Appendix B

Biological Resources and Agency Consultation

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Federal Aviation Administration

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SUBJECT: Endangered Species Act Section 7 Consultation for Drone Commercial Package Delivery Operations in Texas

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 22 Prime Air Drone Delivery Centers (PADDCs) located throughout Texas (the Proposed Action), is ***not likely to adversely affect*** the tricolored bat (*Perimyotis subflavus*), Eastern Black Rail (*Laterallus jamaicensis spp. Jamaicensis*), Golden-Cheeked Warbler (*Setophaga chrysoparia*), Piping Plover (*Charadrius melodus*), Rufa Red Knot (*Caliris canutus rufa*), Whooping Crane (*Grus americana*), Southwestern Willow Flycatcher (*Empidonax traillii extimus*), Yellow-Billed Cuckoo (*Coccyzus americanus*), Red Cockaded Woodpecker (*Dryobates borealis*), Attwater's Greater Prairie-Chicken (*Tympanuchus cupido*), and Northern Aplomado Falcon (*Falco femoralis septentrionalis*). Additionally, the Proposed Action would have ***no effect*** on monarch butterfly (*Danaus plexippus*).

Project Description

Prime Air is seeking authorization to conduct commercial package deliveries using drones throughout the state of Texas. 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 22 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 22 PADDCs, 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.

Unmanned Aircraft

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 22 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.

The action area falls into six different ecoregions. The western PADDC location is within the Chihuahuan Desert region characterized predominantly with semi-desert grassland and arid shrubland, except for high elevation islands of oak, juniper, and pinyon pine woodland. The ecoregion along the southern coast, Gulf Coast Prairies and Marshes, is relatively flat topography and mainly grassland potential natural vegetation. The Western Gulf Coastal Plain ecoregion is mostly irregular plains and represents the western edge of the southern coniferous forest belt. Once blanketed by a mix of pine and hardwood forests, much of the region is now in loblolly and shortleaf pine plantations. The Texas Blackland Prairies is grasses including little bluestem, big bluestem, yellow Indiangrass, and switchgrass. This region now contains a higher percentage of cropland than adjacent regions; pasture and forage production for livestock is common. The Edwards Plateau is dominated by juniper-oak savanna and mesquite-oak savanna. Most of the region is used for grazing beef cattle, sheep, goats, exotic game mammals, and wildlife. The Cross Timbers ecoregion is a transitional area between the once prairie, now winter wheat growing regions to the west, and the forested low mountains or hills of eastern Oklahoma and Texas.

As indicated above, the Proposed Action would take place over high to medium density developed urban and commercial areas, and some rural and agricultural areas scattered throughout the action area. Therefore, wildlife habitats within the action area predominantly include parks, a few open spaces, waterways, and vacant lands. These areas provide habitat for many of the more common and ubiquitous bird and mammal species in the region, including white-tailed deer, eastern gray squirrels, eastern cottontails, raccoons, armadillos, mice, badgers, songbirds, raptors, waterfowl, and insects.

ESA-Listed Species and Critical Habitat in the Action Area

The FAA acquired the Official Species Lists (see **Attachment D**) from the USFWS Information for Planning and Conservation (IPaC) online system to identify ESA-listed, proposed-listed, and candidate species within the action area. Based on earlier coordination with USFWS, of the species identified in the IPaC review only 12 species may be affected by the drone operations. These are listed below in **Table 1** by the USFWS Ecological Field Office. The remaining species have limited habitat within the action area and include many cave-dwelling and aquatic species which would not be affected. These species include: alligator snapping turtle (*Macrochelys temminckii*), Austin blind salamander (*Eurycea waterlooensis*), Balcones spike (*Fusconaia iherngi*), beetles (*Rhadine exilis*) and (*Rhadine infernalis*), Bone Cave harvestman (*Texella reyes*), bracted twistflower (*Streptanthus bracteatus*), Coffin Cave mold beetle (*Batrisodes texanus*), Cokendolpher Cave harvestman (*Texella cokendolpheri*), Comal Springs dryopid beetle (*Stygoparnus comalensis*), Comal Springs riffle beetle (*Heterelmis comalensis*), false spike (*fusconaia mitchelli*), fountain darter (*Etheostoma fonticola*), Government Canyon Bat Cave meshweaver (*Cicurina vespera*), Government Canyon Bat Cave spider (*Tayshaneta microps*), green sea turtle (*Chelonia mydas*), Guadelupe fatmucket (*Lampsilis bergmanni*), Guadalupe orb (*Cyclonaisa necki*), hawksbill sea turtle (*Eretmochelys imbricata*), Helotes mold beetle (*Batrisodes venyivi*), Jollyville Plateau salamander (*Eurycea tonkawae*), Kemp's Ridley sea turtle (*Lepidochelys kempii*), Madla Cave meshweaver (*Cicurina madla*), Mexican Spotted Owl (*Strix occidentalis lucida*), Northern Aplomado Falcon (*Falco femoralis septentrionalis*), Peck's Cave amphipod (*Stygobromus pecki*), Robber Baron Cave meshweaver (Cicurina baronia), San Marcos salamander (*Eurycea nana*), Sneed pincushion cactus (*Coryphanhta sneedii* var *sneedii*), Texas blind salamander (*Eurycea rathbuni*), Texas fatmucket (*Lampsilis bracteata*), Texas fawnsfoot (*Truncilla macrodon*), Texas heelsplitter (*Potamilus amphichaenus*), Texas pimpleback (*Cyclonaias petrina*), Texas prairie dawn-flower (*Hymenoxys texana*), Texas wild-rice (*Zizania texana*), Tooth Cave ground beetle (*Rhadine persephone*), Tooth Cave spider (*Tayshaneta myopica*), and the West Indian manatee (*Trichechus manatus*).

Table 1. ESA-Listed Species, Species Proposed for Listing, and Candidate Species Potentially Present which may be affected in the Action Areas by USFWS Ecological Field Office

Arlington Ecological Services Field Office (DAL3, DFW7, FTW4, IHA1, STX2, STX3, STX8)

Species	Common Name	Species Name	Federal Status	Critical Habitat
Mammals	Tricolored bat	*Perimyotis subflavus*	Proposed Endangered	N
Birds	Golden-Cheeked Warbler	*Setophaga chrysoparia*	Endangered	N
	Piping Plover	*Charadrius melodus*	Threatened	N
	Rufa Red Knot	*Caliris canutus rufa*	Threatened	N
	Whooping Crane	*Grus americana*	Endangered	N
Insects	Monarch butterfly	*Danaus plexippus*	Candidate Species	N

Austin Ecological Services Field Office (AUS2, AUS3, ELP1, SAT2, SAT3, STX6, STX7, STX9)

Species	Common Name	Species Name	Federal Status	Critical Habitat
Mammals	Tricolored bat	*Perimyotis subflavus*	Proposed Endangered	N
Birds	Golden-Cheeked Warbler	*Setophaga chrysoparia*	Endangered	N
	Piping Plover	*Charadrius melodus*	Threatened	N
	Rufa Red Knot	*Caliris canutus rufa*	Threatened	N
	Whooping Crane	*Grus americana*	Endangered	N
	Southwestern Willow Flycatcher	*Empidonax traillii extimus*	Endangered	N
	Yellow-Billed Cuckoo	*Coccyzus americanus*	Threatened	N
	Northern Aplomado Falcon	*Falco femoralis septentrionalis*	Endangered	N
Insects	Monarch butterfly	*Danaus plexippus*	Candidate Species	N

Texas Coastal and Central Plains Ecological Services Field Office (HOU2, HOU6, SAH1, SAHx, SATx, STX4, STX5)

Species	Common Name	Species Name	Federal Status	Critical Habitat
Mammals	Tricolored bat	*Perimyotis subflavus*	Proposed Endangered	N
Birds	Eastern Black Rail	*Laterallus jamaicensis ssp. Jamaicensis*	Threatened	N
	Piping Plover	*Charadrius melodus*	Threatened	N
	Rufa Red Knot	*Caliris canutus rufa*	Threatened	N
	Whooping Crane	*Grus americana*	Endangered	N
	Red Cockaded Woodpecker	*Dryobates borealis*	Threatened	N
	Attwater's Greater Prairie-Chicken	*Tympanuchus cupido*	Endangered	N
Insects	Monarch butterfly	*Danaus plexippus*	Candidate Species	N

SOURCE: USFWS IPaC, accessed May 2025.

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 ESA-listed and candidate species, as listed in **Table 1**.

Tricolored bat

The tricolored bat is a federally protected species that could be located within the action area. The Proposed Action would occur during the dusk emergence of bat activity during the evening civil twilight hours; however, drone service would not affect the dawn civil twilight hours. Research suggests that drones have "minimal impact on bat and owl 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 (i.e., when bats are not hibernating). Bats at roost or in flight could experience drone noise during the en route and delivery flight phases. When foraging at or near the tree line at the time a drone flies by, bats 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 nests 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 the above referenced bat species. 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.

The FAA has determined that the Proposed Action is ***not likely to adversely affect*** the tricolored 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).

Golden-cheeked Warbler

Golden-Cheeked Warblers (*Setophaga chrysoparia*) are a small, yellow-cheeked bird with black and white plumage. They nest only in central Texas mixed Ashe-juniper and oak woodlands in ravines and canyons. Warblers eat insects and spiders found on the leaves and bark of oaks and other trees. They use long strips of cedar bark and spider webs to build their nests. They come to Texas in March to nest and raise their young and leave in July to spend the winter in Mexico and Central America. The Golden-Cheeked Warbler is the only one warbler that nests exclusively in Texas. The proposed action areas are largely located within urban areas with no disturbance anticipated to oak woodlands. The FAA has determined that the Proposed Action is ***not likely to adversely affect*** the Golden-Cheeked Warbler.

Eastern Black Rail

The Eastern Black Rail (*Laterallus jamaicensis ssp. Jamaicensis*) is a sparrow size, secretive marsh bird, and the smallest rail in North America. They require dense vegetative cover that allows movement underneath the canopy and can be found in a variety of salt, brackish, and freshwater marsh habitats that can be tidally or non-tidally influenced. Nesting in Texas begins in March. The proposed action areas are largely located within urban areas with no disturbance anticipated to marsh wetlands. The FAA has determined that the Proposed Action is ***not likely to adversely affect*** the Eastern Black Rail.

Rufa Red Knot

Rufa Red Knot (*Calidris canutus rufa*) is stocky, medium-sized shorebird with relatively short bill and have a proportionately small head, small eyes, and short neck, and a black bill that tapers from a stout base to a relatively fine tip. Coastal habitats such as estuarine and marine habitats are used by the Red Knot as well as muddy or sandy coastal areas, specifically, bays and estuaries, tidal flats, and unimproved tidal inlets. Along the U.S. Atlantic coast, dynamic and ephemeral features are important Rufa Red Knot habitats, including sand spits, islets, shoals, and sandbars, features often associated with inlets. The Proposed Action is not expected to occur along coastal areas utilized by the Red Knot therefore, The FAA has determined that the Proposed Action is ***not likely to adversely affect*** the Rufa Red Knot.

Whooping Crane

Whooping Cranes (*Grus americana*) are the tallest birds in North America. Whooping Cranes are white with rust-colored patches on top and back of head, lack feathers on both sides of the head, yellow eyes, and long, black legs and bills. Their primary wing feathers are black but are visible only in flight. Although they breed in Canada during the summer months, Whooping Cranes migrate to Texas' coastal plains near Rockport, in

and around Aransas National Wildlife Refuge, from November through March. Whooping Cranes migrate throughout the central portion of the state from the eastern panhandle to the DFW area and south through the Austin area to the central coast during October-November and again in April. 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).

Southwestern Willow Flycatcher

The Southwestern Willow Flycatcher (*Empidonax traillii*) is a small passerine, or perching bird, It has a brownish-olive to gray-green upper body, a whitish throat contrasting with a pale olive breast, a pale yellow belly, and two light wing bars. The Southwestern Willow Flycatcher requires dense habitats with cottonwood/willow and tamarisk vegetation. Saturated soils, standing water or nearby streams, pools are known nesting habitat. Willow Flycatchers move through Texas from very late April to early June. South-bound migrants move through from Texas late July to early October. Breeding in Texas probably occurred in June and July. The Proposed Action is not expected to occur within densely wooded areas utilized by the species; therefore, The FAA has determined that the Proposed Action is ***not likely to adversely affect*** the Southwestern Willow Flycatcher.

Yellow-Billed Cuckoo

The Yellow-Billed Cuckoo (*Coccyzus americanus*) has a lower mandible that is yellow with a black upper bill that curves slightly downward. Head, neck, back and upper wings are brown, with a white chin, breast and belly. The varied diet includes insects (especially hairy caterpillars and cicadas) bird eggs, snails, small frogs, lizards, berries, and some fruit. They prefer open woodlands with dense undergrowth, overgrown orchards and pastures, moist thickets and willow groves along stream banks. The Proposed Action is not expected to occur within wooded areas utilized by the species; therefore, The FAA has determined that the Proposed Action is ***not likely to adversely affect*** the Yellow-Billed Cuckoo.

Red Cockaded Woodpecker

The Red Cockaded Woodpecker (*Leuconotopicus borealis*) is barred with black and white horizontal stripes. It has a black cap and nape that encircles large white cheek patches. The male has a small red streak on each side of its black cap. Red-Cockaded Woodpeckers roost and nest in cavities of live pine trees. The Proposed

Action is not expected to occur within wooded areas utilized by the species; therefore, The FAA has determined that the Proposed Action is ***not likely to adversely affect*** the Red Cockaded Woodpecker.

Attwater's Prairie Chicken

The Attwater's Prairie Chicken (*Tympanuchus cupido*) is a small, brown bird about 17 inches long, with short, rounded, dark tail. Males have large orange air sacs on the sides of their necks. Attwater's Prairie Chickens live on coastal prairie grasslands with tall grasses such as little bluestem, Indian grass, and switchgrass. The birds like a variety of tall and short grasses in their habitat. The proposed action areas are largely located within urban areas with no disturbance anticipated to prairie grasslands. The FAA has determined that the Proposed Action is ***not likely to adversely affect*** the Attwater Prairie Chicken.

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.

Conclusion

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

- There is no critical habitat located within the action areas for any species listed in Table 1 above,
- 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 345 feet 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 tricolored bat (*Perimyotis subflavus*), Eastern Black Rail (*Laterallus jamaicensis spp. Jamaicensis*), Golden-Cheeked Warbler (*Setophaga chrysoparia*), Piping Plover (*Charadrius melodus*), Rufa Red Knot (*Caliris canutus rufa*), Whooping Crane (*Grus americana*), Southwestern Willow Flycatcher (*Empidonax traillii extimus*), Yellow-Billed Cuckoo (*Coccyzus americanus*), Red Cockaded Woodpecker (*Dryobates borealis*), Attwater's Greater Prairie-Chicken (*Tympanuchus cupido*), and Northern Aplomado Falcon (*Falco femoralis septentrionalis*). Additionally, the Proposed Action would have ***no effect*** on monarch butterfly (*Danaus plexippus*).

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 a "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, and
- 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: 2025.06.11 09:19:18 -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

Altitudes attained by migrating monarch butterflies, Danaus p. plexippus (Lepidoptera: Danaidae), as reported by glider pilots. Available: https://cdnsciencepub.com/doi/abs/10.1139/z81-084. Accessed April 2022 and February 2024.

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Fu, Y., M. Kinniry, and L.N. Kloepper. 2018. The Chirocopter: A UAV for Recording Sound and Video of Bats at Altitude. Methods in Ecology and Evolution 9(6):1531-1535. Available: https://doi.org/10.1111/2041-210x.12992

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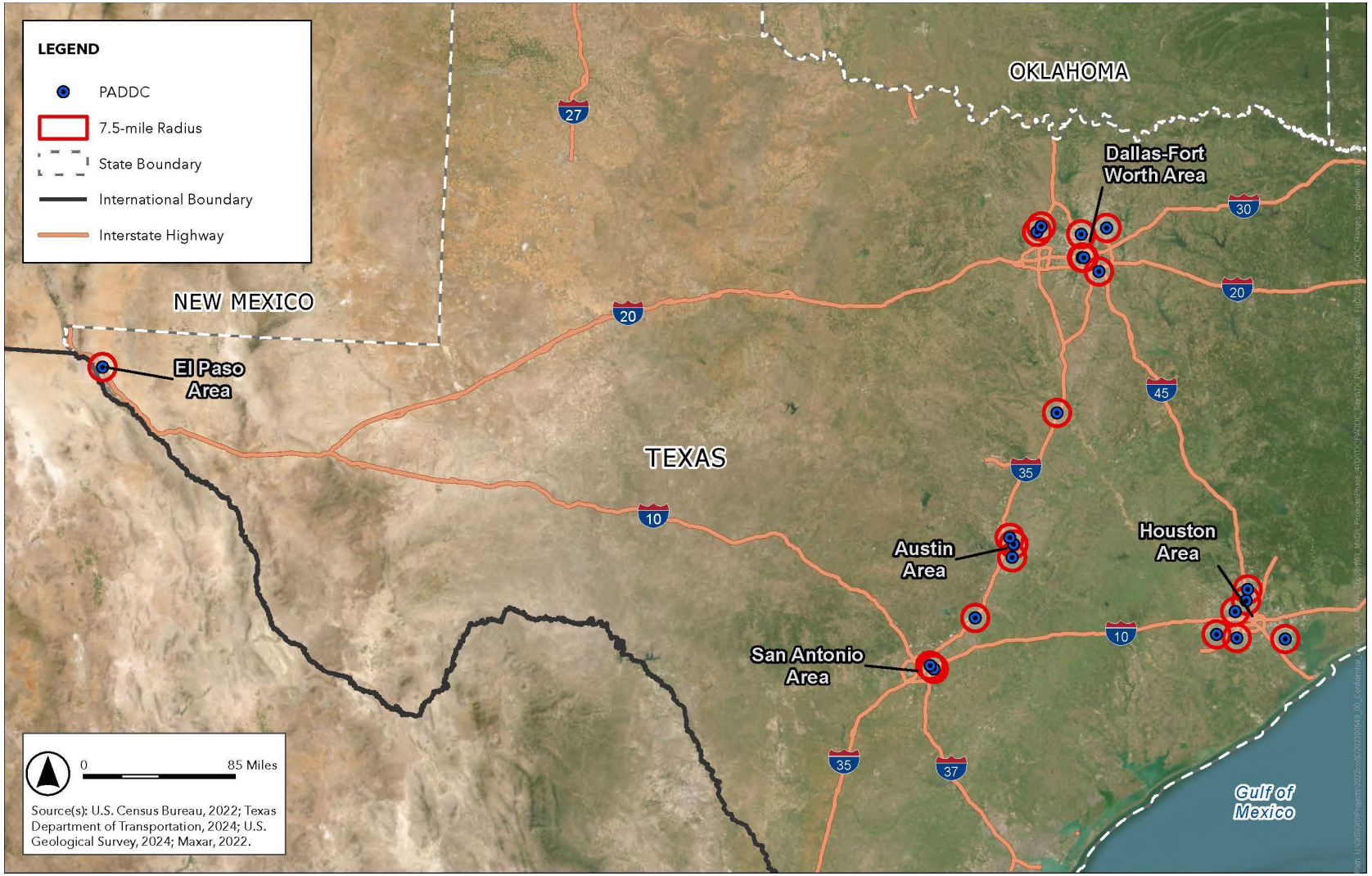
International Crane Foundation https://savingcranes.org/species/whooping-crane/, accessed December 2024.

U.S Fish and Wildlife Service – Eastern Black Rail. https://www.fws.gov/species/eastern-black-rail-laterallus-jamaicensis-jamaicensis. Accessed April 2025.

Attachment A

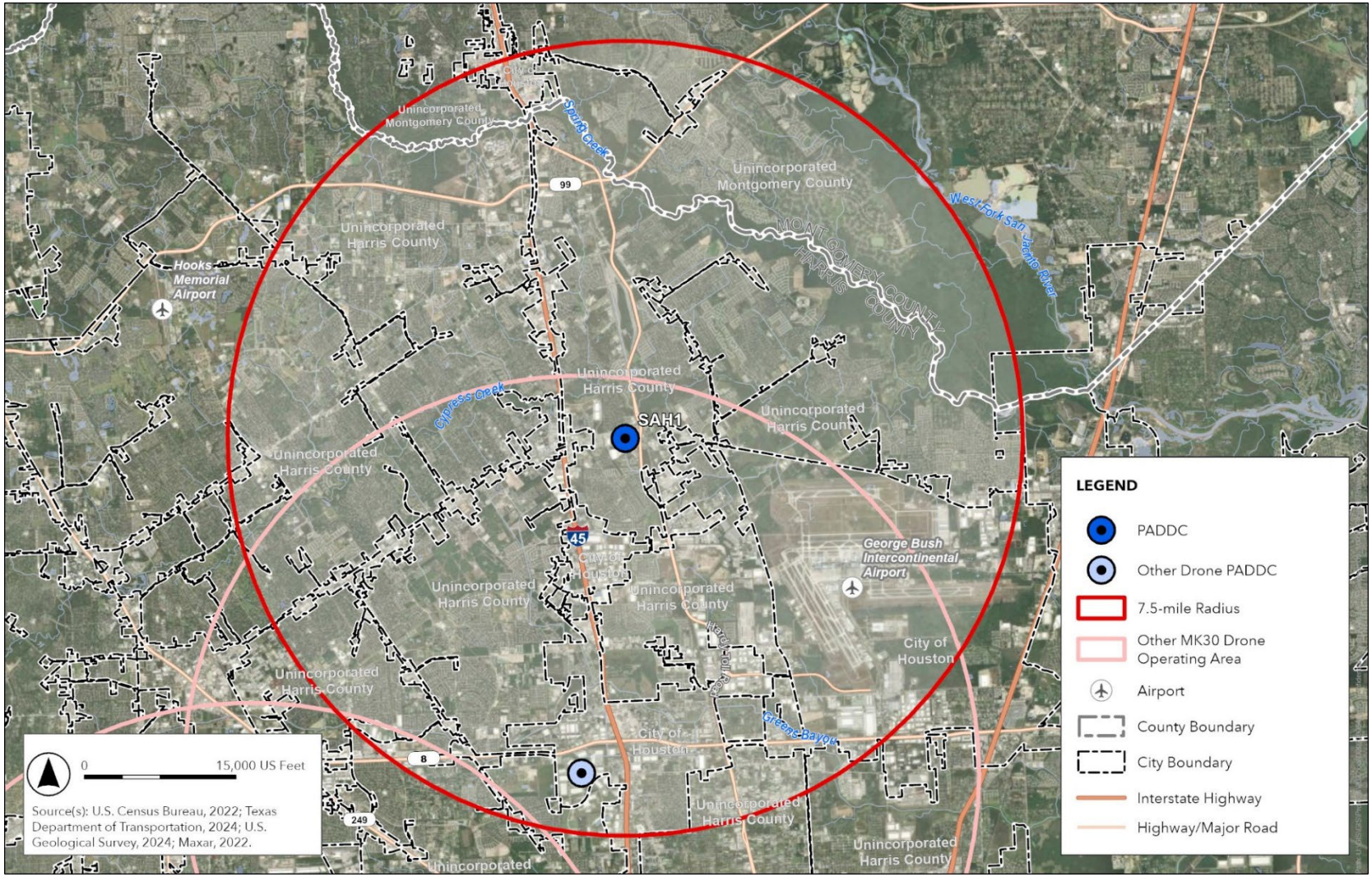
Proposed MK30 Operating Areas



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; US Geological Survey, 2024; Maxar, 2022.

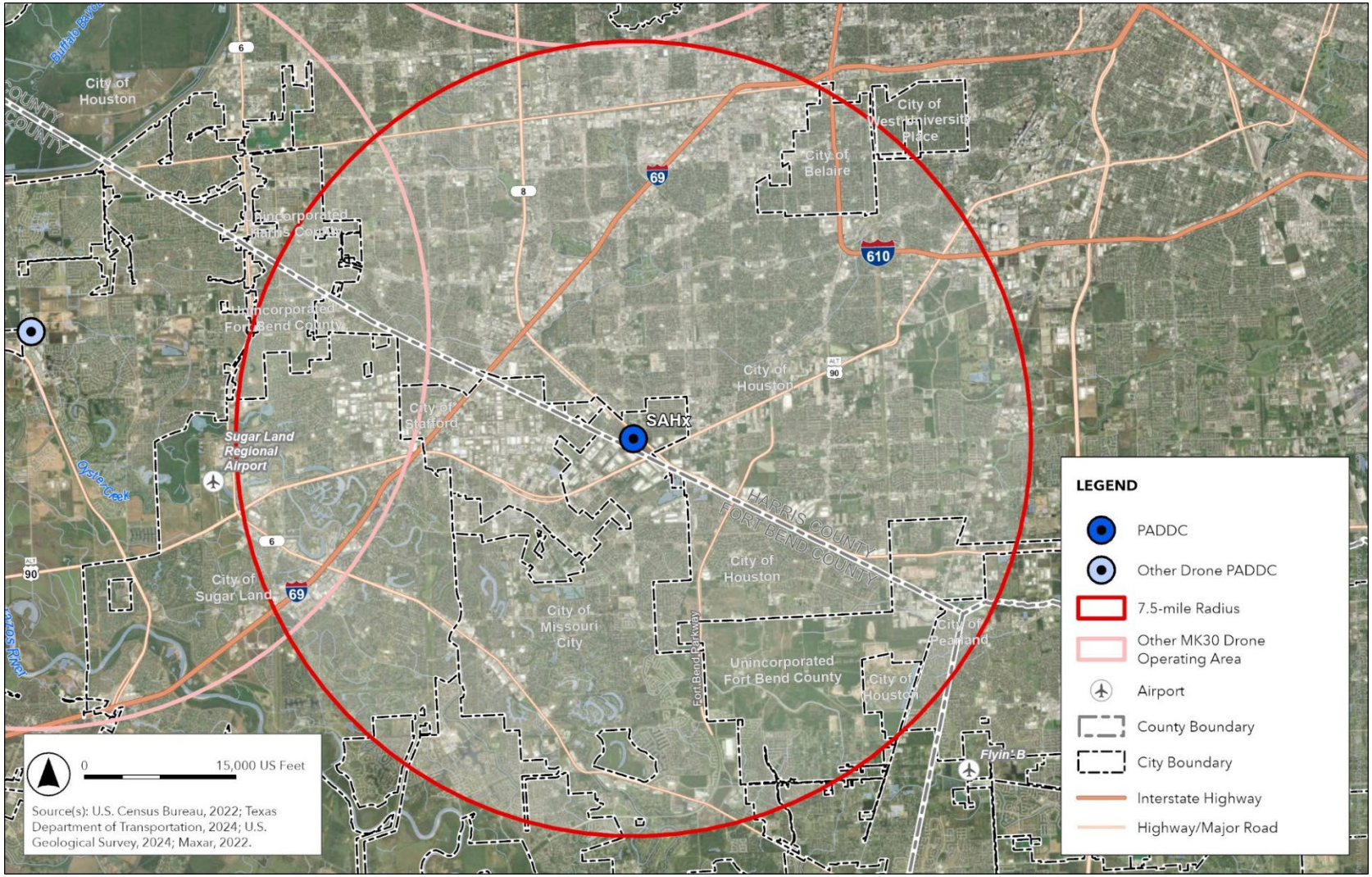
Figure 1

Action Areas – All PADDCs



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024 Maxar, 2022.

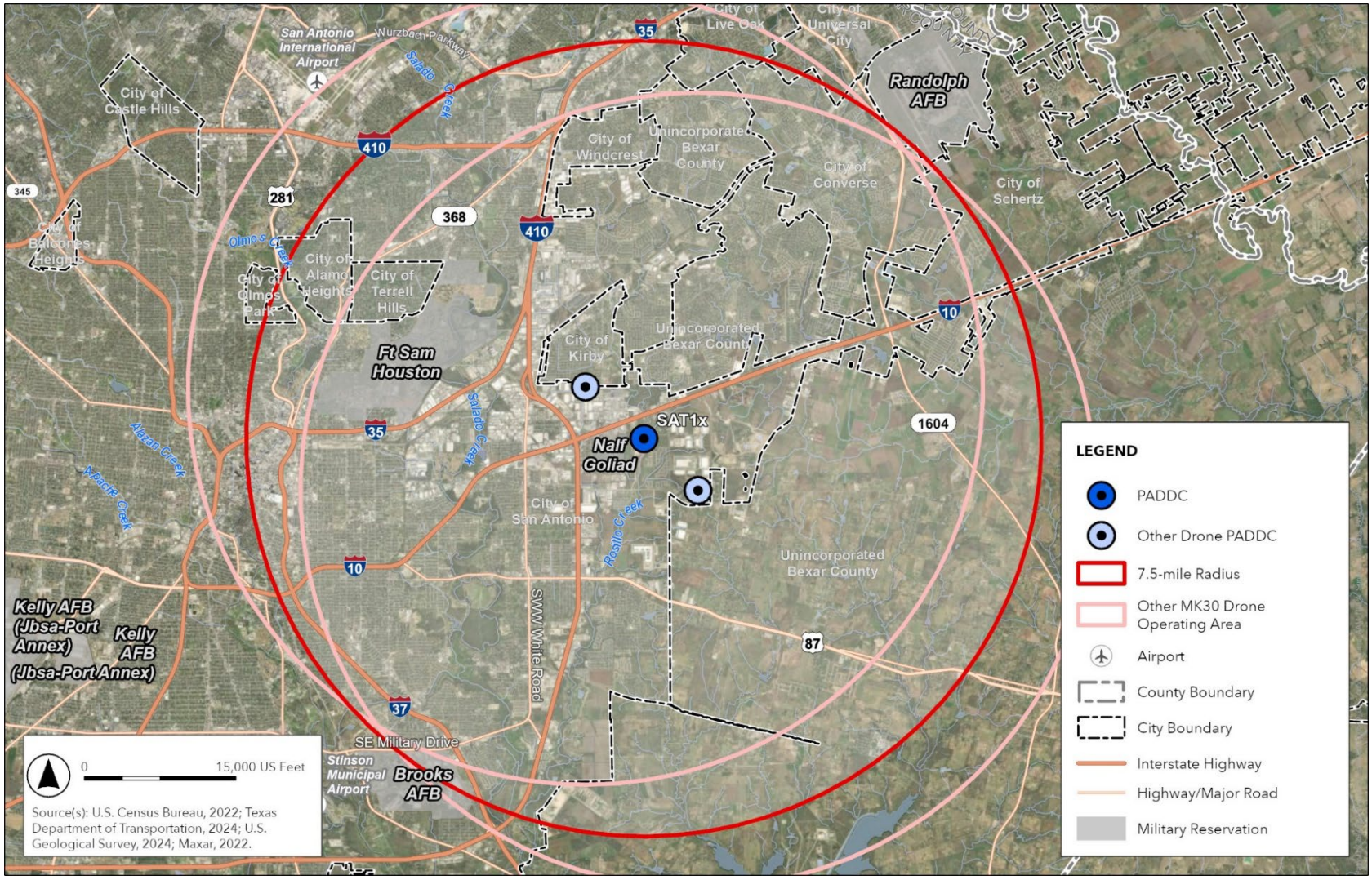
Figure 2
SAH1 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 3

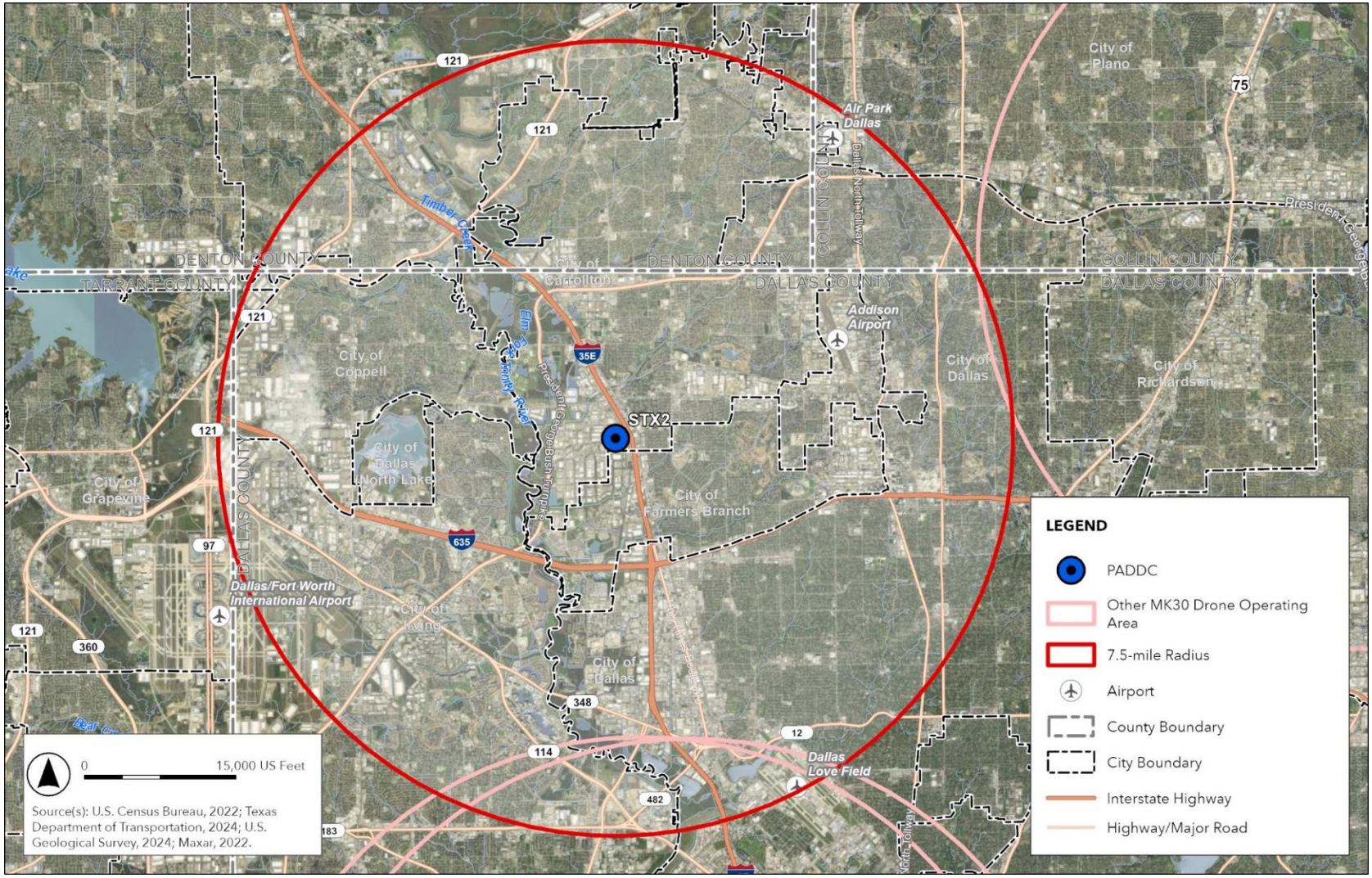
SAHx Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 4

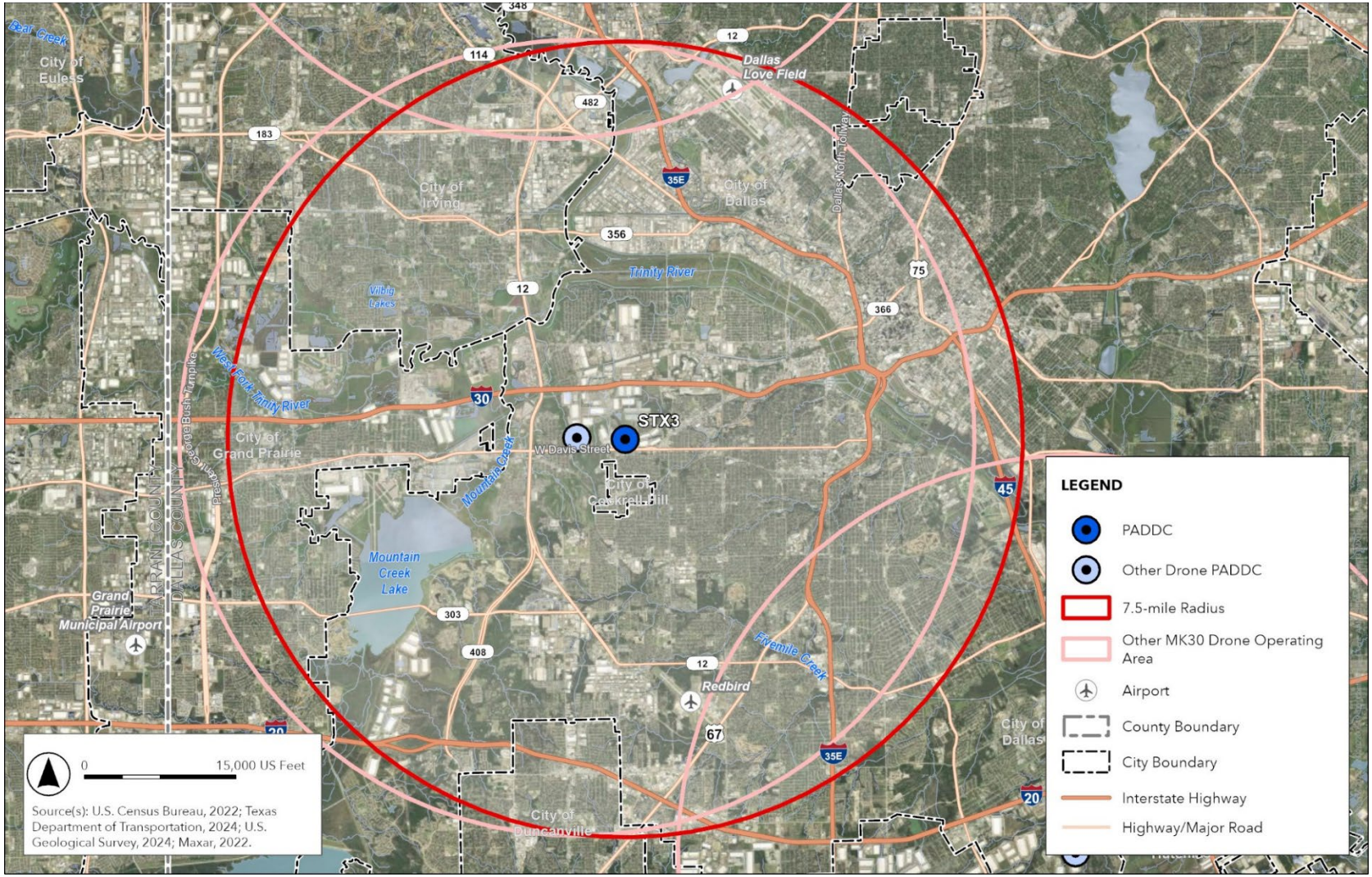
SAT1x Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 5

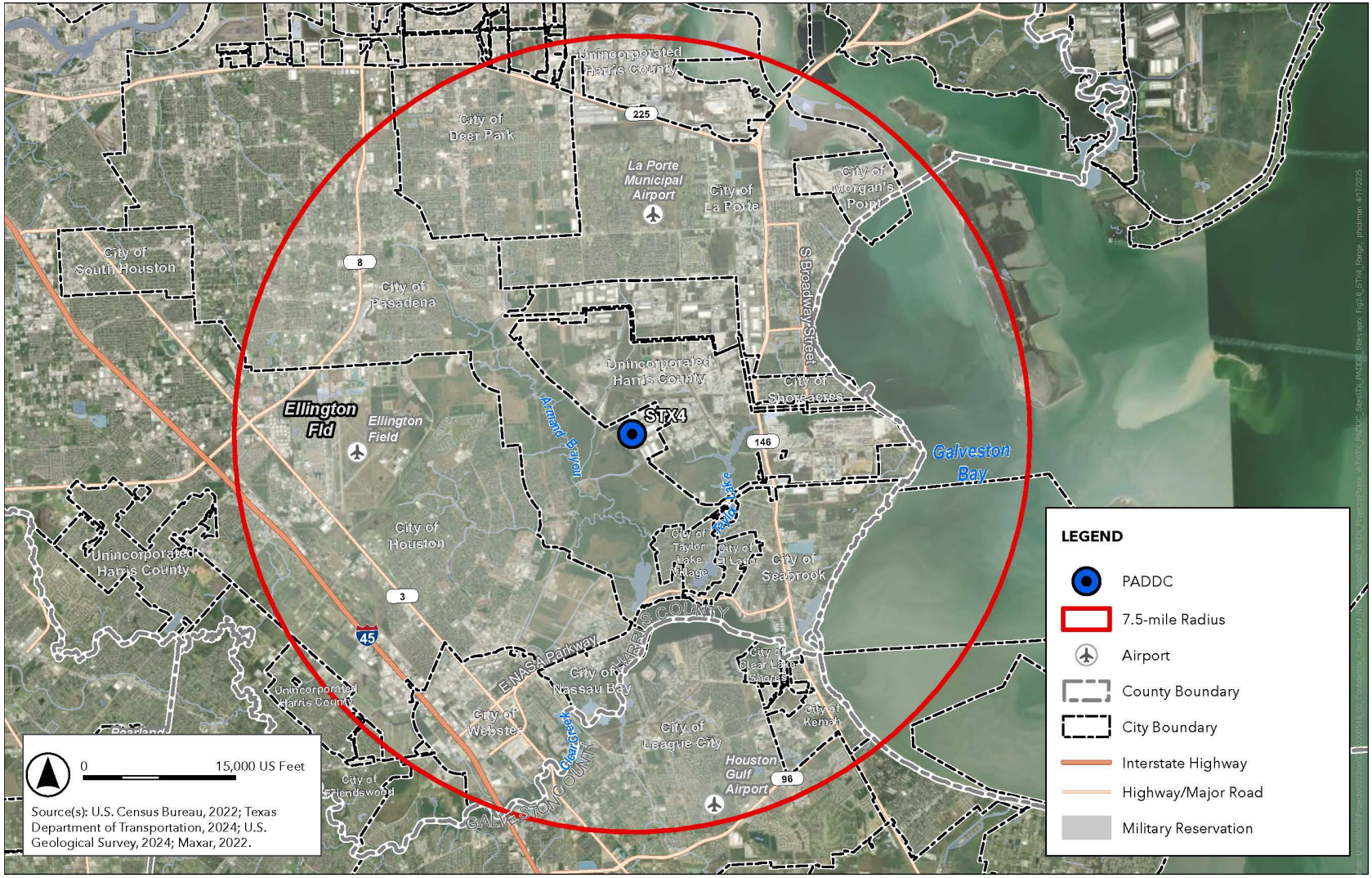
STX2 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 6

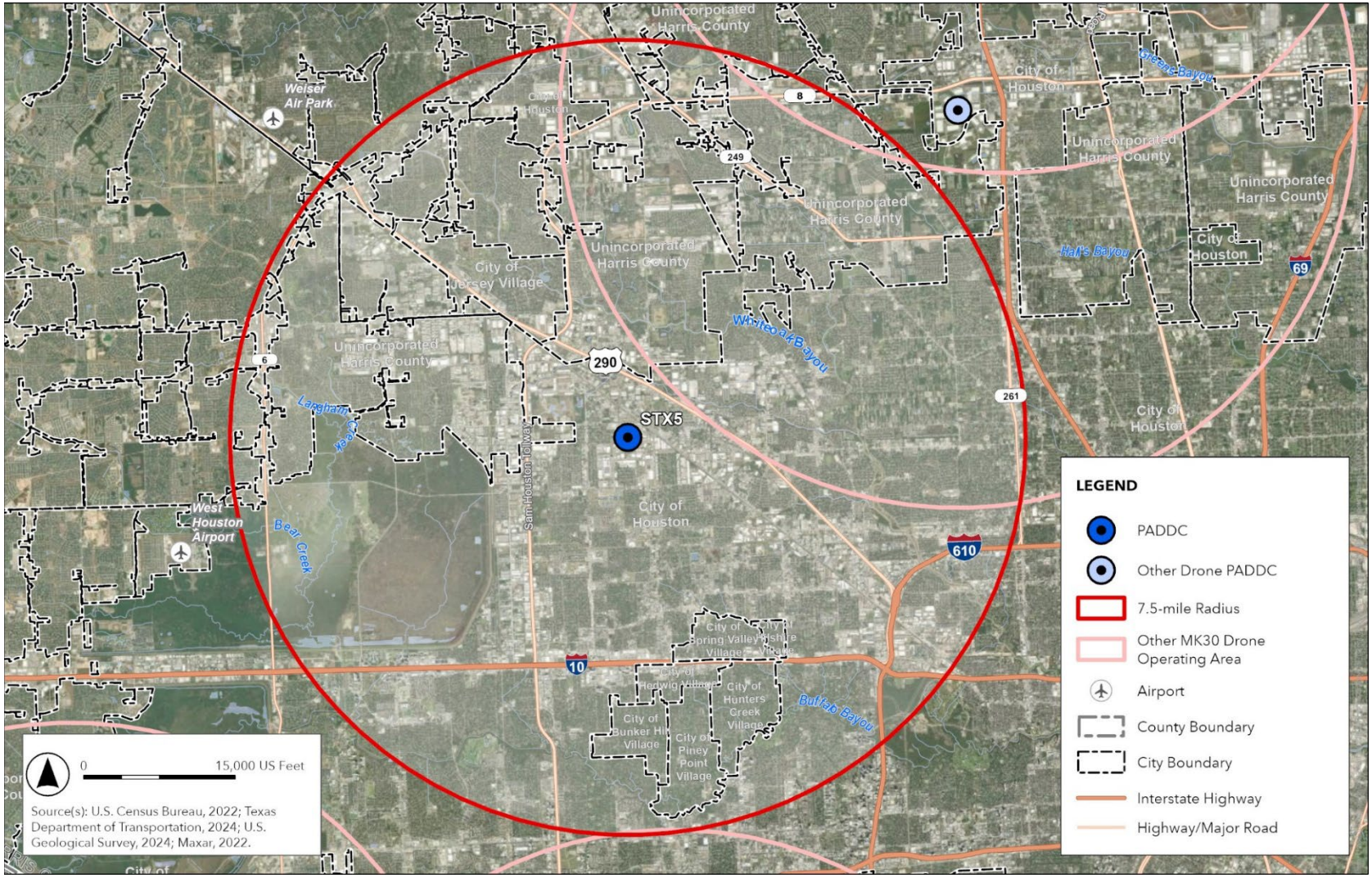
STX3 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 7

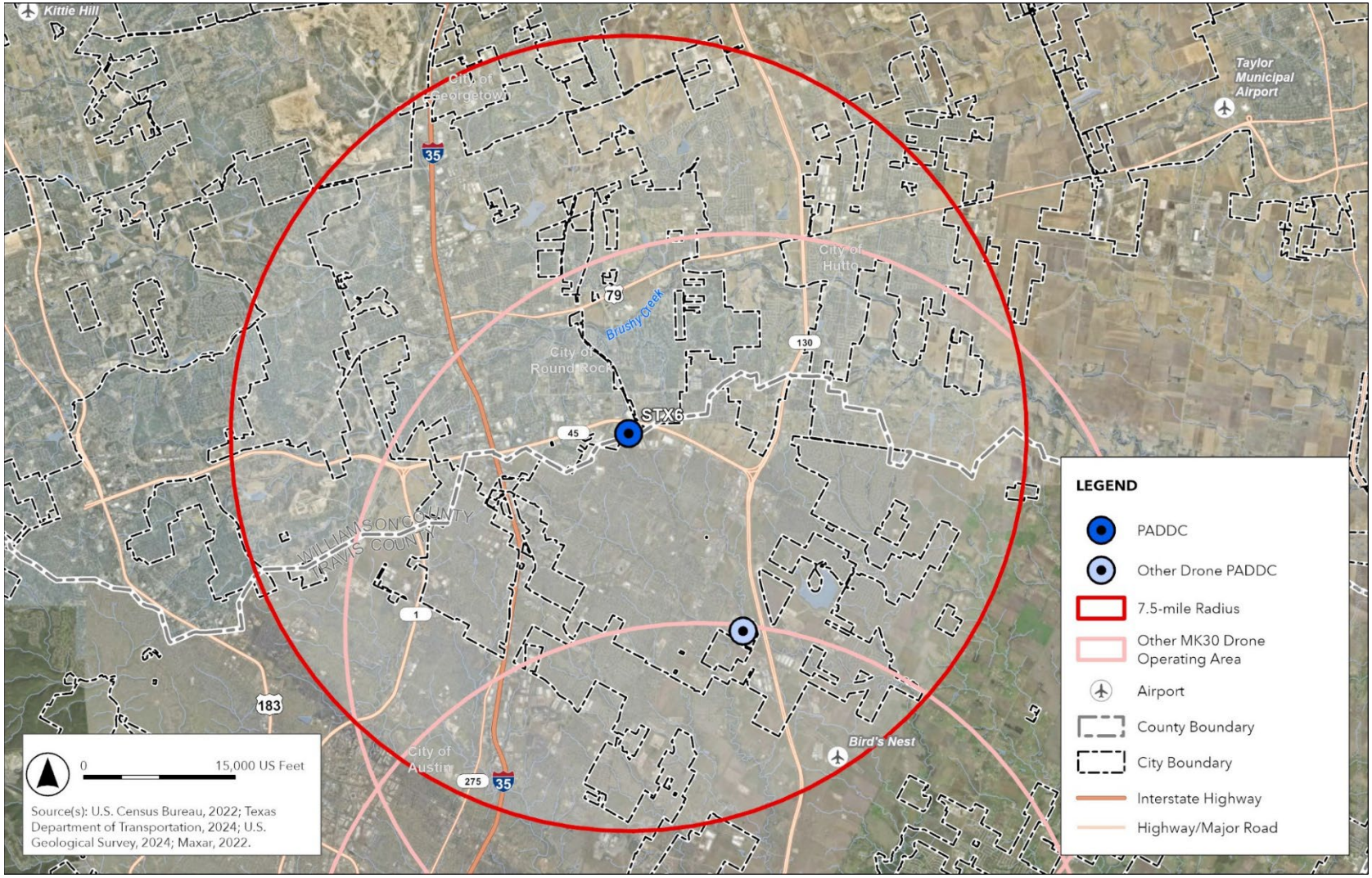
STX4 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 8

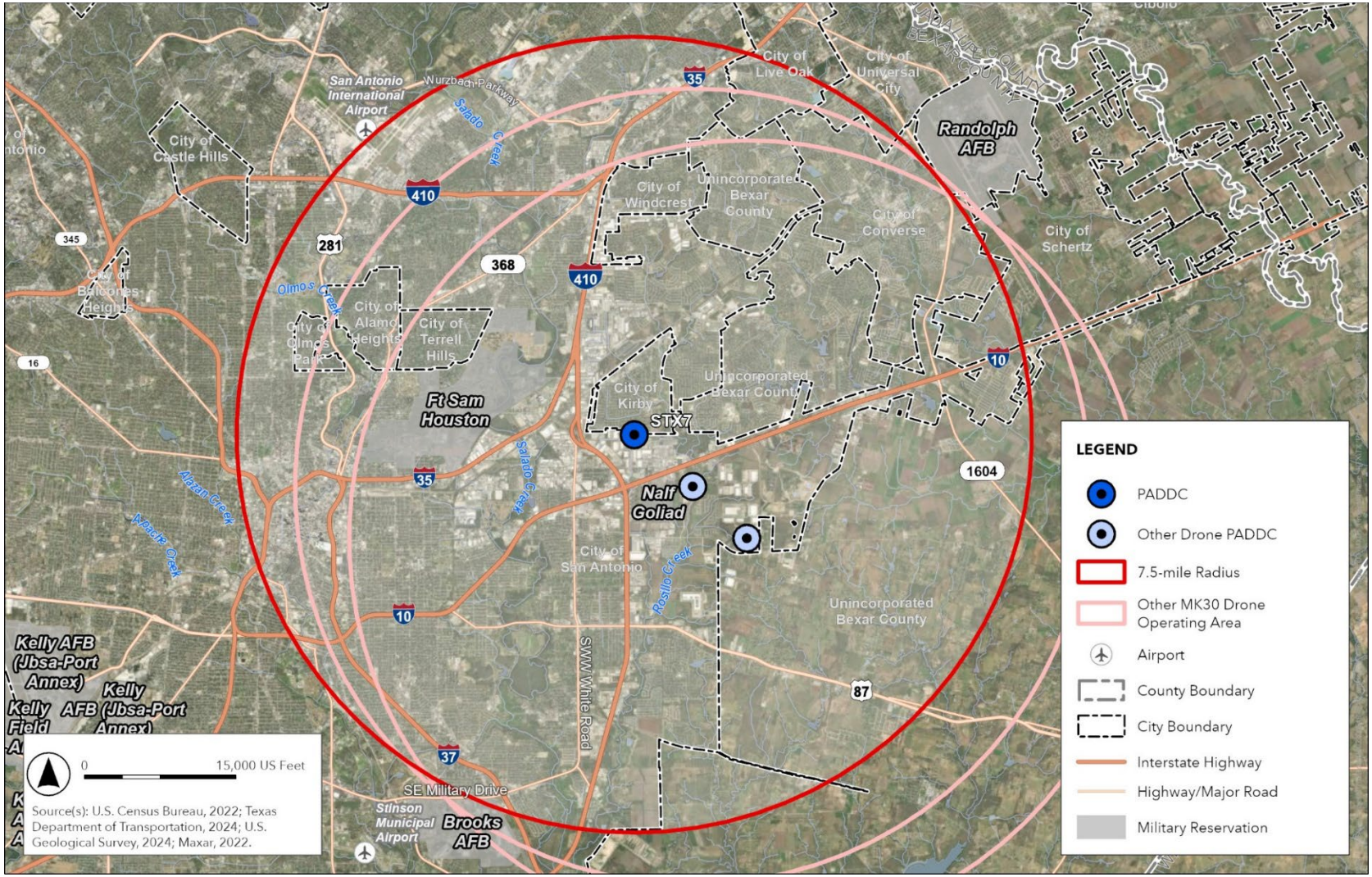
STX5 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 9

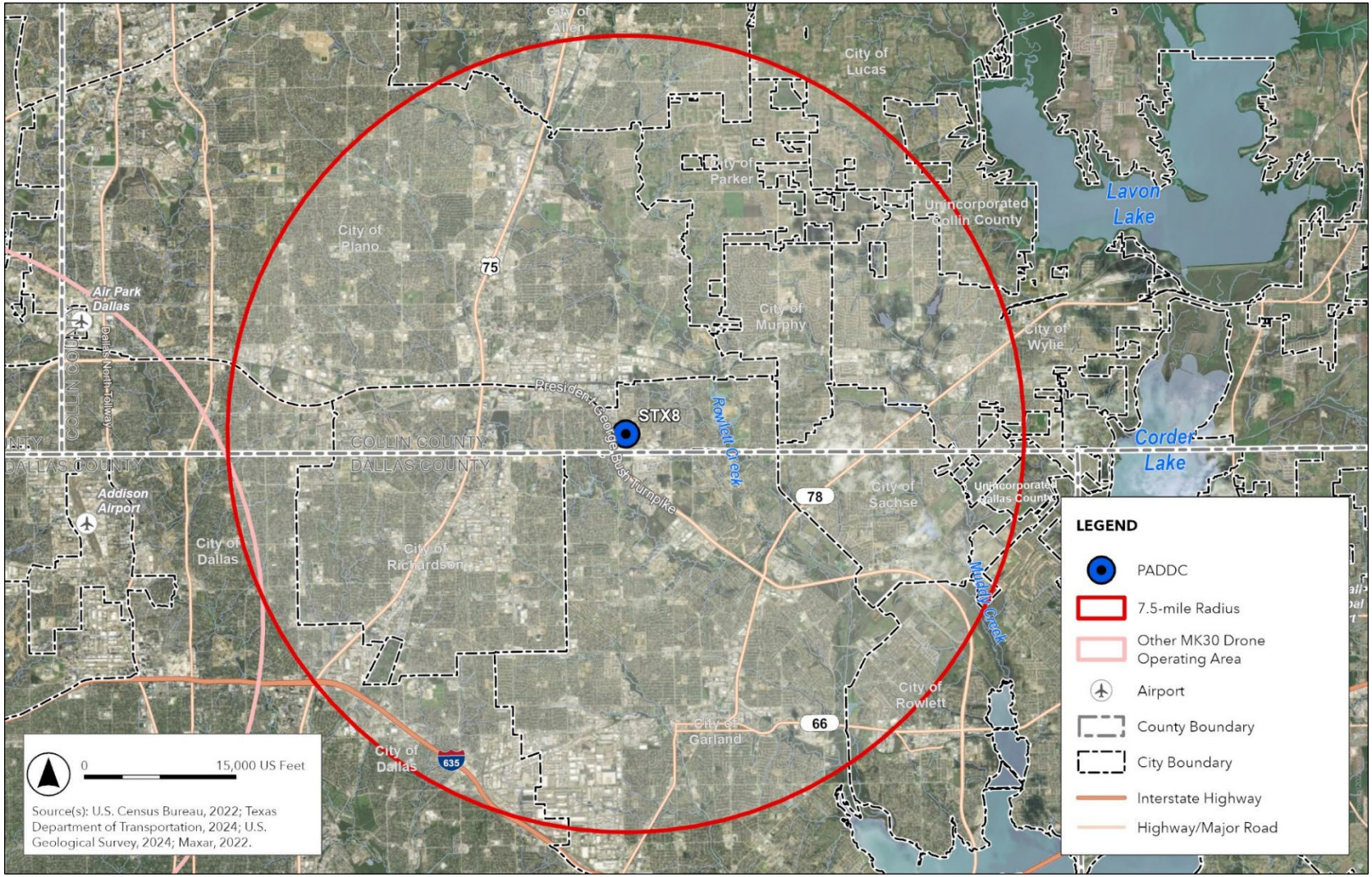
STX6 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

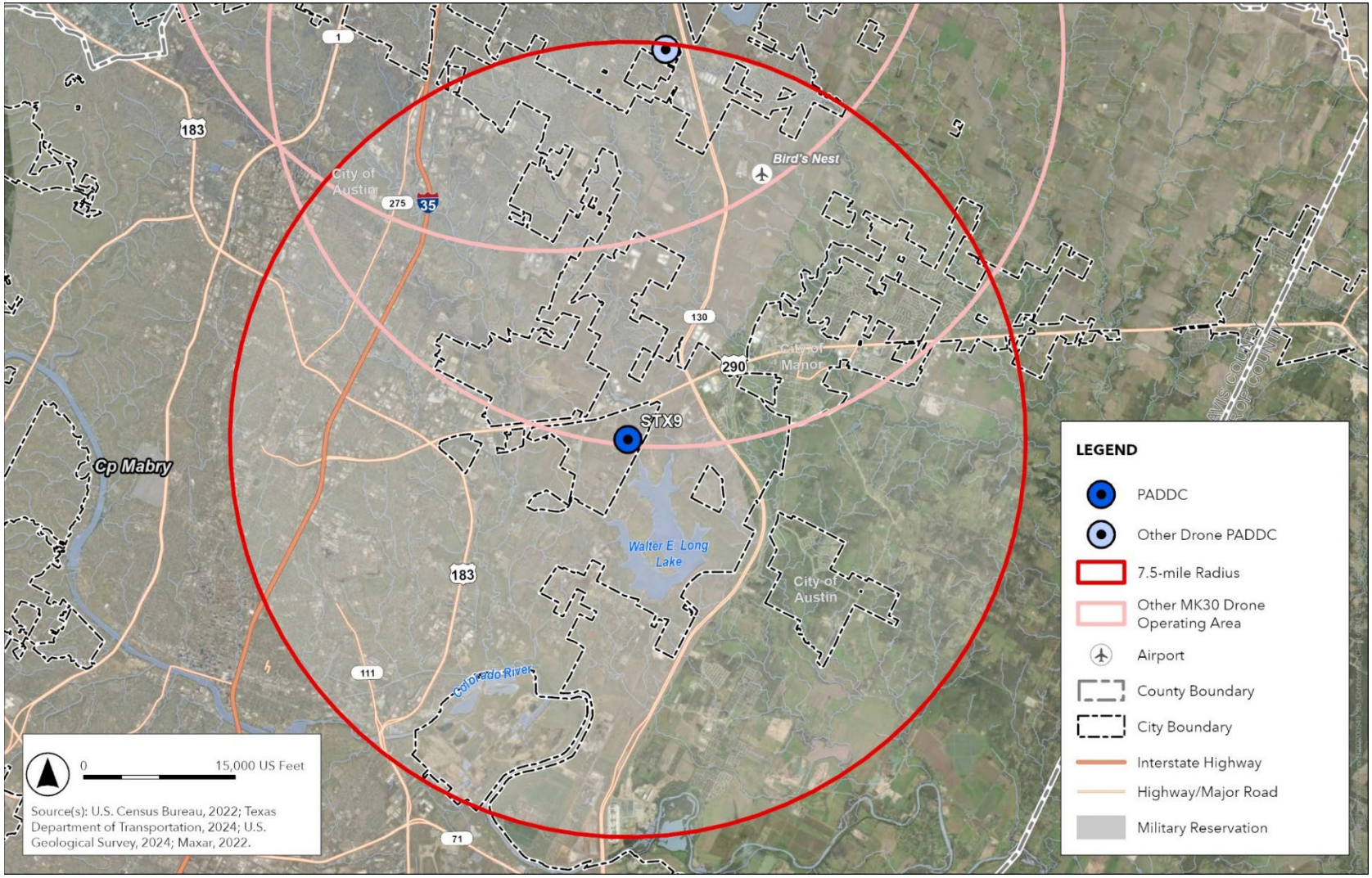
Figure 10

STX7 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

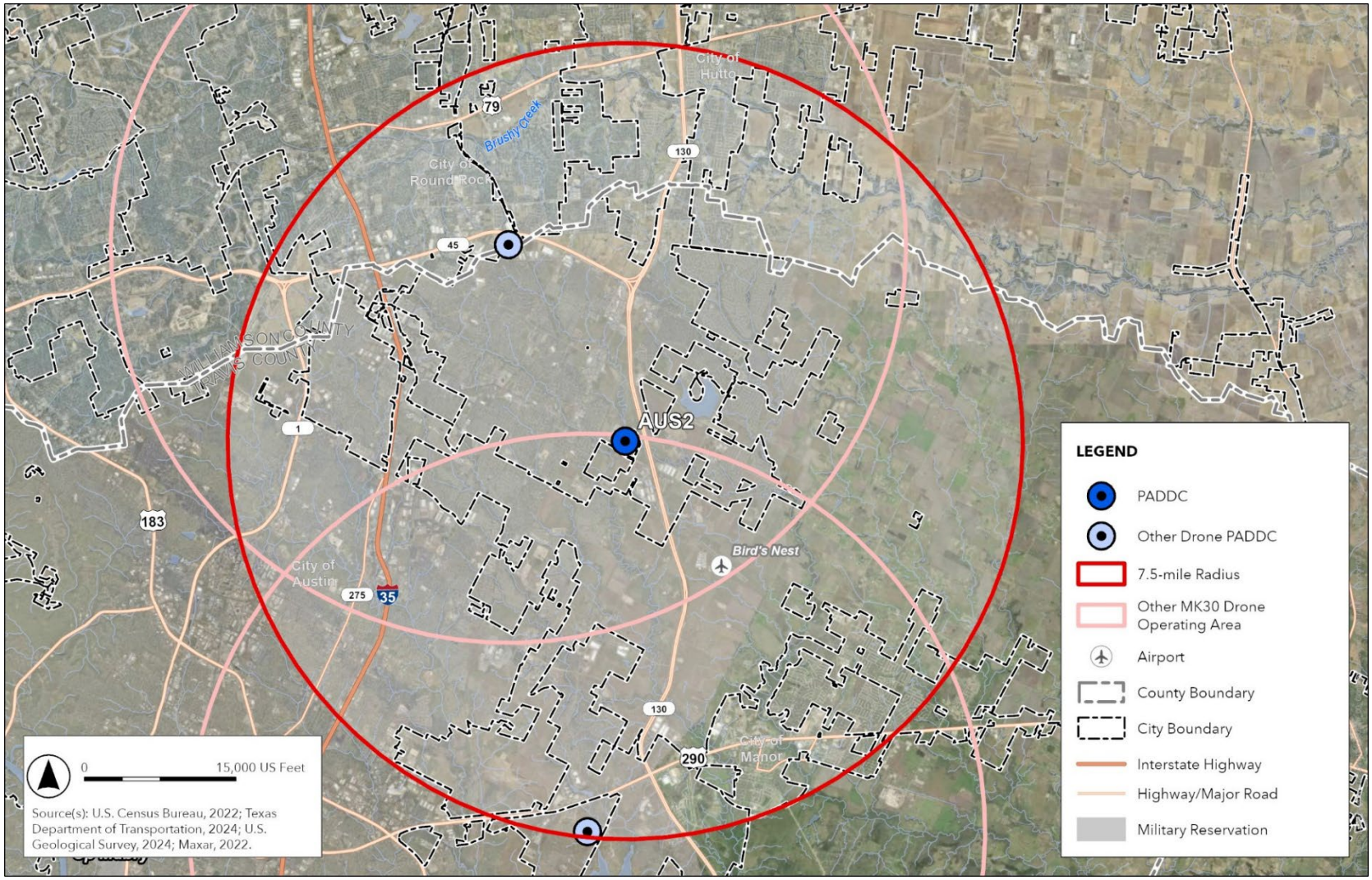
Figure 11
STX8 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 12

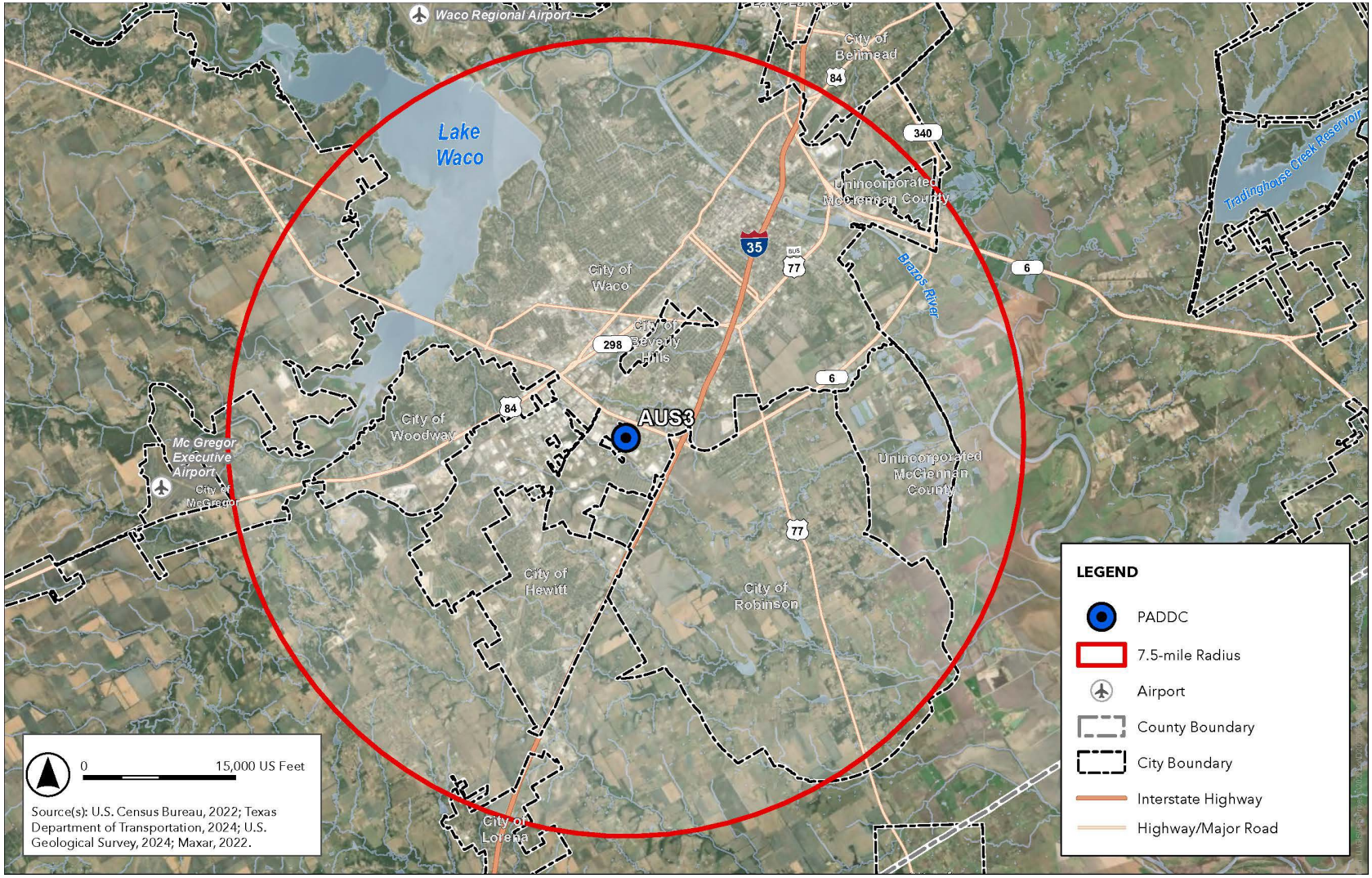
STX9 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 13

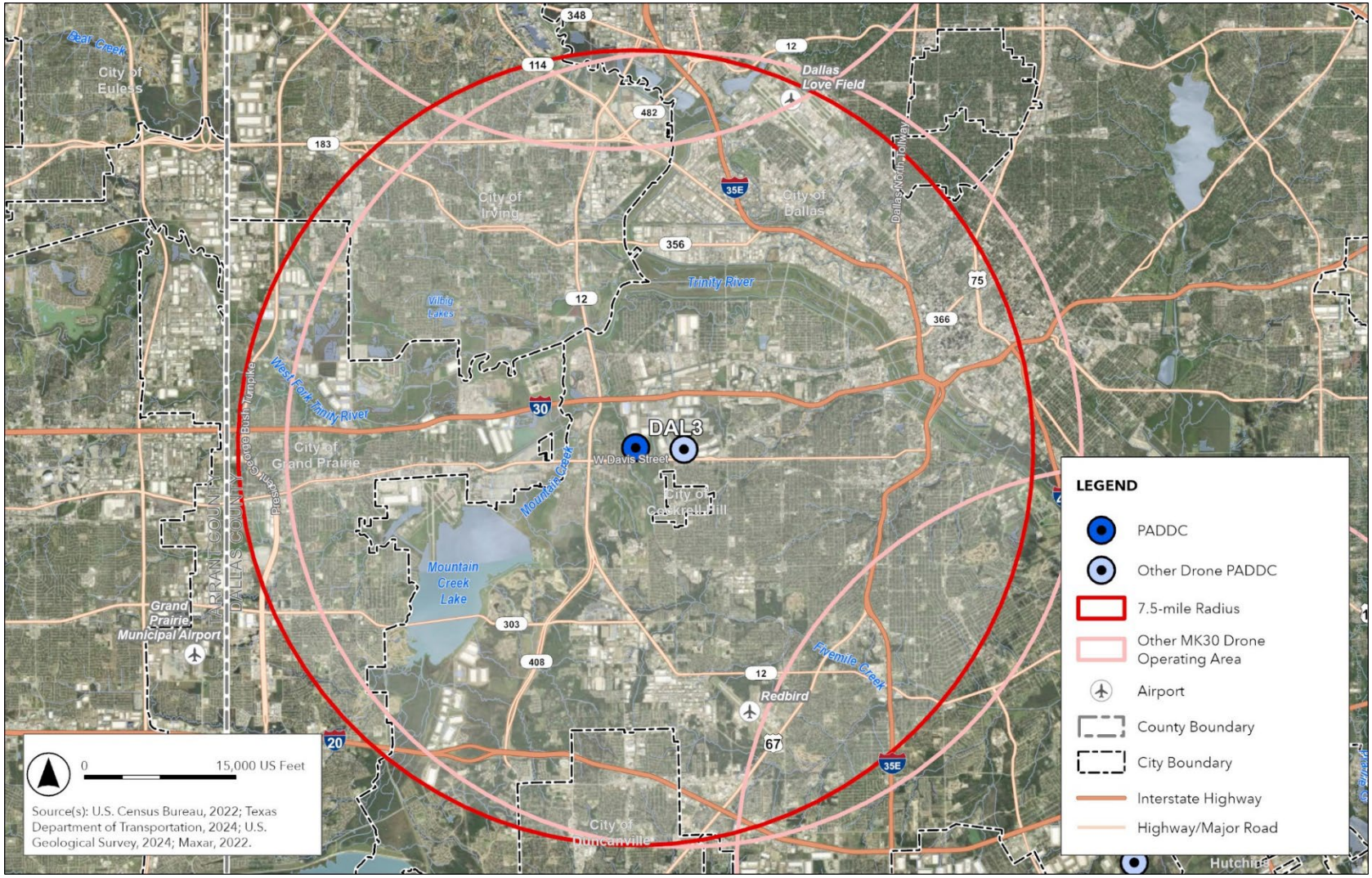
AUS2 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

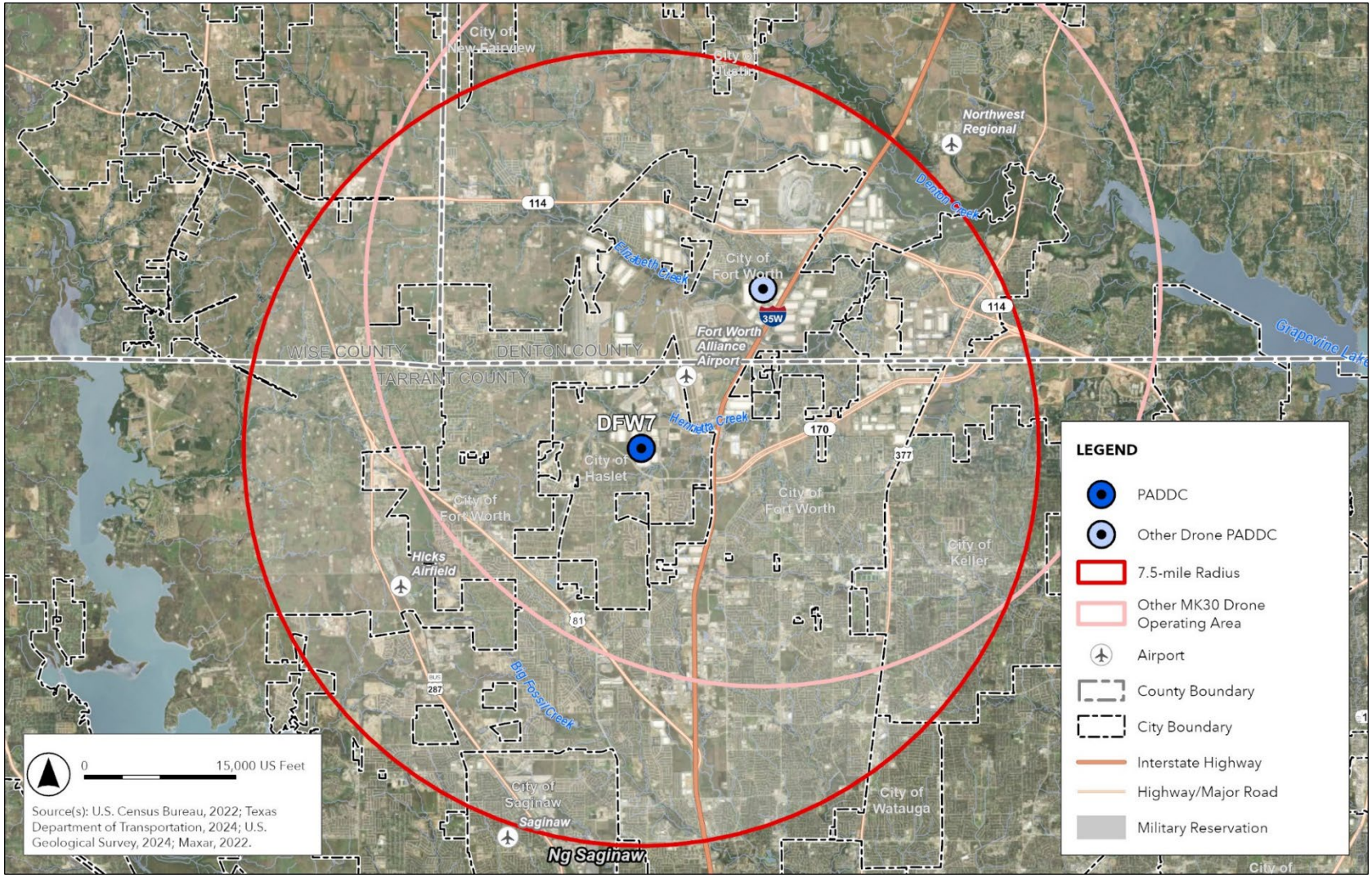
Figure 14

AUS3 Drone Operation Action Area



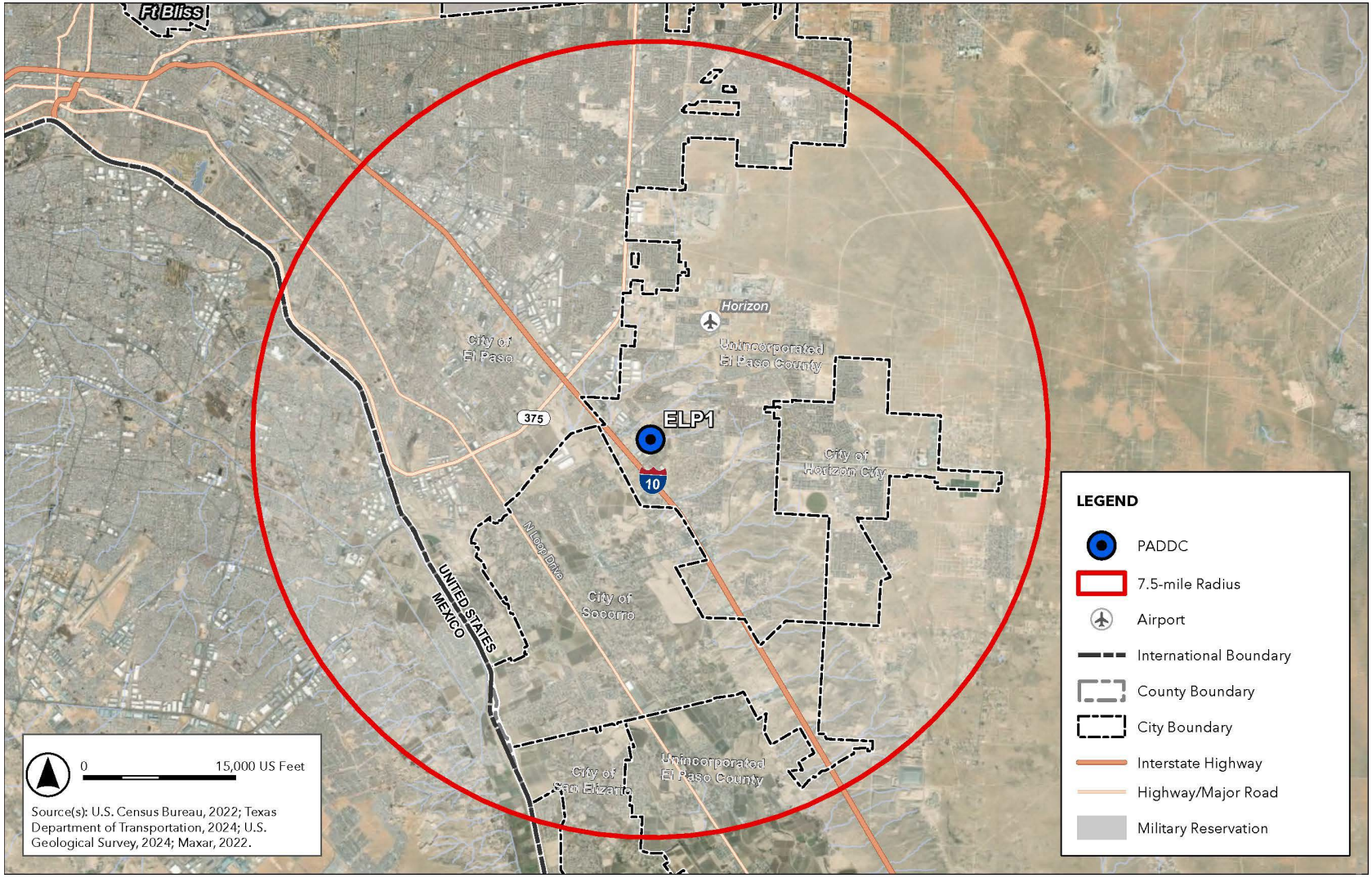
SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 15
DAL3 Drone Operation Action Area



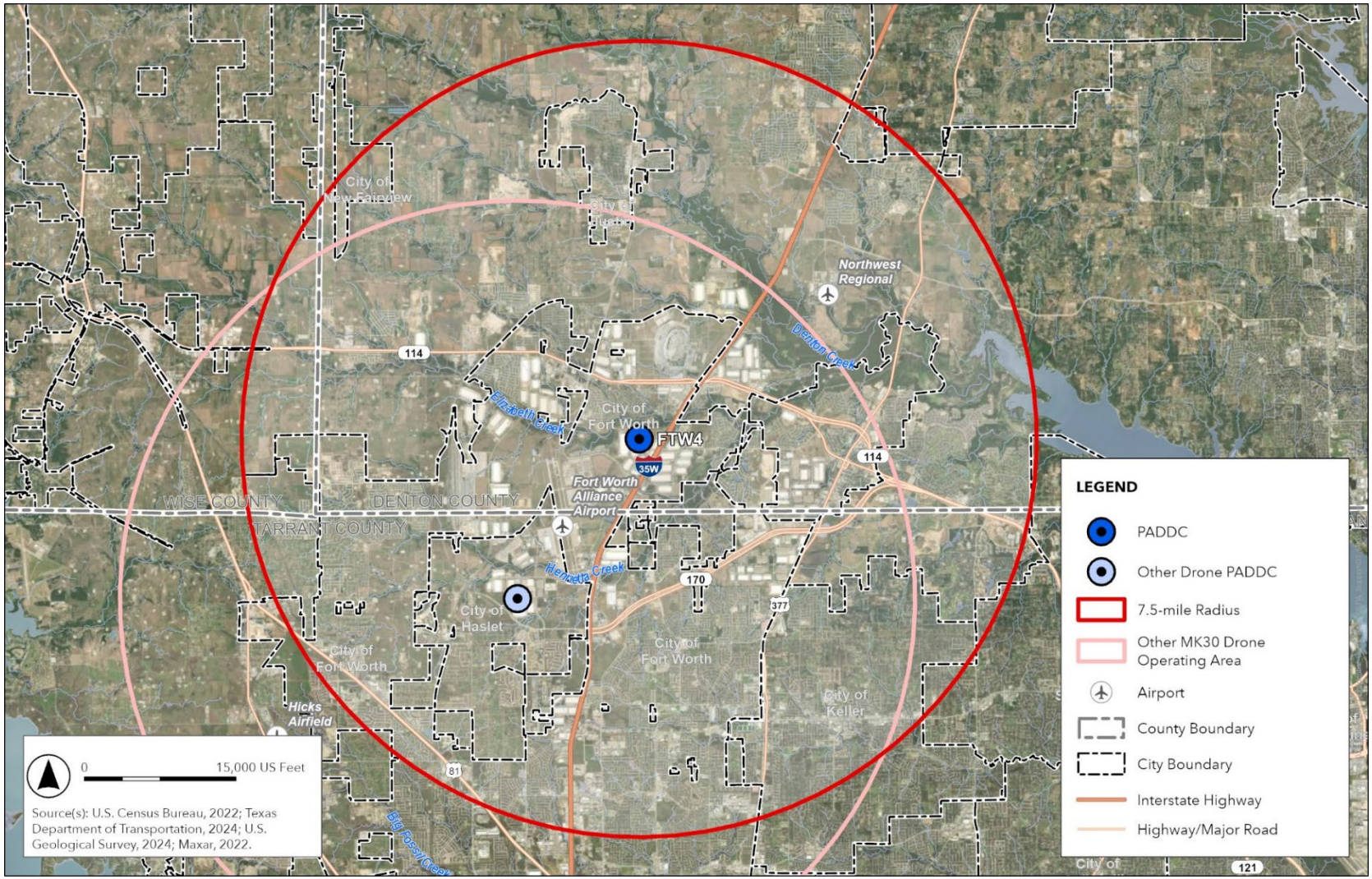
SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 16
DFW7 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

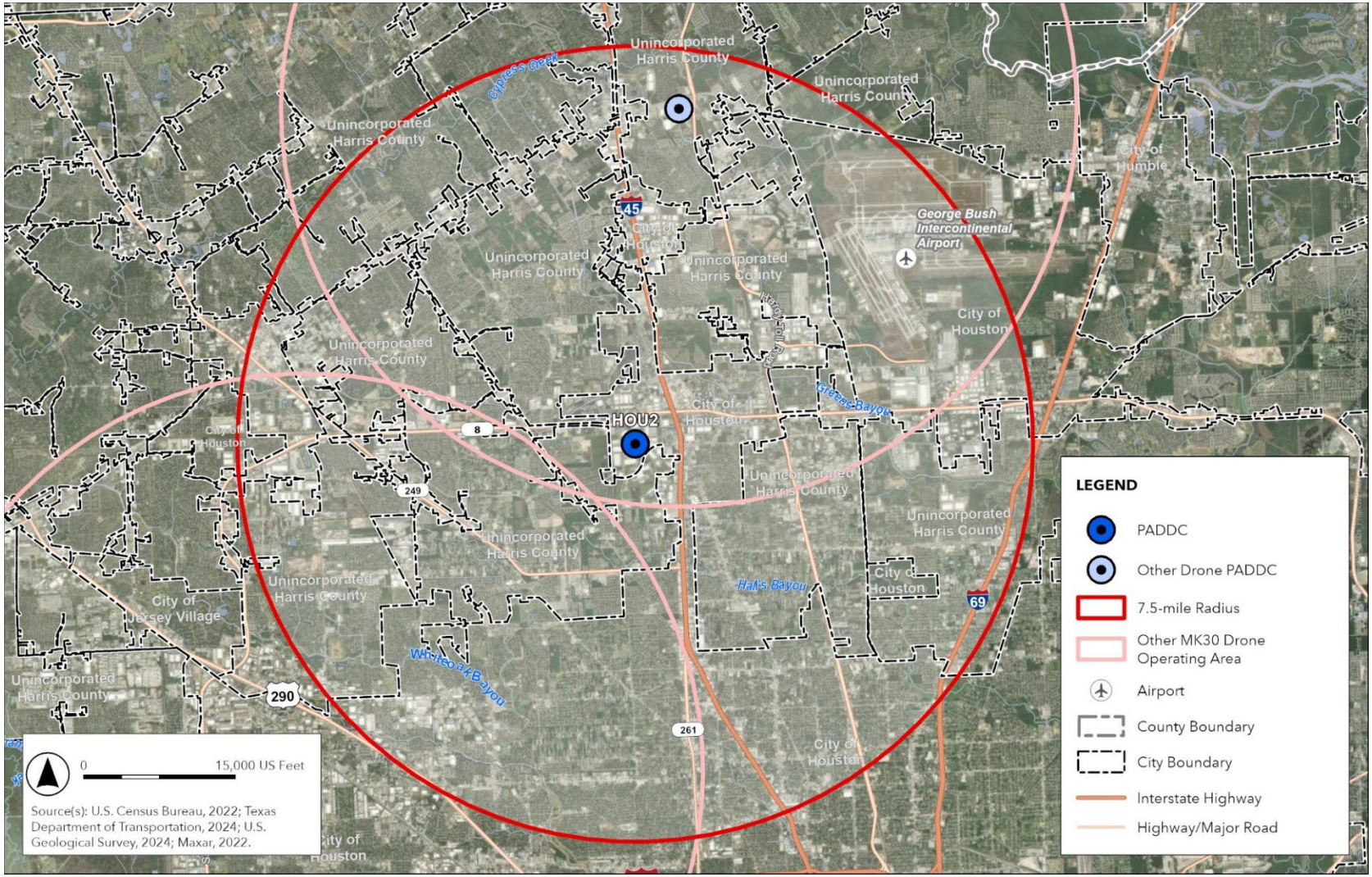
Figure 17
ELP1 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

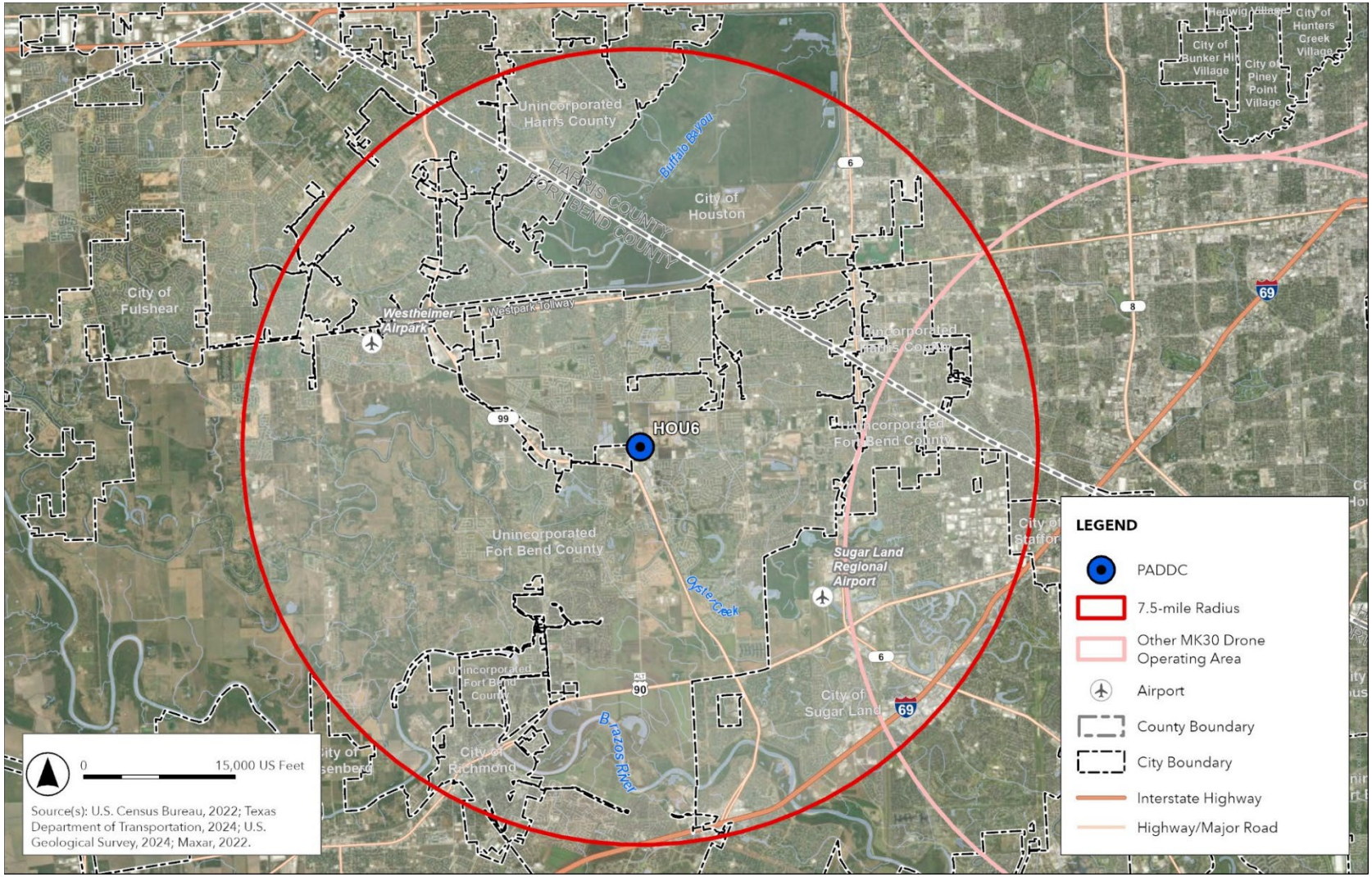
Figure 18

FTW4 Drone Operation Action Area



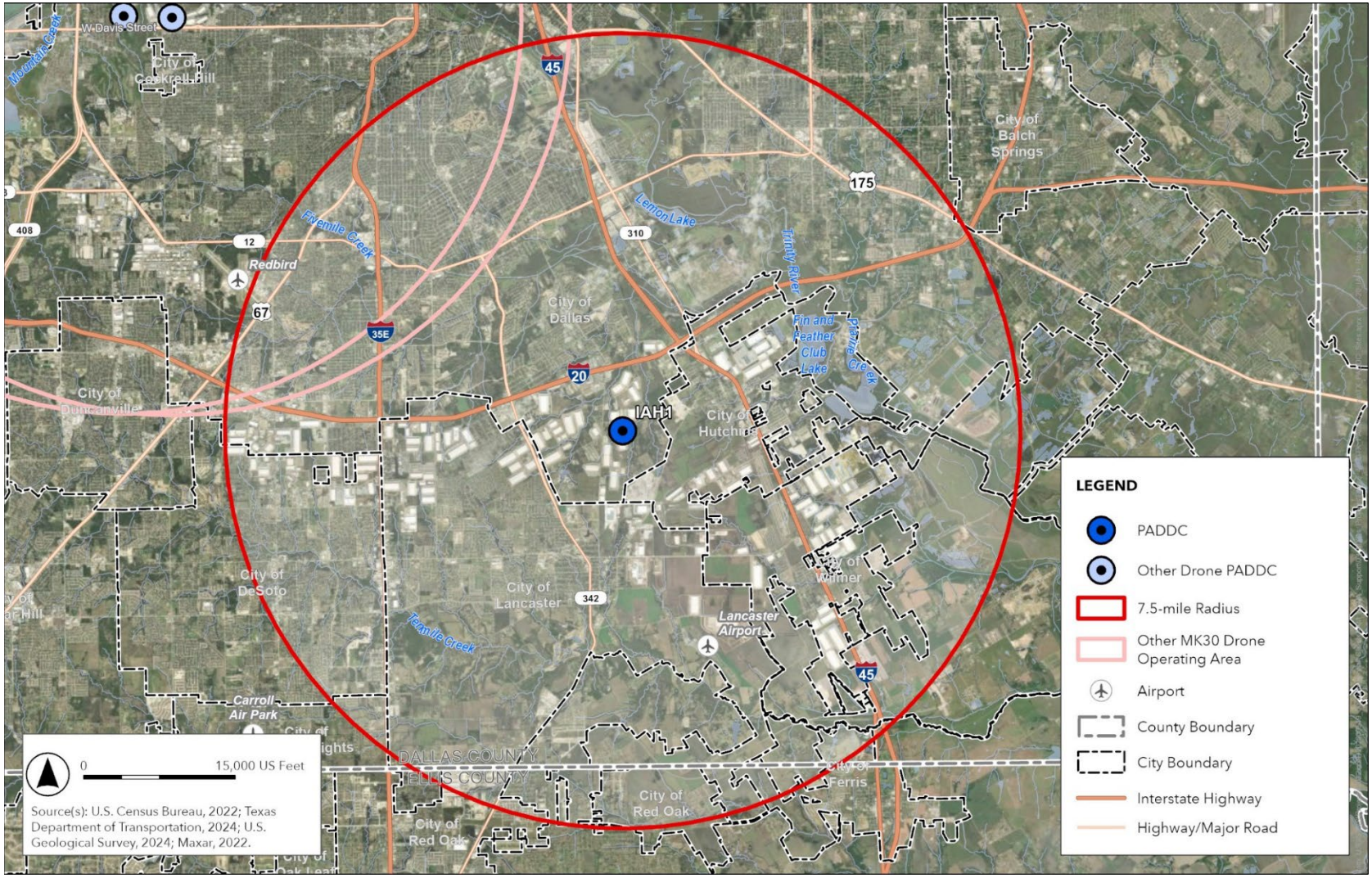
SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 19
HOU2 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

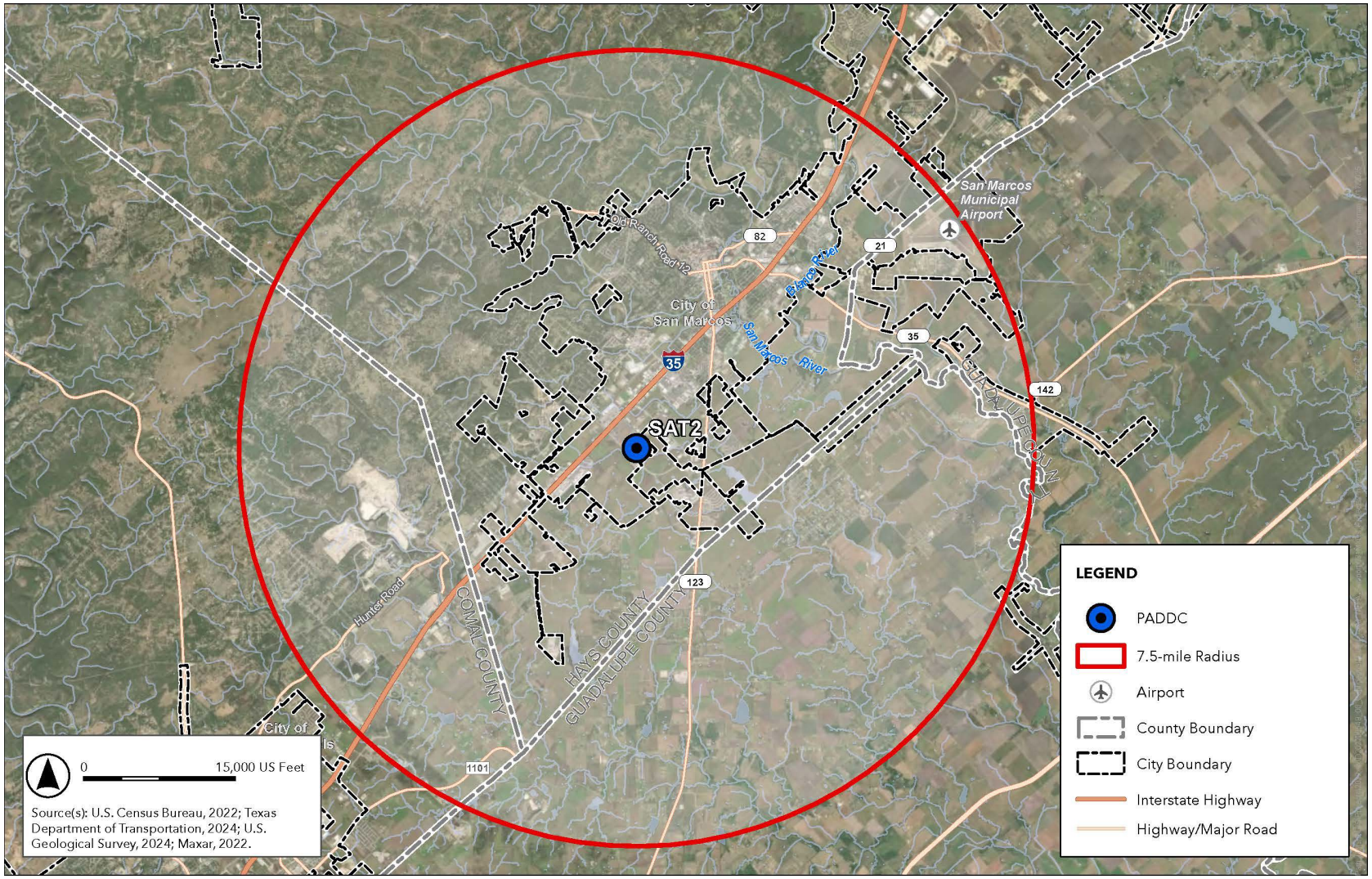
Figure 20
HOU6 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 21

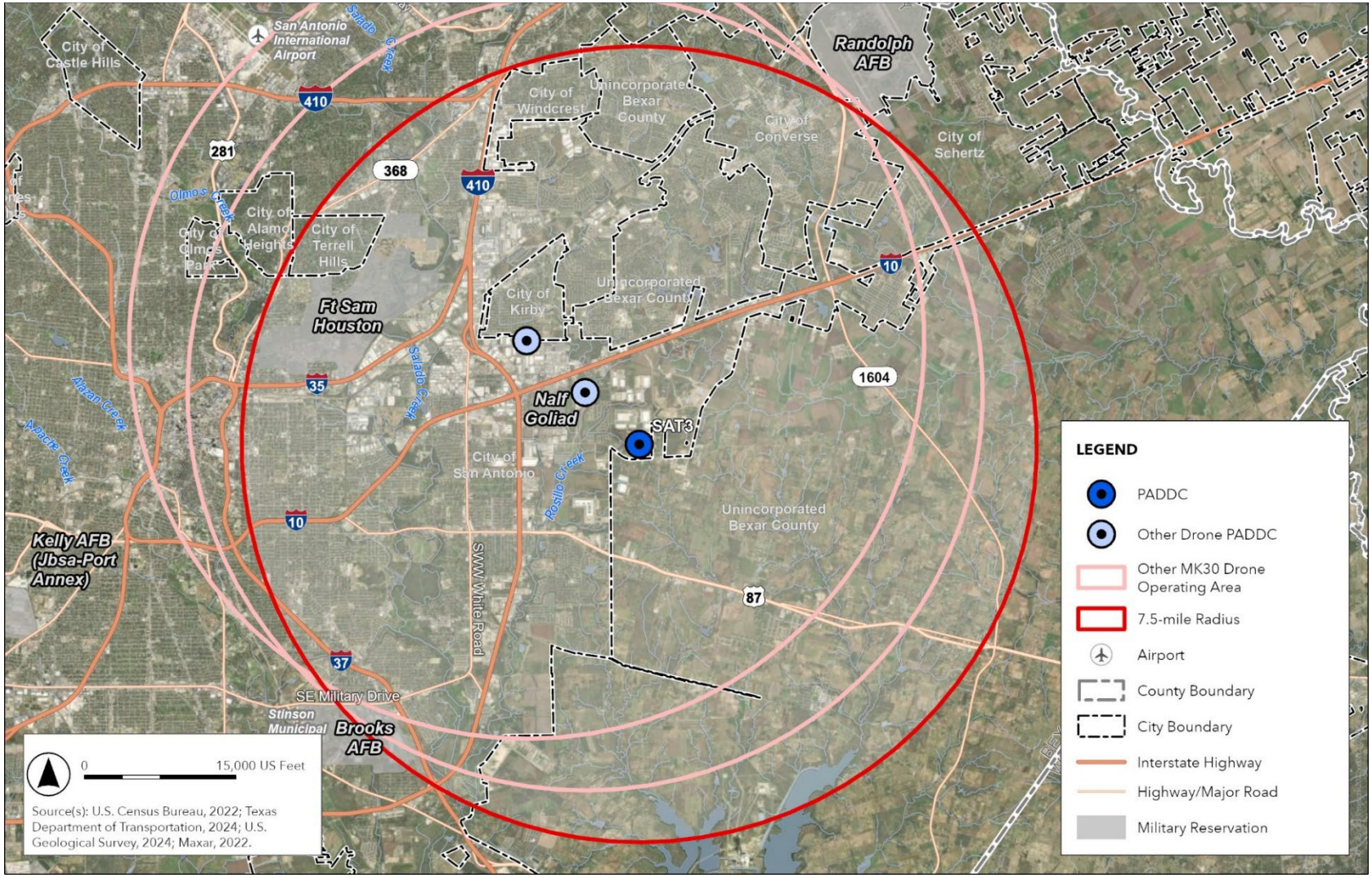
IAH1 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 22

SAT2 Drone Operation Action Area



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; USGS, 2024; Maxar, 2022.

Figure 23
SAT3 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
Austin Ecological Services Field Office
1505 Ferguson Lane
Austin, TX 78754-4501
Phone: (512) 937-7371

In Reply Refer To: 05/15/2025 16:23:19 UTC
Project Code: 2025-0097332
Project Name: AMZ Texas

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Note: IPaC has provided all available attachments because this project is in multiple field office jurisdictions.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Marine Mammals
- 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:

Austin Ecological Services Field Office
1505 Ferguson Lane
Austin, TX 78754-4501
(512) 937-7371

This project's location is within the jurisdiction of multiple offices. However, only one species list document will be provided for all offices. The species and critical habitats in this document reflect the aggregation of those that fall in each of the affiliated office's jurisdiction. Other offices affiliated with the project:

Arlington Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
(817) 277-1100

Texas Coastal & Central Plains Esfo
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
(281) 286-8282

PROJECT SUMMARY

Project Code: 2025-0097332
Project Name: AMZ Texas
Project Type: Airport - New Construction
Project Description: Prime Air is seeking authorization (FAA approval) to conduct commercial package deliveries using drones throughout the state of Texas.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.98950175,-97.31367088346025,14z

Counties: Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 50 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

MAMMALS

NAME	STATUS
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered
West Indian Manatee *Trichechus manatus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. ***This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.*** Species profile: https://ecos.fws.gov/ecp/species/4469	Threatened

BIRDS

NAME	STATUS
Attwater's Greater Prairie-chicken *Tympanuchus cupido attwateri* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7259	Endangered
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Golden-cheeked Warbler *Setophaga chrysoparia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/33	Endangered
Mexican Spotted Owl *Strix occidentalis lucida* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Northern Aplomado Falcon *Falco femoralis septentrionalis* Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1923	Endangered
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red-cockaded Woodpecker *Dryobates borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Threatened
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

NAME	STATUS
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened
Green Sea Turtle *Chelonia mydas* Population: North Atlantic DPS There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle *Eretmochelys imbricata* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Kemp's Ridley Sea Turtle *Lepidochelys kempii* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/5523	Endangered

AMPHIBIANS

NAME	STATUS
Austin Blind Salamander *Eurycea waterlooensis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5737	Endangered
Jollyville Plateau Salamander *Eurycea tonkawae* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3116	Threatened
San Marcos Salamander *Eurycea nana* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6374	Threatened
Texas Blind Salamander *Eurycea rathbuni*	Endangered

NAME	STATUS

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5130

FISHES

NAME	STATUS
Fountain Darter *Etheostoma fonticola*	Endangered

There is **final** critical habitat for this species. Your location overlaps the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5858

CLAMS

NAME	STATUS
Balcones Spike *Fusconaia iheringi*	Endangered

Population:
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/10909

False Spike *Fusconaia mitchelli*	Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/3963

Guadalupe Fatmucket *Lampsilis bergmanni*	Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/10783

Guadalupe Orb *Cyclonaias necki*	Endangered

Population:
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/10781

Texas Fatmucket *Lampsilis bracteata*	Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/9041

Texas Fawnsfoot *Truncilla macrodon*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/8965

Texas Heelsplitter *Potamilus amphichaenus*	Proposed Endangered

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/299

Texas Pimpleback *Cyclonaias petrina*	Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/8966

INSECTS

NAME	STATUS
[no Common Name] Beetle *Rhadine exilis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6942	Endangered
[no Common Name] Beetle *Rhadine infernalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3804	Endangered
Coffin Cave Mold Beetle *Batrisodes texanus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6234	Endangered
Comal Springs Dryopid Beetle *Stygoparnus comalensis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7175	Endangered
Comal Springs Riffle Beetle *Heterelmis comalensis* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3403	Endangered
Helotes Mold Beetle *Batrisodes venyivi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1149	Endangered
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Tooth Cave Ground Beetle *Rhadine persephone* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5625	Endangered

ARACHNIDS

NAME	STATUS
Bone Cave Harvestman *Texella reyesi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5306	Endangered
Cokendolpher Cave Harvestman *Texella cokendolpheri* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/676	Endangered
Government Canyon Bat Cave Meshweaver *Cicurina vespera* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7037	Endangered
Government Canyon Bat Cave Spider *Tayshaneta microps* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/553	Endangered

NAME	STATUS
Madla Cave Meshweaver *Cicurina madla* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2467	Endangered
Robber Baron Cave Meshweaver *Cicurina baronia* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2361	Endangered
Tooth Cave Spider *Tayshaneta myopica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2360	Endangered

CRUSTACEANS

NAME	STATUS
Peck's Cave Amphipod *Stygobromus (=Stygonectes) pecki* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8575	Endangered

FLOWERING PLANTS

NAME	STATUS
Bracted Twistflower *Streptanthus bracteatus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2856	Threatened
Sneed Pincushion Cactus *Coryphantha sneedii var. sneedii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4706	Endangered
Texas Prairie Dawn-flower *Hymenoxys texana* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6471	Endangered
Texas Wild-rice *Zizania texana* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/805	Endangered

CRITICAL HABITATS

There are 7 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Cokendolpher Cave Harvestman *Texella cokendolpheri* https://ecos.fws.gov/ecp/species/676#crithab	Final
Comal Springs Riffle Beetle *Heterelmis comalensis* https://ecos.fws.gov/ecp/species/3403#crithab	Final

NAME	STATUS
Fountain Darter *Etheostoma fonticola* https://ecos.fws.gov/ecp/species/5858#crithab	Final
Jollyville Plateau Salamander *Eurycea tonkawae* https://ecos.fws.gov/ecp/species/3116#crithab	Final
Robber Baron Cave Meshweaver *Cicurina baronia* https://ecos.fws.gov/ecp/species/2361#crithab	Final
San Marcos Salamander *Eurycea nana* https://ecos.fws.gov/ecp/species/6374#crithab	Final
Texas Wild-rice *Zizania texana* https://ecos.fws.gov/ecp/species/805#crithab	Final

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

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

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

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1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

BALD & GOLDEN EAGLES INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the

Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

MIGRATORY BIRD INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

MARINE MAMMALS

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries[3] [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the Marine Mammals page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

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1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. 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.

NAME

West Indian Manatee *Trichechus manatus*
Species profile: https://ecos.fws.gov/ecp/species/4469

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.

Due to your project's size, the list below may be incomplete, or the acreages reported may be inaccurate. For a full list, please contact the local U.S. Fish and Wildlife office or visit https://www.fws.gov/wetlands/data/mapper.HTML

FRESHWATER POND

- PAB4Fx
- PAB3H
- PAB4Kx
- PAB3Fx
- PAB4/EM1F
- PAB3/EM1Fh
- PAB/UBFx
- PAB4F
- PAB3Fh
- PABFx
- PAB4Hx
- PAB3Hx
- PAB4Hh
- PAB4/FO1F
- PAB3/EM1Fx
- PAB3F
- PABF
- PAB3/EM1F
- PAB4Fh
- PABHx
- PABFh
- PAB4H

FRESHWATER EMERGENT WETLAND

- PEM1/UBF

- PEM1/AB4Fx
- PEM1/FO1Cx
- PEM1/AB3Fx
- PEM1/SS1Cx
- PEM1/SS1Ch
- PEM1/SS1A
- PEM1/FO1C
- PEM1/ABFx
- PEM1/SS1Ah
- PEM1A
- PEM1/FO1Ch
- PEM1/FO1A
- PEM1/UBFx

LAKE

- L2AB3Hx
- L2USCx
- L1UBHx
- L1UBH
- L2USKx
- L2USCh
- L
- L1UBHh
- L1UBKx
- L2UBHx
- L2ABHx
- L2USAh
- L2USK

ESTUARINE AND MARINE WETLAND

- E2USPs
- E2EM1N
- E2USP
- E2EM1P
- E2USM
- E2EM1Ps
- E2USN
- E2EM1Px

ESTUARINE AND MARINE DEEPWATER

- E1UBLx
- E1UBL

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Theodore Reese
Address: 545 Brent Lane
City: Pensacola
State: FL
Zip: 32504
Email treese@esassoc.com
Phone: 8504284687

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Texas Coastal and Central Plains Ecological Services Office
Houston Sub-Office
17629 El Camino Real, Suite 211
Houston, Texas 77058
PHONE: 281/286-8282
FAX: 281/488-5882

In Reply Refer To:
2025-0097332

August 27, 2025

Chris Hurst
Environmental Protection Specialist
General Aviation and Commercial Branch (AFS-752)
Federal Aviation Administration
800 Independence Avenue, SW
Washington, D.C. 20591

RE: Endangered Species Act Section 7 Consultation for Drone Commercial Package Delivery Operations in Houston, Texas.

Dear Mr. Hurst,

This responds to the Federal Aviation Administration's (FAA) June 11, 2025, letter requesting consultation pursuant to Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544) (Act) for the authorization of Amazon Prime Air (Prime Air) to conduct commercial unmanned aircraft (UA) drone package delivery operations from 22 Prime Air Drone Delivery Centers (PADDC) located throughout Texas. Our comments pertain to the portion of the project located in the Houston sub-office's area of responsibility, which includes areas: HOU2, HOU6, SAHx, SAH1, STX4, STX5. STX4, located in Harris, Mongomery, and Galveston Counties in Texas.

The FAA made a determination of may effect, but is not likely to adversely affect for the following species within the Houston sub-office area of responsibility: Eastern black rail (*Laterallus jamaicensis spp. Jamaicensis*), piping plover (*Charadrius melodus*), rufa red knot (*Caliris canutus rufa*), whooping crane (*Grus americana*), red cockaded woodpecker (*Dryobates borealis*), and the proposed the tricolored bat (*Perimyotis subflavus*).

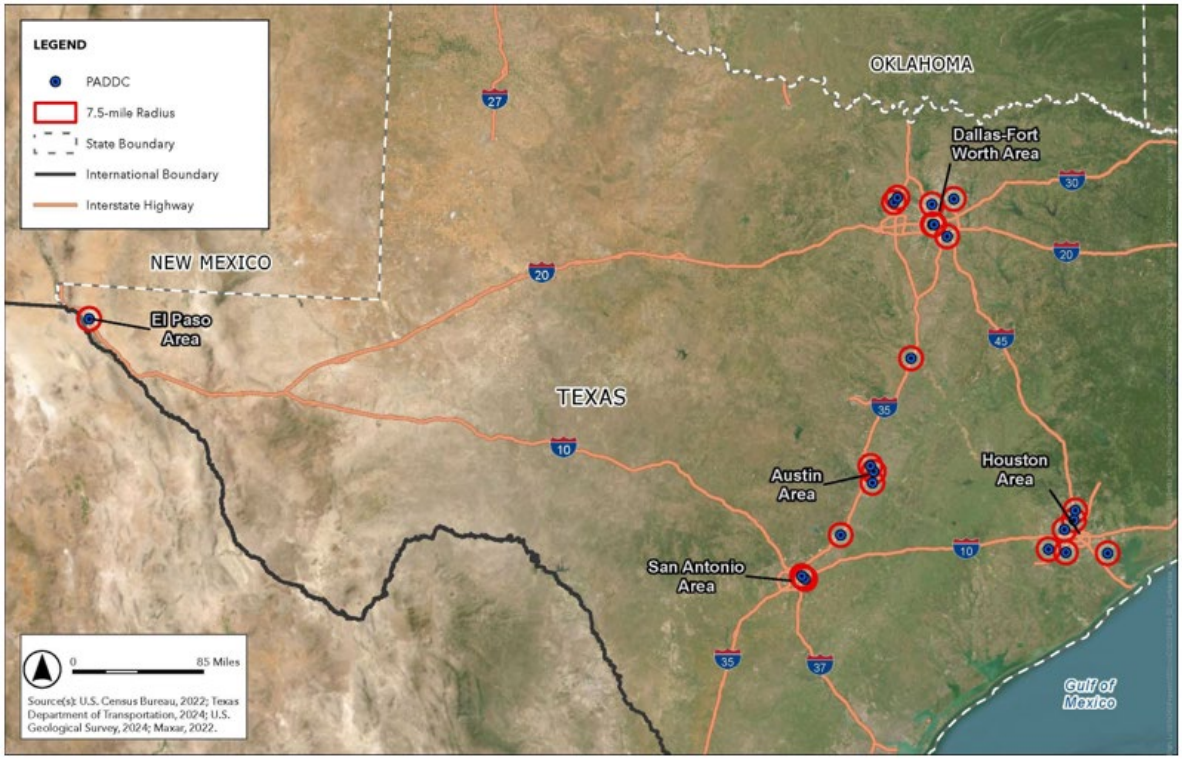
Prime Air is seeking authorization to conduct commercial package deliveries using UA drones throughout the State of Texas. Prime Air intends to introduce its drone delivery capabilities in 2025 and requests the FAA to authorize the operation of its MK30 drone, so it can provide drone package delivery services across its operating area. The 22 proposed MK30 operating areas and

PADDCs are located throughout Texas (Figure1). Seven of these sites are located in the Houston Area (Figure 2).

Prime Air anticipates flying up to approximately 1,000 MK30 UA drone flights per operating day from each of the 22 PADDCs, 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. with a typical airspeed of 58 knots (67 miles per hour). Each drone weighs approximately 78 pounds and has a maximum takeoff weight of approximately 83 pounds. Each drone service area has a 7.5 mile radius from the PADDC. The drone would be operated at an altitude of 180 feet above ground level (AGL) and up to an altitude of 300/400 feet AGL, while en route to and from delivery locations. UA flight operations defined flight paths between PADDCs and delivery sites as; takeoff and climb, en route flight outbound, delivery, en route flight inbound, descent and landing.

Additionally, the FAA conducted a noise analysis using sound level measurement data for the UA. 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 is at an altitude of 200 feet AGL and flying at approximately 58 knots (67 miles per hour)

The MK30 is equipped with collision avoidance technology to help avoid conflicts with other aircraft and UA drones; however, no effective technology exists that can be used to help avoid collisions with wildlife.



SOURCE: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; US Geological Survey, 2024; Maxar, 2022.
Figure 1. Texas PADDC

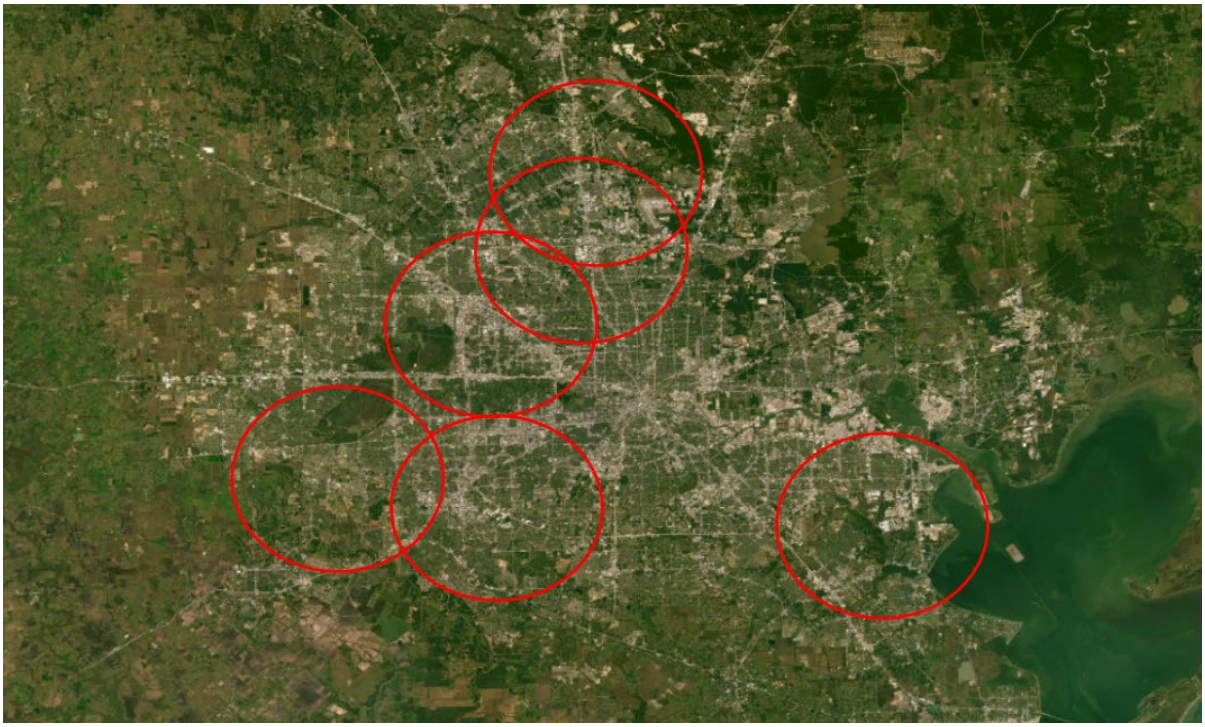


Figure 2. Houston Area PADDC

The tri-colored bat is proposed to be listed. Proposed species are not currently protected under the Act; however, conferencing is necessary if it is determined a federal action is likely to jeopardize the continued existence of a proposed species. Your species evaluation does not indicate the need for conference on the proposed species. We should note that there is a lack of information on the potential effects of drone flights on the tricolored bat. Should the tricolored bat be listed, you should re-evaluate the project to determine the extent of effects on the species. Tri-colored bats are documented to occur within the Houston area (https://www.inaturalist.org/). While the proposed action is not expected to directly affect bat habitat, U.S. Fish and wildlife (the Service) strongly encourages the reduction of drone operations outside of their most active periods, specifically avoiding night, dusk and after dawn.

As outlined in an e-mail dated July 15, 2025 and further discussed in a meeting held on August 8, 2025, several key concerns were discussed. The Service recommended complete avoidance or a substantial reduction of flights in areas where large congregations of birds occur, including federally listed piping plovers and red knots. The recommendations are listed below:

- Avoidance of Galveston Bay and surrounding shorelines.
- Avoidance of colonial waterbird nesting sites during peak nesting season March to July. In order to reduce disturbance, an avoidance buffer of 700 to 1000 feet, is recommended. Documented nest occurrences can be found at: https://www.arcgis.com/apps/dashboards/79a5d105746b46a0bcfb47027902a09d and https://www.texaswaterbirds.org/
- Avoidance of bald eagle nesting sites during peak nesting from October thru July. In order to reduce disturbance, an avoidance buffer of 700 to 1000 feet, is recommended. Additional information on location and avoidance guidelines for eagle nesting can be found at: https://www.fws.gov/media/national-bald-eagle-management-guidelines and https://www.inaturalist.org/projects/texas-eagle-nests.
- Avoidance or substantial reduction of flights in extensive contiguous unfragmented areas of undeveloped habitats. Including but not limited to nature preserves, nature parks, etc. These areas can clearly be seen in aerial photographs provided in the species evaluation.

Both the FAA and Prime Air stated they have the technical capability to implement drone geofencing and reroute flight paths to avoid designated areas of concern and indicated these recommendations can be integrated into the proposed projects. We will continue to work with the FAA, as needed, to understand and manage potential project impacts along sensitive areas in Texas and along the coast.

FAA in coordination with Prime Air will implement the following biological monitoring program in effort to better understand the interactions between drones and wildlife:

- 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, and
- Report findings to the Service on an annual basis.

Based on the information provided within the species evaluation dated June 11, 2025, discussions via TEAMs held on July 14, 2025, agency correspondence including e-mails, and the implementation of the above 8 bulleted avoidance and minimization measures, we concur with the determination that the project, as proposed, may affect, but is not likely to adversely affect the Eastern black rail, piping plover, rufa red knot, whooping crane, and the red cockaded woodpecker. A complete administrative record of this consultation is on file at the Texas Coastal and Central Plains Ecological Services Field Office (TCCPESFO-Houston).

No further Section 7 consultation will be required unless: 1) the identified action is subsequently modified in a manner that causes an effect on a listed species or designated critical habitat; 2) new information reveals the identified action may affect federally listed species or designated critical habitat in a manner or to an extent not previously considered; or 3) a new species is listed or a critical habitat is designated under the Act that may be affected by the identified action. If new effects are identified in the future, Section 7 consultation may need to be reinitiated.

Please note that this guidance does not authorize bird mortality for species that are protected under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. sec.703-712). If you believe migratory birds will be affected by this activity, we recommend you contact our Migratory Bird Permit Office at P.O. Box 709, Albuquerque, NM 87103, 505-248-7882.

Thank you for the opportunity to review and provide information on the proposed project. Please reference the Service's consultation code 2025-0097332 in future correspondence. If you have any questions, please contact Moni Belton at 281-286-8282 or moni_belton@fws.gov.

Sincerely,

DAVID HOTH

Digitally signed by DAVID HOTH
Date: 2025.08.28 09:26:45 -05'00'

For
Catherine Yeargan
Project Leader

CC: Neal Wolfe, Environmental Science Associates
Jim Fitzpatirck, Amazon Prime Air