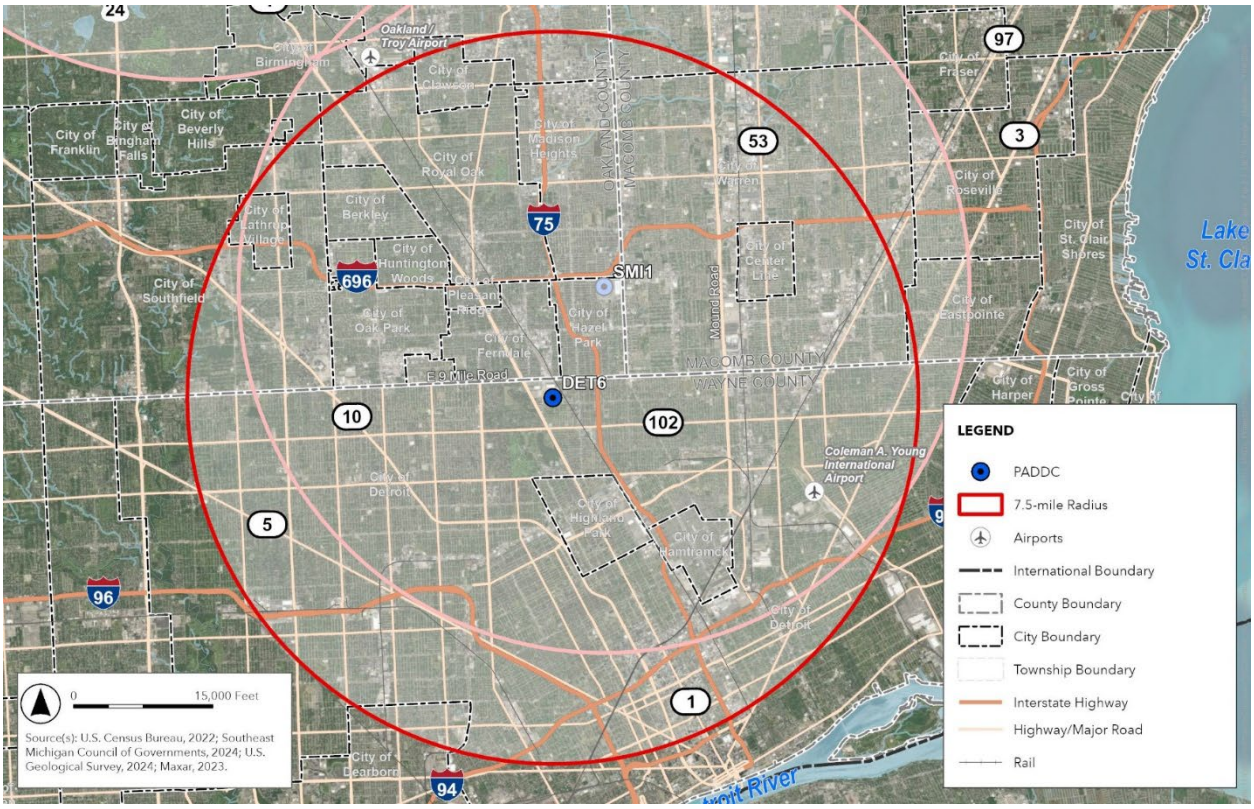
STW1 PADDC Drone Operation Action Area



DET3 PADDC Drone Operation Action Area



DET6 PADDC Drone Operation Action Area



Attachment B

MK30 Drone

MK30 Drone

Attachment C

Technical Noise Report

The Technical Noise Report included in the original agency consultation has been omitted from this appendix; it can be found in Appendix E.

Attachment D
Official Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To: 11/19/2024 14:55:03 UTC
Project code: 2025-0021310
Project Name: DET

Subject: Consistency letter for 'DET' for specified federally threatened and endangered species and designated critical habitat that may occur in your proposed project area consistent with the Michigan Determination Key for project review and guidance for federally listed species (Michigan Dkey).

Dear Brendon Quinton:

The U.S. Fish and Wildlife Service (Service) received on **November 19, 2024** your effect determination(s) for the 'DET' (the Action) using the Michigan DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Michigan DKey, you made the following effect determination(s) for the proposed Action:

Species	**Listing Status**	**Determination**
Eastern Massasauga (=rattlesnake) (*Sistrurus catenatus*)	Threatened	May affect
Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)	Threatened	NLAA
Indiana Bat (*Myotis sodalis*)	Endangered	No effect
Mitchell's Satyr Butterfly (*Neonympha mitchellii mitchellii*)	Endangered	No effect
Monarch Butterfly (*Danaus plexippus*)	Candidate	No effect
Northern Long-eared Bat (*Myotis septentrionalis*)	Endangered	No effect
Rayed Bean (*Villosa fabalis*)	Endangered	No effect
Rufa Red Knot (*Calidris canutus rufa*)	Threatened	No effect
Salamander Mussel (*Simpsonaias ambigua*)	Proposed Endangered	No effect
Snuffbox Mussel (*Epioblasma triquetra*)	Endangered	No effect
Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	No effect

Whooping Crane (*Grus americana*)	Experimental Population, Non-Essential	May affect

Critical Habitat	Listing Status	Determination
Salamander Mussel (*Simpsonaias ambigua*)	Proposed	May affect

Please carefully review this letter. Your Endangered Species Act requirements are not complete.

Eastern Massasauga (EMR):
EMR may be present in the Action area. The following projects are not within the scope of the Michigan DKey: prescribed fire; new roads or trails that create a permanent barrier to EMR movement; projects that alter hydrology permanently, or temporarily if during the inactive season; projects that are large in scale; and projects that do not apply recommended conservation measures. Project-specific review is needed for these types of projects. **Please coordinate with the Michigan Ecological Services Field Office to further evaluate effects of the Action on EMR.**

Freshwater Mussels:
Based on your answers to the Michigan DKey, the Action will have ”No Effect” on Federally listed mussels. **However, state-listed mussels may occur in your Action area. Contact the Michigan Department of Natural Resources to determine effects to state-listed mussels.**

Freshwater mussels are one of the most critically imperiled groups of organisms in the world. In North America, 65% of the remaining 300 species are vulnerable to extinction (Haag and Williams 2014). Implementing measures to conserve and restore freshwater mussel populations directly improves water quality in lakes, rivers, and streams throughout Michigan. An adult freshwater mussel filters anywhere from 1 to 38 gallons of water per day (Baker and Levinton 2003, Barnhart pers. comm. 2019). A 2015 survey found that in some areas mussels can reduce the bacterial populations by more than 85% (Othman et al. 2015 in Vaughn 2017). Mussels are also considered to be ecosystem engineers, stabilizing substrate and providing habitat for other aquatic organisms (Vaughn 2017). In addition to ecosystem services, mussels play an important role in the food web, contributing critical nutrients to both terrestrial and aquatic habitats, including those that support sport fish (Vaughn 2017). Taking proactive measures to conserve and restore freshwater mussels will improve water quality, which has the potential to positively impact human health and recreation in the State of Michigan.

Whooping Crane Nonessential Experimental Population:
For Federal projects outside a National Wildlife Refuge or National Park, we treat the nonessential experimental population (NEP) of whooping crane as proposed for listing and only two provisions of section 7 would apply: section 7(a)(1) and section 7(a)(4). Section 7(a)(4) requires Federal agencies to confer with the Service on actions that are likely to jeopardize the continued existence of a proposed species. You indicated that the Action is not likely to result in jeopardy of the NEP of whooping crane. As such, your obligations under section 7 for whooping crane are complete.

Bald and Golden Eagles:
Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the "taking" of bald and golden eagles and defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Eagle Act's implementing regulations define disturb as "…to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

If the Action may impact bald or golden eagles, additional coordination with the Service under the Eagle Act may be required. For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit https://www.fws.gov/library/collections/all-about-eagles. In addition, the Service developed the National Bald Eagle Management Guidelines (May 2007) in order to assist landowners in avoiding the disturbance of bald eagles. The full Guidelines are available at https://www.fws.gov/media/national-bald-eagle-management-guidelines-0.

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

Monarch butterfly and other pollinators
In December 2020, after an extensive status assessment of the monarch butterfly, we determined that listing the monarch under the Endangered Species Act is warranted but precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. Therefore, the Service added the monarch butterfly to the candidate list. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary.

For all projects, we recommend the following best management practices (BMPs) to benefit monarch and other pollinators.

Monarch and Pollinator BMP Recommendations

Consider monarch and other pollinators in your project planning when possible. Many pollinators are declining, including species that pollinate key agricultural crops and help maintain natural plant communities. Planting a diverse group of native plant species will help support the nutritional needs of Michigan's pollinators. We recommend a mix of flowering trees, shrubs, and herbaceous plants so that something is always blooming and pollen is available during the active periods of the pollinators, roughly early spring through fall (mid-March to mid-October). To benefit a wide variety of pollinators, choose a wide range of flowers with diverse colors, heights, structure, and flower shape. It is important to provide host plants for any known butterfly species at your site, including native milkweed for Monarch butterfly. Incorporating a water source (e.g.,

ephemeral pool or low area) and basking areas (rocks or bare ground) will provide additional resources for pollinators.

Many pollinators need a safe place to build their nests and overwinter. During spring and summer, leave some areas unmowed or minimize the impacts from mowing (e.g., decrease frequency, increase vegetation height). In fall, leave areas unraked and leave plant stems standing. Leave patches of bare soil for ground nesting pollinators.

Avoid or limit pesticide use. Pesticides can kill more than the target pest. Some pesticide residues can kill pollinators for several days after the pesticide is applied. Pesticides can also kill natural predators, which can lead to even worse pest problems.

Planting native wildflowers can also reduce the need to mow and water, improve bank stabilization by reducing erosion, and improve groundwater recharge and water quality.

Resources:

https://www.fws.gov/initiative/monarchs
https://www.fws.gov/library/collections/pollinators

Coordination with the Service is not complete if additional coordination is advised above for any species. Please email our office at MIFO_DKey@fws.gov and attach a copy of this letter, so we can discuss methods to avoid or minimize potential adverse effects to those species.

Mussel References

Baker, S.M. and J. Levinton. 2003. Selective feeding by three native North American freshwater mussels implies food competition with zebra mussels. Hydrobiologia 505(1):97-105.
Haag, W. R. and J.D. Williams, 2014. Biodiversity on the brink: an assessment of conservation strategies for North American freshwater mussels. Hydrobiologia 735:45-60.
Morowski, D., L. James and D. Hunter. 2009. Freshwater mussels in the Clinton River, southeastern Michigan: an assessment of community status. Michigan Academician XXXIX: 131-148.
Othman, F., M.S. Islam, E.N. Sharifah, F. Shahrom-Harrison and A. Hassan. 2015. Biological control of streptococcal infection in Nile tilapia Oreochromis niloticus (Linnaeus, 1758) using filter-feeding bivalve mussel Pilsbryoconcha exilis (Lea, 1838). Journal of Applied Ichthyology 31: 724-728.
Vaughn, C.C. 2017. Ecosystem services provided by freshwater mussels. Hydrobiologia DOI: 10.1007/s10750-017-3139-x.

1.The Group 3 is a specific list of stream segments within known counties that contain habitat likely to be occupied by listed mussels (see Michigan Freshwater Mussel Survey Protocol and Relocation Procedures for additional information).

Summary of conservation measures for your project You agreed to the following conservation measures to avoid adverse effects to listed species and our concurrence is only valid if the measures are fully implemented. These must be included as permit conditions if a permit is required and/or included in any contract language.

Eastern massasauga: To increase human safety and awareness of EMR, those implementing the project must first review the EMR factsheet (available at https://www.fws.gov/media/eastern-massasauga-rattlesnake-fact-sheet), and watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://www.youtube.com/watch?v=-PFnXe_e02w).

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

Eastern massasauga: Do not impact more than 0.5 acres of suitable EMR habitat.

Eastern massasauga: The project will not result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of EMR upland habitat (uplands associated with high quality wetland habitat) to other land uses.

Eastern massasauga: The project will not result in a permanent barrier to snake movement, such as a new road or widening of an existing road, changing the road substrate from dirt to pavement, new trail or canal or other permanent barrier.

Freshwater Mussels: Avoid any unauthorized direct impacts (e.g., stream/road crossing projects, new storm water outfall discharge, hydrostatic testing, other in -stream work, changes to water quality) or indirect impacts (e.g., vegetation removal in riparian zone, construction, discharge, cut and fill, horizontal directional drilling) to a stream or river.

Whooping crane: The project will not occur within a National Wildlife Refuge or National Park

Listed plants: Avoid indirect effects to listed plants by not altering the habitat or resources of a listed plant, and avoiding all direct impacts such as prescribed fire, herbicide application, trampling, increased herbivory, cutting/clearing, crushing by a vehicle, etc.

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

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

1. Name

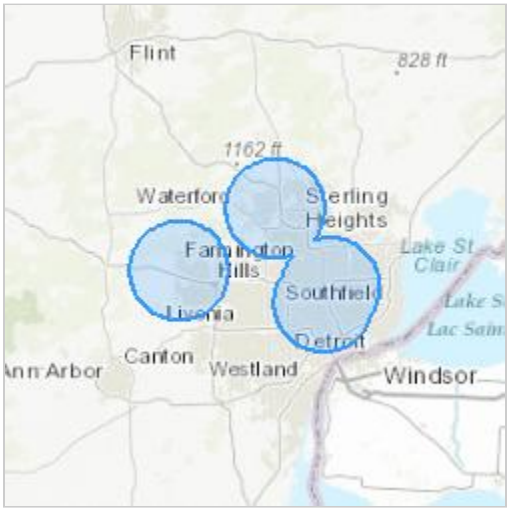
DET

2. Description

The following description was provided for the project 'DET':

> Drone delivery services

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.50995455,-83.5391857615844,14z



QUALIFICATION INTERVIEW

1. Are there any possible effects to any listed species or to designated critical habitat from your project or effects from any other actions or projects subsequently made possible by your project?

   Select "Yes" even if the expected effects to the species or critical habitat are expected to be 1) extremely unlikely (discountable), 2) can't meaningfully be measured, detected, or evaluated (insignificant), or 3) wholly beneficial.

   Select "No" to confirm that the project details and supporting information allow you to conclude that listed species and their habitats will not be exposed to any effects (including discountable, insignificant, or beneficial effects) and therefore, you have made a "no effect" determination for all species. If you are unsure, select YES to answer additional questions about your project.

   Yes

2. This determination key is intended to assist the user in the evaluating the effects of their actions on Federally listed species in Michigan. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, purposeful take for scientific purposes or to enhance the survival of a species, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Click yes to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

   Yes

3. Is the action the approval of a long-term (i.e., in effect greater than 10 years) permit, plan, or other action? (e.g., a new or re-issued hydropower license, a large-scale land management plan, or other kinds of documents that provide direction for projects or actions that may be conducted over a long term (>10 years) without the need for additional section 7 consultation).

   No

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

   Yes

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

   No

6. Are there at least 30 days prior to your action occurring? Endangered species consultation must be completed before taking any action that may have effects to listed species. The Service also needs 30 days to review projects before we can verify conclusions in some dkey output letters. For example, if you have already started some components of the project on the ground (e.g., removed vegetation) before completing this key, answer “no” to this question. The only exception is if you have a Michigan Field Office pre-approved emergence survey (i.e., if you have conducted pre-approved emergence surveys for listed bats before tree removal, you can still answer yes to this question).

   Yes

7. Does the action involve constructing a new communications tower or modifying an existing communications tower?

   No

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

   No

9. Does your project include water withdrawal (ground or surface water) greater than 10,000 gallons/day?

   No

10. Will your action permanently affect hydrology?

    No

11. Will your action temporarily affect hydrology?

    No

12. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new storm-water outfall discharge, dams, other in-stream work, changes to water quality or hydrology, etc.)?

    No

13. Does your project have the potential to indirectly impact the stream/river or the riparian zone (e.g., cut and fill, horizontal directional drilling, hydrostatic testing, construction, vegetation removal, discharge, changes to water quality or hydrology, etc.)?

    No

14. Will your action disturb the ground or existing vegetation? This includes any off road vehicle access, soil compaction, digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application, vegetation management (including removal or maintenance using equipment or chemicals), cultivation, development, etc.

    No

15. Is the action a utility-scale solar development project?

    Note: Solar projects are considered utility scale if they will be 1 megawatt or larger.

    No

16. [Hidden semantic] Does the action intersect the MOBU AOI?

    Automatically answered
    Yes

17. Under the ESA, monarchs remain warranted but precluded by listing actions of higher priority. The monarch is a candidate for listing at this time. The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary. If your project will have no effect on monarch butterflies (for example, if your project won't affect their habitat or individuals), then you can make a "no effect" determination for this project. Are you making a "no effect" determination for monarch?

    Yes

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

    Automatically answered
    Yes

19. Will your action impact less than 0.5 acres of suitable Eastern massasauga rattlesnake habitat?

    Yes

20. Does your action involve prescribed fire?

    No

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

    No

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

    No

23. 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

24. 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

25. 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

26. Will your action create a new road or trail or alter the horizontal alignment of an existing road or trail?

    No

27. Will your action result in a new or increased permanant barrier to snake movement?

    For example, significant widening (>10 ft) of an existing road footprint, converting the surface of an existing road or trail from a non-paved to a paved surface, widening of a paved or gravel trail, or adding new linear features such as fences, canals, or other permanent barriers have the potential to fragment habitat and alter movement and dispersal.

    No

28. For site access, will you minimize vehicle speeds on roads through suitable eastern massassauga rattlesnake habitat? To do this, can you follow posted speed limits, and minimize speeds at facilities and access roads (e.g., less then 15mpH on two-track roads), when possible, during the active season?

    If no vehicle activity will occur in eastern massassauga rattlesnake habitat, select YES.

    No

29. [Semantic] Does the action area intersect the rayed bean area of influence?

    Automatically answered
    Yes

30. [Semantic] Does the action area intersect the snuffbox area of influence?

    Automatically answered
    Yes

31. [Semantic] Does the action area intersect the Salamander mussel AOI?

    Automatically answered
    Yes

32. Semantic Does the action area intersect Salamander mussel CH?

    Automatically answered
    Yes

33. Section 7 conferences are required if a federal action is likely to result in the destruction or adverse modification of critical habitat proposed to be designated. Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical (50 CFR §402.02). Is your project likely to adversely modify critical habitat proposed to be designated for the salamander mussel?

    No

34. [Hidden Semantic] Does the action area intersect the Mitchell's satyr area of influence?

    Automatically answered
    Yes

35. Does your project include alteration or fill of 3 or more acres of wetland?

    No

36. [Hidden Semantic] Does the action area intersect the rufa red knot area of influence?

    Automatically answered
    Yes

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

    Automatically answered
    Yes

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

    No

39. Does the action occur within a National Wildlife Refuge or National Park?

    No

40. For Federal projects outside a National Wildlife Refuge or National Park, we treat the nonessential experimental population of whooping crane as proposed for listing and only two provisions of section 7 would apply: section 7(a)(1) and section 7(a)(4). Section 7(a)(4) requires Federal agencies to confer with the Service on actions that are likely to jeopardize the continued existence of a proposed species. Is your project likely to jeopardize the continued existence of whooping crane?

    No

41. [Hidden Semantic] Does the action area intersect the area of influence for Eastern prairie fringed orchid?

    Automatically answered
    Yes

42. Did you conduct a survey to determine if Eastern prairie fringed orchid occurs in the action area?

    No

43. Will the action indirectly alter the habitat or resources of eastern prairie fringed orchid? For example, could your action result in a change in canopy cover, microclimate, humidity, increase in invasive species, hydrologic alterations, etc.? If unsure, select yes.

    No

44. Could the action directly harm eastern prairie fringed orchid? For example, prescribed fire, herbicide application, trampling, increased herbivory, cutting/clearing, cultivation, crushing by vehicle, reduce to possession, etc.

    No

45. The project has the potential to affect federally listed bats. Does the action area contain any known or potential bat hibernacula (natural caves, abandoned mines, or underground quarries)?

    No

46. Has a presence/absence bat survey or field-based habitat assessment following the Service's Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines been conducted within the action area?

    No

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

    No

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

    No

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

    No

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

    No

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

    Automatically answered
    Yes

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

    Automatically answered
    Yes

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

    Automatically answered
    Yes

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

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

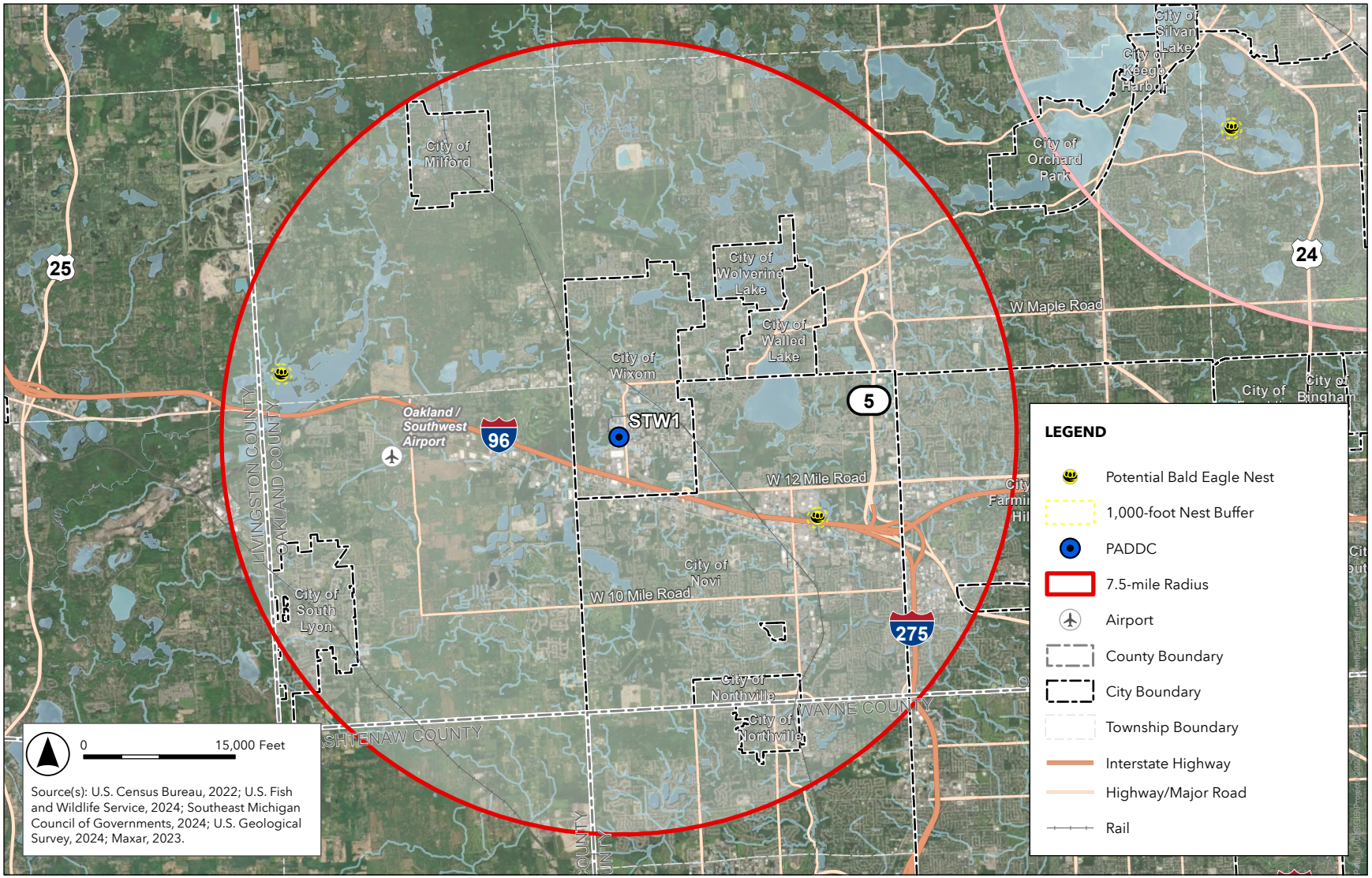
    Yes

IPAC USER CONTACT INFORMATION

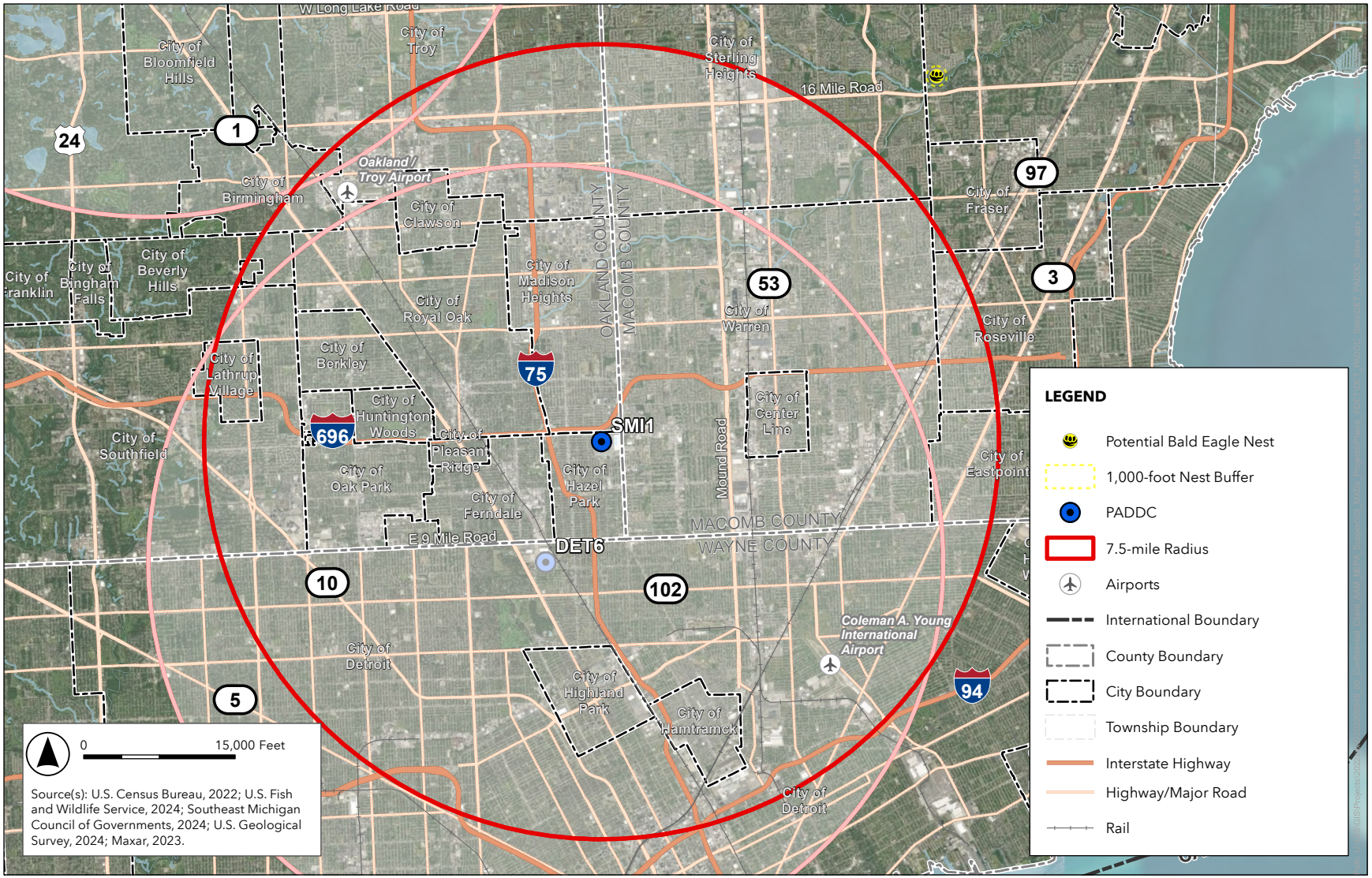
Agency: Private Entity
Name: Brendon Quinton
Address: 5404 Cypress Center Drive
Address Line 2: Suite 125
City: Tampa
State: FL
Zip: 33609
Email bj.quinton@yahoo.com
Phone: 8134862112

LEAD AGENCY CONTACT INFORMATION

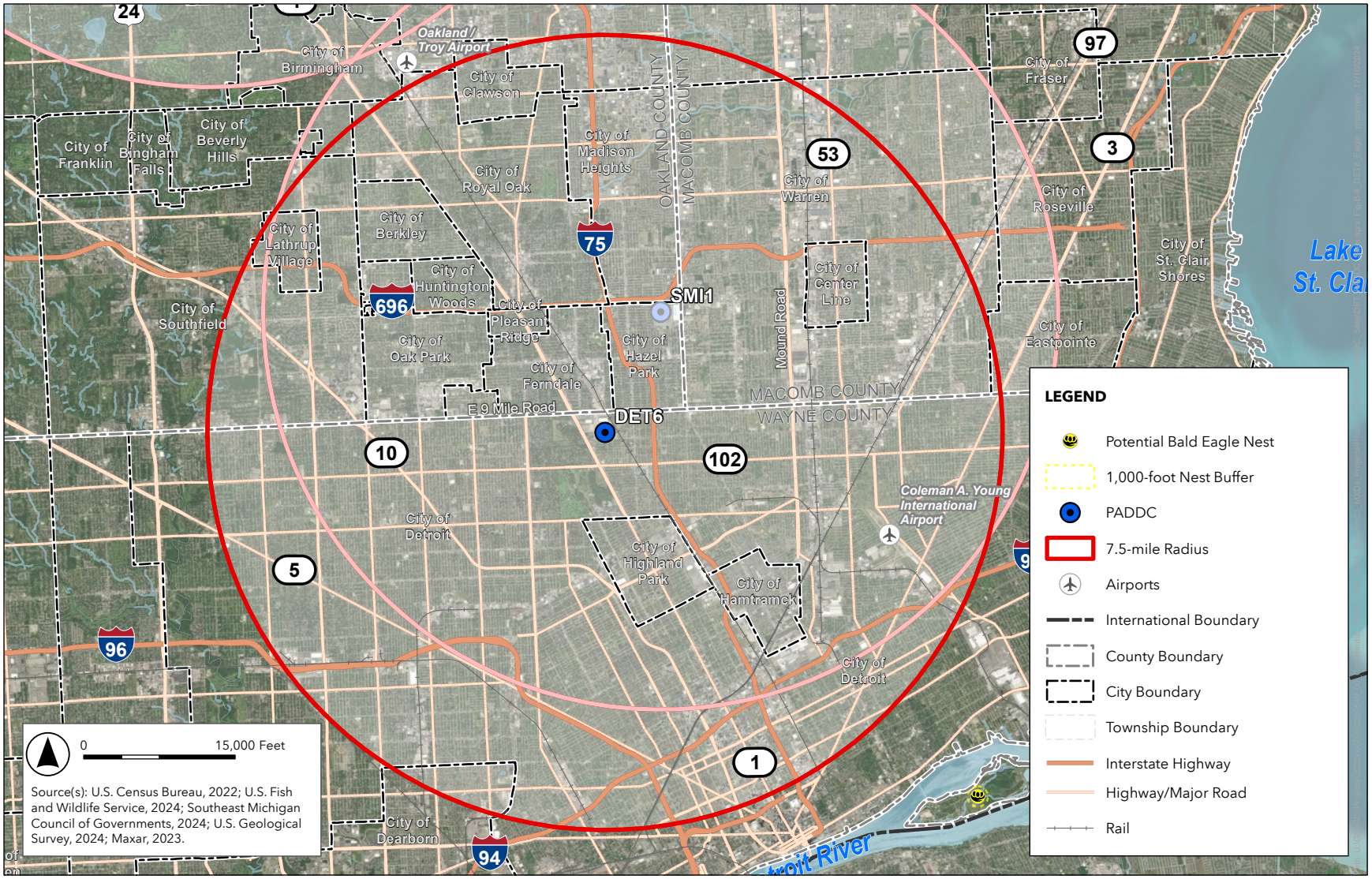
Lead Agency: Federal Aviation Administration



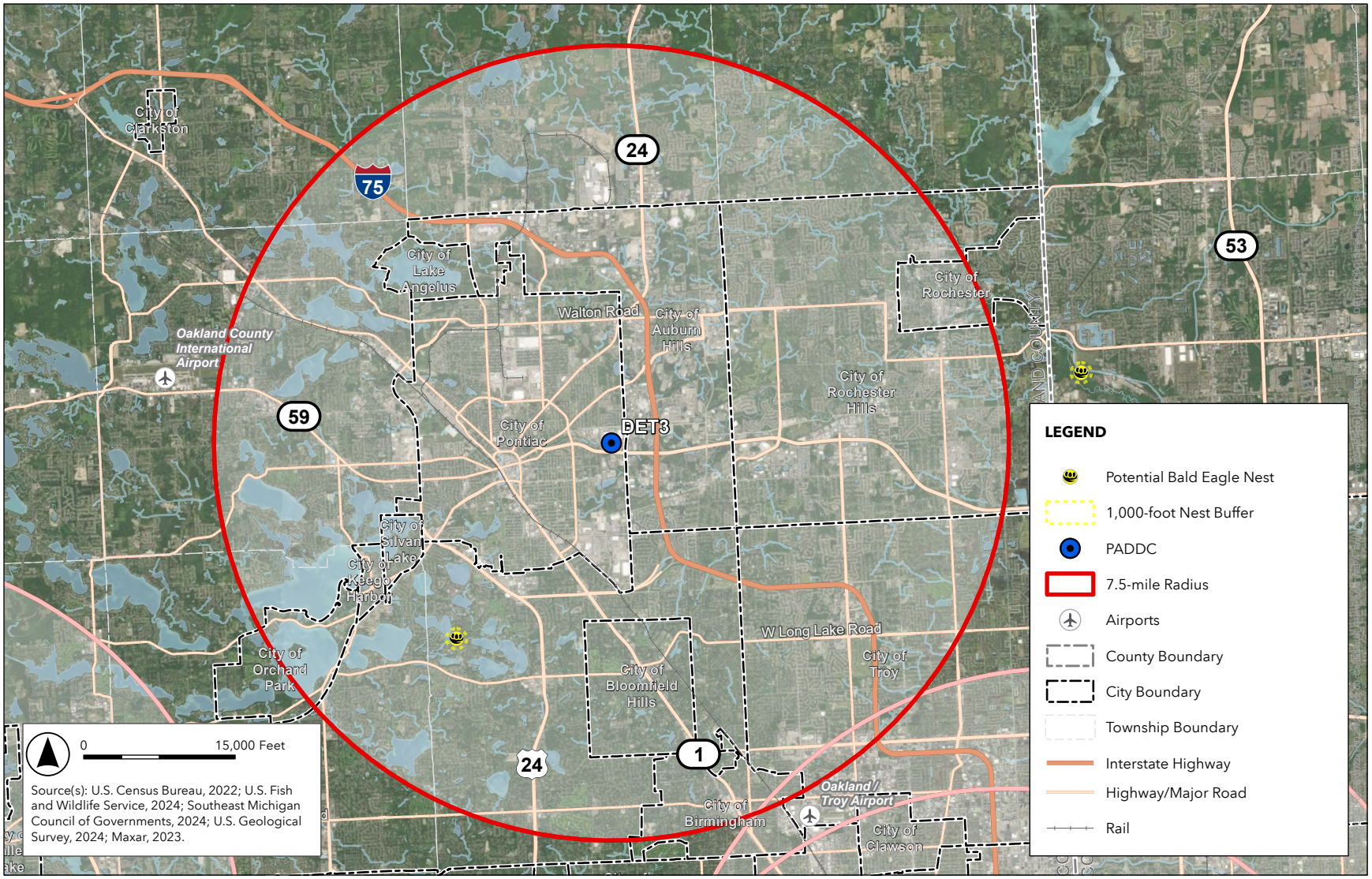
Potential Bald Eagle Nest Locations
PADDC STW1



Potential Bald Eagle Nest Locations
PADDC SMI1



Potential Bald Eagle Nest Locations
PADDC DET6



Potential Bald Eagle Nest Locations
PADDC DET3

ESA

From:	Hurst, Christopher A (FAA)
To:	Neal Wolfe
Cc:	Fitzpatrick, Jim; 9-FAA-Drone-Environmental (FAA)
Subject:	FW: [EXTERNAL] RE: FAA: Amazon Application for Package Delivery utilizing Drones in Detroit, MI
Date:	Thursday, July 10, 2025 2:33:45 PM
Attachments:	Amazon 2025 Detroit MI ESA Section 7+signed.pdf 20241119 MA Consistency MI_Statewide (2).pdf

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Chris Hurst
REM/CEA/CESCO
Environmental Protection Specialist

AFS-752
General Aviation and Commercial Branch
Emerging Technologies Division
Office of Safety Standards, Flight Standards Service
christopher.a.hurst@FAA.gov
CST

From: East Lansing, FW3 <EastLansing@fws.gov>
Sent: Thursday, July 10, 2025 1:19 PM
To: Hurst, Christopher A (FAA) <Christopher.A.Hurst@faa.gov>
Cc: Hicks, Scott <scott_hicks@fws.gov>
Subject: Fw: [EXTERNAL] RE: FAA: Amazon Application for Package Delivery utilizing Drones in Detroit, MI

Hi Chris,

Sorry for the delay in our response on this request.

Thank you for your request for informal consultation on this project pursuant to section 7 of the Endangered Species Act, as amended (ESA) (16 U.S.C. § 1536), and the ESA's implementing regulations (50 CFR 402.13).

Our correspondence is based on your Technical Assistance letter for 'Project code: 2025-0021310, Project Name: DET, and your email (with attachments) sent on May 8, 2025. We concur with your "not likely to adversely affect" determination for the whooping crane (non-essential experimental population) for which effects are discountable. For all other

species, you made a "no effect" determination.

When the Action agency maintains discretionary involvement or control over the project, reinitiation of consultation is required (50 CFR 402.16(a)) under certain conditions: (1) if new information reveals effects of the project that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) if the project is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the written concurrence; or (3) if a new species is listed or critical habitat designated that may be affected by the project.

We appreciate the opportunity to cooperate with you in conserving endangered and threatened species. If you have any questions, please contact us at EastLansing@fws.gov.

Sincerely,
Carrie

Carrie Tansy
Acting Field Supervisor
USFWS Michigan Ecological Services Field Office
517-580-0284

From: 9-FAA-Drone-Environmental (FAA) <9-FAA-Drone-Environmental@faa.gov>
Sent: Thursday, May 8, 2025 1:06 PM
To: Hicks, Scott <scott_hicks@fws.gov>
Cc: Hurst, Christopher A (FAA) <Christopher.A.Hurst@faa.gov>; DeLaune, Jonathan (FAA) <jonathan.delaune@faa.gov>; Fitzpatrick, Jim <fitzpkja@amazon.com>; Neal Wolfe <nwolfe@esassoc.com>
Subject: [EXTERNAL] RE: FAA: Amazon Application for Package Delivery utilizing Drones in Detroit, MI

Good afternoon,

Please see ESA Section 7 consultation for Amazon Prime Air (Amazon) Inc. has submitted an application to FAA to conduct package delivery utilizing drones in Detroit, MI.
Please let me know if you have any questions or concerns.

FAA is very appreciative and aware of recent staffing transitions in the federal workforce. Please let us know if an extended review time may be needed.

Very respectfully,

Chris

Chris Hurst

REM/CEA/CESCO

Environmental Protection Specialist

AFS-752

General Aviation and Commercial Branch

Emerging Technologies Division

Office of Safety Standards, Flight Standards Service

christopher.a.hurst@FAA.gov

CST

From: Hicks, Scott <scott_hicks@fws.gov>
Sent: Monday, November 18, 2024 8:44 AM
To: Hurst, Christopher A (FAA) <Christopher.A.Hurst@faa.gov>
Subject: Re: FAA: Amazon Application for Package Delivery utilizing Drones in Detroit, MI

Hi Chris,

There good chance there would not be any T&E issues with this application for Detroit.

We recommend running all projects through our on-line planning tool -- the Michigan All Species Determination Key (D-key) in our IPaC system (please note its the first option of D-keys in IPaC for a project in Michigan).

Resources on how to use IPaC --

https://www.fws.gov/sites/default/files/documents/MIFO_IPAC_instructions_revised%20Jan2022_FINAL_0.pdf

Please watch this video on how to use the All Species Michigan Dkey:
https://www.youtube.com/watch?v=FfcerNCiL0IDkey

In many cases, the All Species Michigan determination Key will provide an automated concurrence for a project (e.g., by implementing certain standard BMPs where needed).

In IPAC are other tools, please **DO NOT** use the Consultation Package Builder (it is not needed for this type of project and the tool is still under development) and when it comes to the IPAC D-keys please be sure to use the "Michigan All Species"

If after entering the project into the Michigan All Species Determination Key you have questions, please let me know.

Happy to jump on a call as needed, but starting with the Michigan All species Determination key is the best bet.

Thanks

Scott

Field Supervisor

U.S. Fish and Wildlife Service

Michigan Ecological Services Field Office

2651 Coolidge Road, Suite 101

East Lansing, Michigan 48823

*New Phone Number: 517-580-0302

From: Christopher Hurst (FAA) <usfws@fws.gov>
Sent: Friday, November 15, 2024 2:40 PM
To: Hicks, Scott <scott_hicks@fws.gov>
Subject: FAA: Amazon Application for Package Delivery utilizing Drones in Detroit, MI

U.S. Fish & Wildlife Service

This email has been generated by the "send a message" contact form on your FWS.gov profile.

Submitted on Fri, 11/15/2024 - 19:40

Name Provided:
Christopher Hurst (FAA)

Email Provided:
christopher.a.hurst@FAA.gov

Subject
FAA: Amazon Application for Package Delivery utilizing Drones in Detroit, MI

Message
Good morning,
My name is Chris Hurst and I am an environmental specialist with the FAA. I am currently working on a National Environmental Policy Act (NEPA) review (Environmental Assessment (EA)) in which Amazon Prime Air (Amazon) Inc. has submitted an application to FAA to conduct package delivery utilizing drones in Detroit, MI.

In accordance with the National Environmental Policy Act (NEPA), Federal Aviation Administration (FAA) Order 1050.1F, and Section 7 of the Endangered Species Act (ESA), the FAA will be requesting U.S. Fish and Wildlife Service (USFWS) concurrence that the FAA's action of authorizing Amazon Prime Air (Prime Air) to conduct commercial drone package delivery operations from its Prime Air Drone Delivery Centers (PADDC) located in Detroit, MI may have potential effects to certain ESA-listed species.

Based on our previous experience with the USFWS on similar drone delivery projects at College Station, TX and Tolleson, AZ, the FAA would like to host a virtual discussion with the USFWS to introduce the Proposed Project, prior to initiating formal Section 7 consultation. The FAA has found this approach to be highly productive and informative, for all parties involved, and critical to an efficient formal consultation process.

Package delivery using drones is an emerging industry and the intent of this meeting will provide an opportunity for FAA to share more information with your office about the project, solicit any initial feedback, and create a dialogue between our offices to discuss questions and concerns.

Below is project introductory language from the draft EA we're developing. Hope this helps.

Prime Air projects flying up to approximately 469 MK30 drone flights per operating day from one of the four Prime Air Drone Delivery Centers (PADDC) located in Detroit, with each flight taking a package to a customer delivery address before returning to the PADDC. The number of flights per day would vary based on customer demand and weather conditions. Prime Air is taking an incremental approach to operations and expects to gradually ramp up to approximately 469 flights per day as consumer demand increases over time. Drone flights could be conducted up to 365 days a year and, as Prime Air ramps up operations, it could operate up to 10 hours per day, but only during daylight hours.

The Prime Air MK30 drone is a hybrid multicopter fixed-wing tail- sitter drone with six propulsors allowing it to take-off and land vertically and transition to wing borne flight. Its airframe is composed of staggered tandem wings for stable wing borne flight. The drone weighs 78.15 pounds and has a maximum takeoff weight of 83.292 pounds, which includes a maximum payload of 5 pounds. It has a maximum operating range of 7.5 miles and can fly up to 58 knots during wing borne flight. It uses electric power from rechargeable lithium-ion batteries.

The MK30 drone would generally be operated at an altitude of 300 feet above ground level (AGL) and up to a maximum operating altitude of 400 feet AGL while en route to and from delivery locations. At a delivery location, the drone would descend vertically to a stationary hover at around 13 feet AGL and drop a package to the ground. Once a package has been delivered, the drone would ascend vertically to the en route altitude and depart the delivery area back to the PADDC. The drone would fly a predefined flight path that is set prior to takeoff. Flight missions would be automatically planned by Prime Air's flight planning software, which assigns, deconflicts, and routes each flight.

This Draft Environmental Assessment (EA) is being prepared by the FAA to evaluate the

potential environmental impacts that may result from FAA's approval of the proposed action, the amendment of Prime Air OpSpecs to grant airspace access to the MK30 in the proposed operating area.

The issuance of an OpSpec is considered a major federal action subject to environmental review requirements."

Look forward to discussing.

Very respectfully,

Chris Hurst
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