Federal Aviation Administration

Finding of No Significant Impact/Record of Decision for Environmental Assessment for Drone Package Delivery in Texas

January 2026

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration
Washington, D.C.

Notice of Availability of the Final Environmental Assessment and Finding of No Significant Impact/Record of Decision for Amazon Prime Air Package Delivery Operations in Texas

The Federal Aviation Administration (FAA) hereby gives Notice of Availability (NOA) for this Final Environmental Assessment (EA) and Finding of No Significant Impact/Record of Decision (FONSI/ROD) following the FAA's evaluation of the potential environmental effects of the FAA decision to authorize Amazon Prime Air to conduct commercial drone delivery service in Texas.

Amazon Prime Air is seeking to amend its air carrier Operation Specifications (OpSpec) and other FAA approvals necessary to introduce commercial drone delivery operations in Texas. The FAA's approval of the amended OpSpec is considered a major federal action under the National Environmental Policy Act (NEPA) and requires a NEPA review.

The Final EA has been prepared in accordance with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*. The Final EA reflects the consideration of comments received during the public comment period for this EA from August 15, 2025, through October 1, 2025.

The Final EA and FONSI/ROD are available to view/download electronically at:
https://www.faa.gov/uas/advanced_operations/nepa_and_drones

CONTACT INFORMATION: For any questions or to request a copy of the EA, please contact: 9-FAA-Drone-Environmental@faa.gov.

This EA becomes a federal document when evaluated, signed, and dated by the Responsible FAA Official.

Responsible FAA Official:

_____ Date: _____

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CHAPTER 1
Purpose and Need

1.1 Introduction

Amazon.com Services LLC, doing business as Amazon Prime Air (Prime Air), intends to expand its delivery capabilities to multiple locations across Texas utilizing its MK30 drone. Prime Air is seeking to amend its current Operations Specifications (OpSpecs) and other Federal Aviation Administration (FAA) authorizations needed to integrate the MK30 and commence commercial drone package delivery operations from 22 Prime Air Drone Delivery Centers (PADDC) located throughout the state of Texas.

This Environmental Assessment (EA) is being prepared by the FAA to evaluate the potential environmental impacts that may result from the FAA's approval of the Proposed Action, and the amendment of Prime Air's OpSpec to grant airspace access to the MK30 in the proposed operating areas. For purposes of this EA, the MK30 drone operating areas are the Study Areas and are further defined in Chapter 2.

The issuance or amendment of OpSpecs is considered a major federal action subject to environmental review requirements. The FAA has prepared this EA pursuant to the National Environmental Policy Act of 1969 (NEPA). Under NEPA, federal agencies are required to consider the environmental effects of proposed federal actions and to disclose to decision-makers and the public a clear and accurate description of the potential environmental impacts of proposed major federal actions. Additionally, under NEPA, federal agencies are required to consider the environmental effects of a proposed action, the reasonable alternatives to the proposed action, and a no action alternative (assessing the potential environmental effects of not implementing the proposed action). The FAA has established a process to ensure compliance with the provisions of NEPA through FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, and the FAA Order 1050.1 Desk Reference (version 3).

1.2 Current Operations

The 78-pound (lb.) MK30 drone carries packages weighing up to 5 lbs. and has a maximum takeoff weight of approximately 83.2 lbs. Prime Air proposes to operate up to 1,000 MK30 delivery flights per operating day over the course of 365 operating days per year, for a total of roughly 365,000 annual delivery operations, at each PADDC location. Commercial delivery operations from each PADDC would occur between 7 A.M. and 10 P.M., up to seven days per week. The MK30's proposed operating range is 7.5 miles (mi) from the PADDC, with a potential operating area of 174 square (sq) mi.

The general locations of the 22 proposed PADDCs are depicted in **Figure 1-1**. Each proposed PADDC facility would be located on the same property as and adjacent to an existing Amazon warehouse building with office space, ground control station, aircraft maintenance area, battery storage area, paved departure and arrival pads,

and perimeter fencing. Precise locations of the 22 proposed PADDCs are provided in **Appendix A-1**. All drone operations would originate from and terminate at one of the following PADDC locations:

- **SAH1** – Located at 1202 E FM 1960 Road, Houston, Texas 77073, the proposed SAH1 PADDC is a planned fulfillment center located in unincorporated Harris County, as shown in **Figure A-1**. SAH1 is regulated by the City of Houston's Department of Planning and Development. The City of Houston does not have a traditional zoning system, but development is governed by ordinance codes that address how property can be subdivided. The site is located within an Extra Territorial Jurisdiction (ETJ). The City reviews plats in the ETJ which is an area extending approximately five miles beyond Houston's corporate limits into the unincorporated areas of Harris, Fort Bend, Liberty, Montgomery, and Waller counties. These areas are subject to platting requirements by state law, but are not subject to the City's permitting and building inspection regulations. The site is also located within Zone 1 Land Use Boundary, which includes George H. Bush Intercontinental Airport (IAH). SAH1 is located on the south side of Cypress Creek Parkway surrounded by smaller industrial and commercial users. There is a religious building located immediately west of the site and a residential neighborhood north of the site across Cypress Creek Parkway creating potential risk.
- **SAT1x** – Located at 810 Rosillo Creek Boulevard, San Antonio, Texas, 78219. The proposed SAT1x PADDC is a planned fulfillment center located within the City of San Antonio, as shown in **Figure A-2**. SAT1x is zoned industrial (l-1), which is a general industrial district. The site is directly northeast to the Martindale Army Airfield and includes several overlays related to the proximity to an active heliport and airport location maintained by the U.S. Army.
- **SAHx** – Located at the northwest corner of Beltway 8/Sam Houston Tollway and Highway 90, Missouri City, Texas, 77489. A physical address does not exist for the site, but it can be referenced by latitude 29.632374704146194 and longitude -95.52780057909078. The proposed SAHx PADDC is a planned fulfillment center, as shown in **Figure A-3**. SAHx is zoned industrial(I) which allows for any industrial and/or commercial use which satisfies the development site plan requirements and performance standards. The site is surrounded primarily by industrial users to the west and south, with the nearest residential neighborhood located approximately 0.28 miles to the east-northeast.
- **STX2** – Located at 1625 Hutton Drive, Suite 120, Carrollton, Texas 75006, the proposed STX2 PADDC is a fulfillment center, as shown in **Figure A-4**. STX2 is zoned LI within the City of Carrollton. The LI district has been established to provide space for higher intensity industrial uses within the city boundaries. STX2 sits within a commercial and industrial area of the community just west of Interstate 35, which runs north and south. The nearest residential community is 0.65 miles east of the site on the eastern side of Interstate 35.
- **STX3** – Located at 4445 Rock Quarry Road, Dallas, Texas 75221, the proposed STX3 PADDC is a fulfillment center, as shown in **Figure A-5**. STX3 is zoned within a Planned Development within the City of Dallas. The site, within Planned Development 525, allows for industrial for light manufacturing use and accessory inside retail sales. STX3 is surrounded by similar commercial and industrial users, but is situated across the street from a multi-family residential development and school approximately 0.25 miles away.

- **STX4** – Located at 10611 Red Bluff Road, Pasadena, Texas 77507, the proposed STX4 PADDC is a fulfillment center, as shown in **Figure A-6**. The City of Pasadena is a non-zoned municipality. Therefore, land use regulations within the City of Pasadena corporate limits are accomplished through City ordinances and deed restrictions, if applicable to the property. Industrial districts located in the City of Pasadena's ETJ are not subject to City ordinances and permitting requirements. The property sits within the City of Pasadena, but is adjacent to the Harris County Jurisdiction Industrial District. STX4 is surrounded by similar commercial and industrial uses. The site is north of the Armand Bayou Nature Center and the closest residential area is located 1.38 miles to the west of the site.
- **STX5** – Located at 5215 Campbell Road, Houston, Texas 77041, the proposed STX5 PADDC is a fulfillment center, as shown in **Figure A-7**. The site is regulated by the City of Houston's Department of Planning and Development. The site is located within an ETJ. The site is also located within Zone 1 Land Use Boundary, which includes IAH. The site is surrounded by similar commercial and industrial uses, but sits 0.15 miles from a residential area to the northwest.
- **STX6** – Located at 18625 Schultz Lane, Pflugerville, Texas 78660, the proposed STX6 PADDC is a fulfillment center, as shown in **Figure A-8**. STX6 is zoned LI, which is intended to include land which is used, or intended to be used, for light industrial purposes including, but not limited to research facilities, and specialized processing and assembling plants. STX6 sits in the northwest corner of the light industrial park, but is located across Schultz Lane and New Meister Lane from single-family and multi-family residences (approximately 0.06 miles).
- **STX7** – Located at 2218 Corner Ridge, San Antonio, Texas 78219, the proposed STX7 PADDC is a fulfillment center, as shown in **Figure A-9**. STX7 is zoned Heavy Industrial (I-2), which allows uses that are highly hazardous, environmentally severe in character and/or generate very high volumes of truck traffic. The site sits on the northern edge of a Light Industrial and Heavy Industrial development park. The nearest residential neighborhood is directly north of the site by 0.04 miles.
- **STX8** – Located at 3051 Research Drive, Richardson, Texas 75082, the proposed STX8 PADDC is a former Amazon delivery station that was repurposed as a fulfillment center, as shown in **Figure A-10**. STX8 is zoned Planned Development (PD) within the City of Richardson. The site sits within Planned Development 4362. The site is surrounded by similar commercial and industrial uses. The nearest residential neighborhood is 0.29 miles west on the other side of President George Bush Turnpike Toll Road.
- **STX9** – Located at 9900 Decker Lane, Austin, Texas 78724, the proposed STX9 PADDC is a fulfillment center, as shown in **Figure A-11**. STX9 is located within the Austin ETJ, which is the unincorporated land within five miles of Austin's full purpose city limit not within the city limits or ETJ of another city. The property resides within unincorporated Travis County and does not have designated zoning based on its location within the ETJ. STX9 is located south of Highway 290 within a small commercial park surrounded by undeveloped land on all four sides. The site sits 0.65 miles from the nearest residential neighborhood to the southwest.
- **AUS2 –** Located at 2000 East Pecan Street, Pflugerville, Texas 78660, the proposed AUS2 PADDC is an Amazon Robotics Sortable Fulfillment Center, as shown in **Figure A-12**. AUS2 is zoned as a Planned Unit Development (PUD) and is identified as PUD number 1426-20-01-28. AUS2 is located west of Highway 130 and is surrounded by undeveloped land on all four sides. The nearest residential unit is adjacent to the property and 0.3 miles to the southwest.

- **AUS3 –** Located at 2000 Exchange Parkway, Waco, Texas 76712, the proposed AUS3 PADDC is an Amazon Robotics Sortable Fulfillment Center, as shown in **Figure A-13**. AUS3 is zoned Light Industrial (M-2), which is intended to provide for a wide variety of nuisance-free industrial uses and compatible related uses. The area, height, yard, and other site requirements are designed to maintain long-term quality and economic vitality of development, and to encourage a compatible relationship with adjacent uses. The site is surrounded by similar commercial and industrial uses. The nearest residential neighborhood is located 0.57 miles south of the site.
- **DAL3 –** Located at 1301 Chalk Hill Road, Dallas, Texas 75211, the proposed DAL3 PADDC is an Amazon Robotics Sortable Fulfillment Center, as shown in **Figure A-14**. DAL3 is zoned Industrial Manufacturing (IM), which includes uses such as industrial, wholesale distribution and storage, and supporting office and retail. The site sits within a commercial and industrial corridor with a wooded area that buffers the site from a residential neighborhood to the southwest. There are two nearby residential neighborhoods, the closest being 0.2 miles west of the site.
- **DFW7 –** Located at 700 Westport Parkway, Fort Worth, Texas 76177, the proposed DFW7 PADDC is an Amazon Robotics Sortable Fulfillment Center, as shown in **Figure A-15**. Although the site addresses as Fort Worth, it is technically located within the City of Haslet. DFW7 is zoned Industrial (I) and is surrounded by similar commercial and industrial users on all four sides. The nearest residential neighborhood is located 0.67 miles south of the site. DFW7 is also located 1.7 miles southwest of Perot Field Fort Worth Alliance Airport.
- **ELP1 –** Located at 12101 Emerald Pass Avenue, El Paso, Texas 79928, the proposed ELP1 PADDC is an Amazon Robotics Sortable Fulfillment Center, as shown in **Figure A-16**. The site is technically located in unincorporated El Paso County. ELP1 is zoned Planned Industrial (P-I), which establishes an industrial environment for certain types of manufacturing, business or industrial uses which are compatible with any adjacent land use by performance, appearance, and general operating characteristics. The site sits north of Interstate 10 and has residential neighborhoods within 0.2 miles to the northeast and southeast of the site.
- **FTW4 –** Located at 15201 Heritage Parkway, Fort Worth, Texas, 76244, the proposed FTW4 PADDC is a fulfillment center located within the city of Fort Worth, as shown in **Figure A-17**. FTW4 is zoned heavy industrial(K), which also includes all permitted uses of light industrial(I) and medium industrial(J). The site sits north of Interstate 35W and northeast of Perot Field Forth Worth Alliance Airport. The site itself is surrounded by other industrial users with the nearest residential development being located 0.41 miles to the north.
- **HOU2 –** Located at 10550 Ella Boulevard, Houston, Texas 77038, the proposed HOU2 PADDC is an Amazon Robotics Sortable Fulfillment Center, as shown in **Figure A-18**. The site is regulated by the City of Houston's Department of Planning and Development. The site is located within an ETJ. A multifamily residential neighborhood is located 0.56 miles northwest of the site.
- **HOU6** – Located at 10507 Harlem Road, Richmond, Texas 77407, the proposed HOU6 PADDC is an Amazon Robotics Sortable Fulfillment Center, as shown in **Figure A-19**. The site is located within unincorporated Fort Bend County, Texas. Fort Bend County has not adopted zoning ordinances and does not issue Certificates of Occupancy. However, Fort Bend County has adopted a County Fire Code and the Fort Bend County Fire Marshal's Office issues Certificates of Compliance for certain

multi-family and non-residential developments. The nearest residential development is 0.33 miles to the southeast.

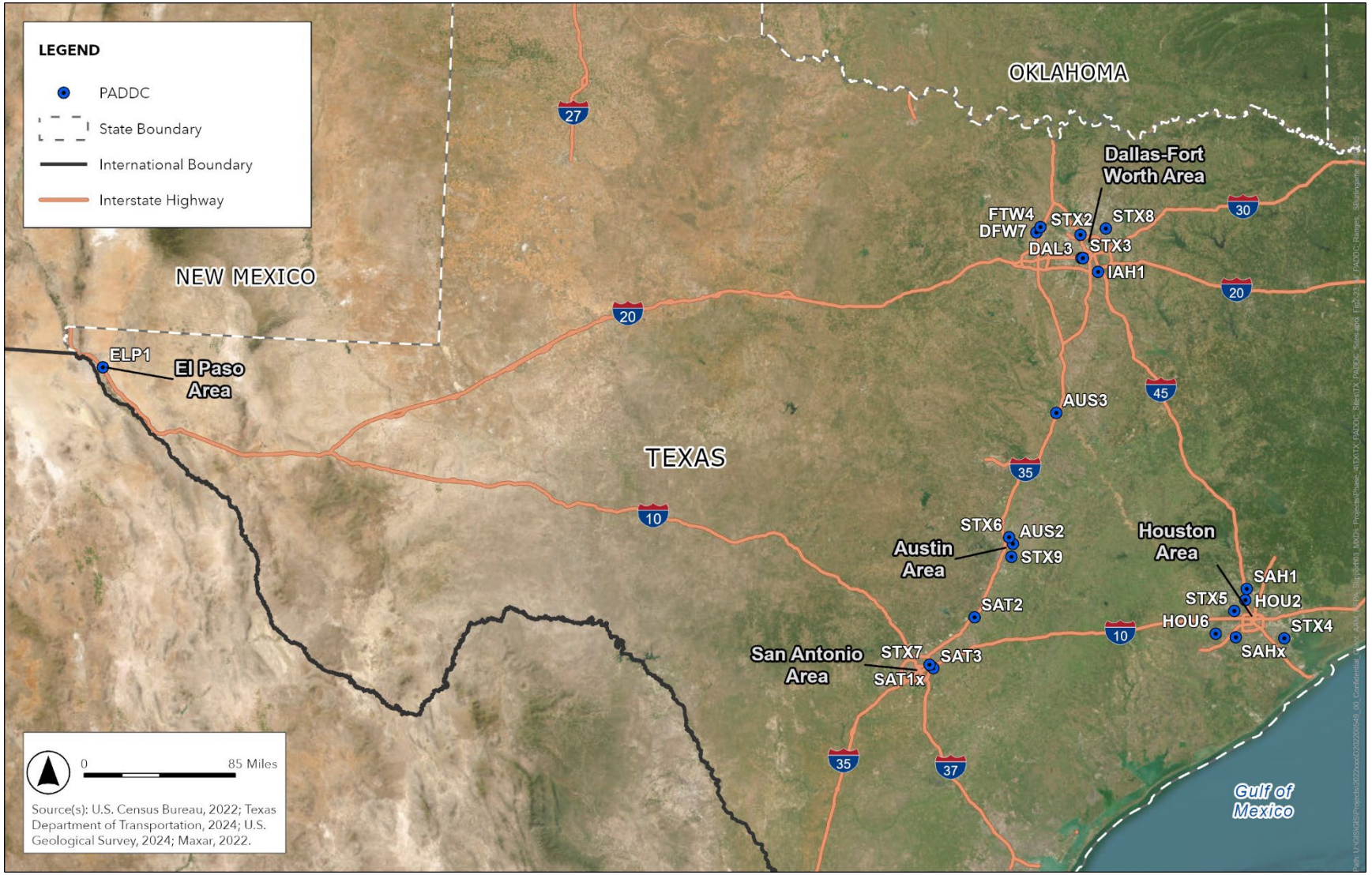
- **IAH1 –** Located at 9155 Southlink Drive, Dallas, Texas 75241, the proposed IAH1 PADDC is an Amazon Robotics Fulfillment Center, as shown in **Figure A-20**. IAH1 is zoned Planned Development within the City of Dallas. The Planned Development is number 761 and identified as the Dallas Logistics Port Special Purpose District. The nearest residential use is 0.28 miles west of the PADDC.
- **SAT2 –** Located at 1401 East McCarty Lane, San Marcos, Texas 78666, the proposed SAT2 PADDC is an Amazon Robotics Fulfillment Center, as shown in **Figure A-21**. SAT2 is zoned Heavy Industrial District (HI), which is intended to accommodate a broad range of high impact manufacturing or industrial uses that by their nature create a nuisance, and which are not properly associated with or are not compatible with nearby residential or commercial uses. SAT3 is located southwest of Interstate 35 with nearby uses that include a hotel, U.S. Army Reserve Outpost, and other commercial and industrial uses. The nearest residential development is 0.33 miles south of the site.
- **SAT3** – Located at 6806 Cal Turner Driver, San Antonio, Texas 78220, the proposed SAT3 PADDC is an Amazon Robotics Fulfillment Center, as shown in **Figure A-22**. SAT3 is zoned Heavy Industrial (I-2), which allows uses that are highly hazardous, environmentally severe in character, or generate very high volumes of truck traffic. The site is located at the southern edge of a large commercial and industrial park with similar uses. There are several vehicle storage properties south of the site with the nearest residential unit being 0.28 miles to the southwest.

1.3 FAA Role and Federal Action

The FAA has a statutory obligation to review Prime Air's request to amend the OpSpecs and determine whether the amendment would affect safety in air transportation or air commerce, and to determine whether the public interest requires the amendment. In general, Congress has charged the FAA with the safety of air commerce in the United States.[1]

In addition, the FAA has specific statutory and regulatory obligations related to its issuance of a Part 135 certificate and the related OpSpecs. The FAA is required to issue an operating certificate to an air carrier when it "finds, after investigation, that the person properly and adequately is equipped and able to operate safely under this part and regulations and standards prescribed under this part."[2] An operating certificate also specifies "terms necessary to ensure safety in air transportation; and (2)…the places to and from which, and the airways of the United States over which, a person may operate as an air carrier."[3] Also included in air carrier certificates is a stipulation that the air carrier's operations must be conducted in accordance with the provisions and limitations specified in the OpSpecs.[4]

1 49 U.S.C. § 40104.
2 49 U.S.C. § 44705.
3 Id.
4 14 CFR § 119.5 (g), (l).



Source: ESA, 2025; Maxar, 2022; US Census Bureau, 2021; US Geological Survey, 2022.

Figure 1-1
Prime Air's Proposed PADDC Locations in Texas

The regulations also specify that a Part 135 certificate holder may not operate in a geographical area unless its OpSpecs specifically authorizes the certificate holder to operate in that area.[5] The regulations implementing Section 44705 specify that an air carrier's approved OpSpecs must include, among other things, "authorization and limitations for routes and areas of operations."[6] An air carrier's OpSpecs may be amended at the request of an operator if the FAA "determines that safety in air commerce and the public interest allows the amendment."[7] After making this determination, the FAA must take an action on the OpSpecs amendment.

1.4 Purpose and Need

The **purpose** of Prime Air's request is to begin commercial drone delivery service throughout the state of Texas, which, in its business judgment, Prime Air has determined is an appropriate market for expanded commercial delivery operations. The requested OpSpecs amendments are **needed** so that Prime Air can begin MK30 drone delivery operations from its 22 proposed PADDC locations. The approval will offer Prime Air an opportunity to further assess the viability of commercial drone delivery options under real world conditions and demonstrate that it can conduct operations safely and meet its compliance obligations. Furthermore, it could also help Prime Air gauge public demand for commercial drone delivery services and provide an opportunity to assess community response to commercial delivery operations in this area.

1.5 Public Involvement

The FAA provided a Notice of Availability (NOA) of the Draft EA on August 15, 2025, to local interest groups, local government officials, public park authorities, and the State Historic Preservation Office (SHPO), Federally Recognized Indian Tribes, and Tribal Historic Preservation Offices (THPOs). A complete NOA distribution list and documentation of Prime Air's overall public outreach efforts can be found in **Appendix A-2**. On the same date, the FAA made the EA available to the general public on the FAA website. The published NOA can be found in **Appendix A-2**. The NOA provided information about the Proposed Action and requested review and comments on the EA, which will be available on the FAA website for an initial 30-day comment period (August 15, 2025, to September 13, 2025), which was subsequently extended to October 1, 2025. Interested parties were invited to submit comments on any environmental concerns relating to the Proposed Action to a specifically assigned email address. All submitted public comments and associated FAA responses are included in **Appendix F**.

5 14 CFR § 119.5(j).

6 14 CFR § 119.49(a)(6).

7 14 CFR § 119.51(a); see also 49 U.S.C. § 44709.

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CHAPTER 2
Proposed Action and Alternatives

FAA Order 1050.1F, Paragraph 6-2.1(d) states that, "[a]n EA may limit the range of alternatives to the proposed action and no action alternative when there are no unresolved conflicts concerning alternative uses of available resources." The FAA has not identified any unresolved conflicts concerning alternative uses of available resources associated with Prime Air's proposal. Therefore, this EA only considers the No Action and the Proposed Action alternatives.

2.1 No Action Alternative

The FAA considered the No Action alternative and the Proposed Action in its NEPA analysis. Thus, the No Action alternative serves as a baseline to compare the impacts of the Proposed Action. Under the No Action alternative, the FAA would not issue the approvals necessary (e.g., the OpSpecs amendment) and Prime Air would not be authorized to conduct commercial drone package delivery flights from the 22 proposed PADDCs throughout the state of Texas. This alternative does not support the stated purpose and need.

2.2 Proposed Action

The FAA would amend Prime Air's OpSpecs to enable commercial drone package deliveries in new locations. Accordingly, Prime Air has requested the FAA to approve its OpSpecs amendment so that it can begin drone commercial delivery operations in new operating areas throughout Texas. The B050 OpSpecs, Authorized Areas of En Route Operations, Limitations, and Provisions, includes a reference section titled Limitations, Provisions, and Special Requirements. The FAA's approval of this OpSpecs amendment – including the paragraph in the B050 OpSpecs's reference section with descriptive language about the operating area boundaries, including the specific locations and operational profile proposed in Prime Air's request – is the proposed federal action for this EA. The B050 OpSpecs will restrict Prime Air to these 22 locations; any future expansion beyond the authorization and limitations for the area of operations described in the B050 OpSpecs may require additional OpSpecs amendments from the FAA, and may be subject to appropriate NEPA review, as necessary.

2.2.1 Description of Proposed Operations

As described in **Section 1.2**, Prime Air anticipates operating up to 1,000 delivery flights per operating day, 7 days per week, from each of the 22 PADDCs. These operational levels would result in a projected total of approximately 365 operating days and 365,000 delivery operations per year for each PADDC, based on the scope of the Proposed Action. The operations would occur between 7 A.M. and 10 P. M. and are anticipated to be distributed evenly across each operating area. The MK30's operating range is 7.5 mi from the PADDC, with a potential operating area of 174 sq mi. The drone departure and arrival paths from and to each PADDC would generally correspond to the geographical location of the package delivery address.

The generally proposed operating areas for the 22 PADDCs, which also serve as the Study Areas for the EA, are consolidated on a single map, as depicted in **Figure 2-1.** Each specific Study Area is depicted in detail in **Figures A-23** through **A-44** in **Appendix A-1**.

2.2.2 Drone Specifications

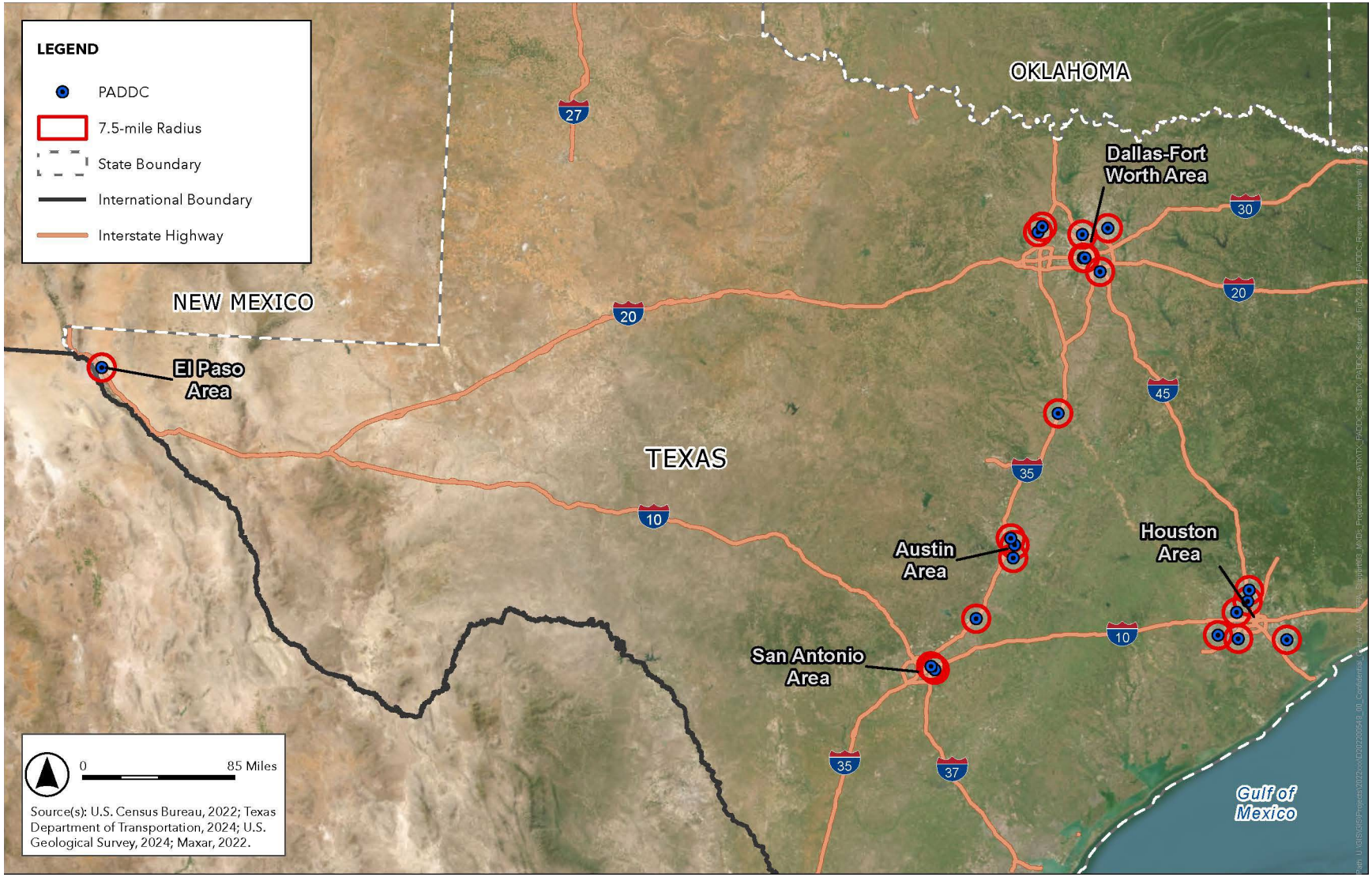
As shown in **Figure 2-2**, the MK30 is an electric powered drone that has a vertical take-off and landing, and transitions to wing borne flight using wing lift during *en route* flight. The drone systems include hardware and software designed for safety and efficiency. The airframe is composed of staggered wings, the propulsion system includes a rechargeable lithium-ion battery, and six (6) motors that include propellers designed for noise reduction, the package delivery system contains the package in a two-door interior receptacle, and a camera and avionics system that has redundancy for critical systems. The drone weighs approximately 78 lbs. and has a maximum takeoff weight of 83.2 lbs., which includes a maximum payload of 5 lbs. It has a maximum operating range of 7.5 mi and can fly up to 400 ft above ground level (AGL) at a maximum cruise speed of 73 mph (64 knots) during horizontal flight.

2.2.3 Flight Operations

As shown in **Figure 2-3**, a typical flight profile can be broken into the following general flight phases: launch, *en route* outbound, delivery, *en route* inbound, and landing. After launch, Prime Air's MK30 drone would rise to an altitude of less than 400 ft AGL and follow a predefined route to its delivery site.[8] Aircraft would typically fly *en route* at between approximately 180 and 377 ft AGL, except when descending to drop a package. Packages would be carried internally in the drone's fuselage. When making a delivery, the drone descends, opens a set of payload doors, and drops the package to the ground from approximately 13 ft AGL. Prime Air's drone would not touch the ground in any place other than the PADDC (except during safe contingent landings) and will remain airborne throughout the operation including the delivery stage.[9] After the package is dropped, the MK30 drone climbs vertically and follows its predefined route back to the PADDC at its assigned altitude.

[8] Prime Air may modify operations, if warranted, to avoid or minimize any negative impacts.

[9] The MK30 vehicle is built with multiple redundant safety features and "detect and avoid" technology. The drone is designed to handle unexpected situations; it is independently safe.

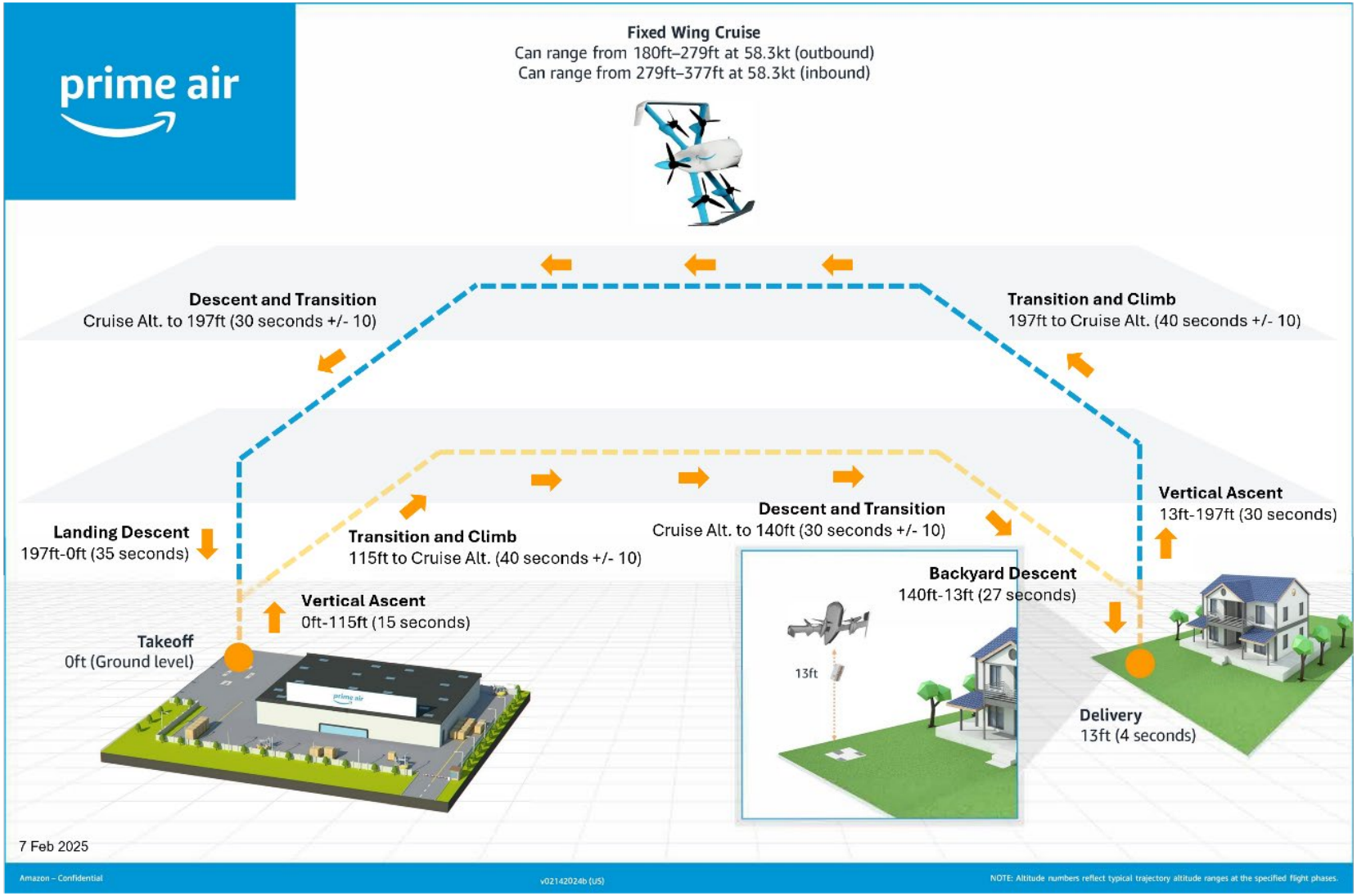


Source: ESA, 2025; US Census Bureau, 2022; Texas DOT, 2024; US Geological Survey, 2024; Maxar, 2022.

Figure 2-1
Study Areas – All PADDCs

Source: Amazon Prime Air, 2024.

Figure 2-2
MK30 Drone



Source: Amazon Prime Air, 2025.

Figure 2-3
MK30 Drone Flight Profile

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CHAPTER 3
Affected Environment and Environmental Consequences

3.1 Introduction

This chapter provides a description of the affected environment and potential environmental consequences for the environmental impact categories that have the potential to be affected by the No Action and Proposed Action Alternatives, as required by FAA Order 1050.1F and NEPA statutes, as appropriate. As required by FAA Order 1050.1F, this EA presents an evaluation of impacts for the environmental impact categories listed below.

- Air quality
- Biological resources (including fish, wildlife, and plants)
- Coastal resources
- Department of Transportation Act, Section 4(f)
- Farmlands
- Hazardous materials, solid waste, and pollution prevention
- Historical, architectural, archaeological, and cultural resources
- Land use
- Natural resources and energy supply
- Noise and noise-compatible land use
- Socioeconomics, and children's environmental health and safety risks
- Visual effects (including light emissions)
- Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

The action areas evaluated for potential impacts are defined as Prime Air's proposed operating areas shown in **Figures A-23** through **A-44** in **Appendix A-1**. The level of detail provided in this chapter is commensurate with the importance of the potential impacts. EAs are intended to be concise documents that focus on aspects of the human environment that may be affected by the Proposed Action.

3.2 Environmental Impact Categories Not Analyzed in Detail

This EA did not analyze potential impacts on the following environmental impact categories in detail because the Proposed Action would not affect the resources included in the category (see FAA Order 1050.1F, Paragraph 4-2.c).

- **Air Quality**: The MK30 is battery-powered and does not generate emissions that could result in air quality impacts. Electricity consumed for battery charging at the PADDC would be minimal. The electricity consumed for the Proposed Action would come from the power grid. The proposed drone operating areas are located over an 18-county area in the vicinities of El Paso, Plano, Houston, Austin, San Antonio, Fort Worth, and Dallas, which includes the following counties:
  - Bexar
  - Brazoria
  - Chambers
  - Collin
  - Comal
  - Dallas
  - Denton
  - El Paso
  - Fort Bend
  - Galveston
  - Guadalupe
  - Harris
  - Travis
  - McLennan
  - Montgomery
  - Tarrant
  - Williamson
  - Wise

  Comal and Guadalupe counties are designated as attainment areas by the US Environmental Protection Agency. Bexar, Brazoria, Collin, Dallas, Denton, Collin, Fort Bend, Galveston, Harris, Montgomery, Tarrant counties are designated as either maintenance or nonattainment for one or more criteria air pollutants However, the minimal emissions associated with charging the drone batteries are unlikely to contribute to any exceedance of National Ambient Air Quality Standards.
- **Biological Resources (Fish and Plants)**: The Proposed Action would not result in impacts to fish and plant species as the action is launched from developed/industrial areas, transported by drone, and delivered to residential houses and communities.
- **Coastal Resources**: The Proposed Action would not directly affect any shorelines or change the use of shoreline zones or be inconsistent with any National Oceanic and Atmospheric Administration–approved state Coastal Zone Management Plan. A portion of the drone operating area of the STX4 PADDC overlaps coastal management areas (see **Figure A-28**). However, the PADDC is an existing facility and package deliveries along the shoreline would be restricted to developed areas of land and would not extend beyond the residential properties on the shoreline; as such, the Proposed Action is expected to be consistent with the Texas Coastal Management Program. The FAA submitted a request for a consistency finding to the Texas General Land Office on August 15, 2025. On December 29, 2025, the Texas General Land Office determined that the Proposed Action is consistent with the goals and enforceable policies of the Texas Coastal Management Program. Copies of all agency correspondence are included in **Appendix G**.

- **Farmlands**: The Proposed Action would not involve the development or disturbance of any land, regardless of use, nor would it have the potential to convert any farmland to non-agricultural uses. The Proposed Action would not affect designated prime or unique farmlands.
- **Hazardous Materials, Solid Waste, and Pollution Prevention**: The Proposed Action would not result in any construction, development, or any physical disturbances of the ground. Therefore, the potential for impacts related to hazardous materials, pollution prevention, and solid waste is not anticipated. The drones are made of common aircraft-related materials, such as steel, aluminum, and composite materials, such as plastic. Drone/battery disposal would be properly managed at the end of its operating life in accordance with applicable 14 CFR Part 10, *Disposition of life-limited aircraft parts*, and any hazardous materials would be disposed of in accordance with all applicable federal, tribal, state, and local laws, including 40 CFR Part 273, *Standards for Universal Waste Management*.
- **Land Use**: The Proposed Action would not involve any changes to existing, planned, or future land uses within the area of operations. Prime Air would use existing facilities to conduct its MK30 operations. The PADDCs must conform with all applicable local or state land use ordinances and zoning requirements, as described in **Section 1.2**.
- **Natural Resources and Energy Supply**: The Proposed Action would not require the need for unusual amounts of natural resources and materials, or those in scarce supply. The MK30 is powered by a rechargeable battery which does not consume fossil fuel (e.g., gasoline or aviation fuel) resources. The battery is charged by an electric charger which can leverage the local grid to charge the batteries. The MK30 would be used to replace personal vehicle trips to stores for urgently needed items; thus, the MK30 is expected to reduce consumption of fossil fuel resources.
- **Socioeconomics and Children's Environmental Health and Safety Risks**: The Proposed Action would not involve acquisition of real estate, relocation of residents or community businesses, disruption of local traffic patterns, loss in community tax base, or changes to the fabric of the community. Executive Order (EO) 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires federal agencies to ensure that children do not suffer disproportionately from environmental or safety risks. The Proposed Action would not introduce products or substances a child would be likely to come into contact with, ingest, use, or be exposed to, and would not result in environmental health and safety risks that could disproportionately affect children. It is not anticipated that the Proposed Action would pose a greater health and safety risk to children than package delivery by other means (truck, mail, personal automobile, etc.).
- **Visual Effects (Light Emissions Only)**: The Proposed Action would not result in significant light emission impacts because flights would not be conducted during the nighttime.[10]
- **Water Resources (Wetlands, Floodplains, Surface Water, Groundwater, Wild and Scenic Rivers)**: The Proposed Action would not result in any further construction of facilities and does not include any new facilities in areas identified as flood hazard areas according to the 1% annual chance (100-year) floodplain (non-critical actions) and 0.2% annual chance (500-year) floodplain (critical actions) that are currently used to determine the floodplain impacts for a proposed action. The Proposed Action would not result in any changes to existing discharges to water bodies, create a new discharge that would result in impacts to surface waters, or modify a water body. The Proposed

[10] The FAA defines nighttime between the hours 10 P.M. and 7 A.M.

Action does not involve land acquisition or ground disturbing activities that would withdraw groundwater from underground aquifers or reduce infiltration or recharge to ground water resources through the introduction of new impervious surfaces. The Proposed Action would not affect any river segments in the Wild and Scenic River System (WSRS). The Rio Grande is the only river in TX that is listed in the WSRS. However, several rivers listed in the Nationwide Rivers Inventory (NRI) are located within 100 miles, including Pine Island Bayou, Little Pine Island Bayou, Winters Bayou, Village Creek and Big Sandy Creek, Turkey Creek, Neches River, Sabine River, Pedernales River, Guadalupe River, Medina River, Sabinal River, Frio River, Nueces River, Colorado River, Brazos River. The Proposed Action would not affect any river segments in the WSRS or the NRI.

3.3 Biological Resources (Wildlife)

3.3.1 Definition of Resource and Regulatory Setting

Biological resources include plant and animal species and their habitats, including special status species (federally listed or state-listed threatened or endangered species, species proposed for listing, species that are candidates for federal listing, marine mammals, and migratory birds) and environmentally sensitive or critical habitat. In addition to their intrinsic values, biological resources provide aesthetic, recreational, and economic benefits to society.

3.3.1.1 Threatened and Endangered Species

The Endangered Species Act (ESA) of 1973 [16 U.S.C. § 1531 et seq.] requires the evaluation of all federal actions to determine whether a proposed action is likely to jeopardize any proposed, threatened, or endangered species or proposed or designated critical habitat. Critical habitat includes areas that will contribute to the recovery or survival of a listed species. Federal agencies are responsible for determining if an action *may affect* listed species, which determines whether formal or informal consultation with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) is needed. If the FAA determines that the action may affect listed species, consultation with the USFWS must be initiated. Conversely, if the FAA determines the action would have *no effect* on listed species or critical habitat, consultation is not required.

Impacts considered significant to federally listed threatened and endangered species would occur when the USFWS or NMFS determines that a proposed action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would be likely to result in the destruction or adverse modification of federally designated critical habitat. An action need not involve a threat of extinction to federally listed species to meet the NEPA standard of significance. Lesser impacts, including impacts on non-listed or special status species, could also constitute a significant impact.

3.3.1.2 Migratory Birds

The Migratory Bird Treaty Act (16 U.S.C. §§ 703-712) protects migratory birds, including their nests, eggs, and parts, from possession, sale, purchase, barter, transport, import, export, and take. The USFWS is the federal agency responsible for the management of migratory birds as they spend time in habitats of the U.S. For purposes of the Migratory Bird Treaty Act, "*take*" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect" (50

CFR § 10.12). The Migratory Bird Treaty Act applies to migratory birds identified in 50 CFR § 10.13 (defined hereafter as “migratory birds”).

3.3.1.3 Bald and Golden Eagles

The Bald and Gold Eagle Protection Act prohibits anyone from “taking” a Bald or Golden Eagle, including their parts, nests, or eggs, without a permit issued by the USFWS. Implementing regulations (50 CFR § 22), and USFWS guidelines as published in the National Bald Eagle Management Guidelines, provide for additional protections against “*disturbances*.” Like take, "*disturb*" means to agitate or bother a Bald or Golden Eagle to a degree that causes, or is likely to cause, injury to an Eagle or causes either a decrease in its productivity or nest abandonment due to a substantial interference with breeding, feeding, or sheltering. A permitting process provides limited exceptions to the Bald and Golden Eagle Protection Act's prohibitions. The USFWS has issued regulations for the permitting process in 50 CFR Part 22, which include permits for the incidental take of Bald Eagles. Such permits are only needed when avoidance of incidental take is not possible. According to the USFWS National Bald Eagle Management Guideline, to avoid Bald Eagle disturbance resulting from new or intermittent activities, the implementation of conservation measures to avoid operating aircraft within 1,000 feet of a nest during the breeding season should be implemented.[11] However, a Bald Eagle Disturbance Take General Permit may be offered if disturbance (range of 330 to 1,000 feet) to an in-use eagle nest is unavoidable.[12]

3.3.2 Affected Environment

This section describes the existing biological environment of the operating area. The operating areas fall into six different ecoregions. The western ELP1 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 within 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 are 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.

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

[11] National Bald Eagle Management Guidelines, US Fish and Wildlife Service, May 2007.

[12] Department of the Interior, USFWS, Federal Register, Vol. 89, No 29 Rules and Regulations, 50 CFR Parts 13 and 22. Available at: https://www.endangeredspecieslawandpolicy.com/assets/htmldocuments/NewBlogs/EndangeredSpecies/2024-02182.pdf, accessed April 2024.

species in the region, including white-tailed deer, eastern gray squirrels, eastern cottontails, raccoons, armadillos, mice, badgers, songbirds, raptors, waterfowl, and insects.[13]

3.3.2.1 Federally Listed Species

The potential for impacts to federally listed species was assessed using the USFWS Information for Planning and Consultation (IPaC) map tool and resource. The action areas covered the entire drone operating areas, as depicted in **Figures A-23** through **A-44** in **Appendix A-1**. The USFWS species lists, obtained through IPaC, are included with this EA (accessed January and April 2025, see **Appendix B**).

Based on the IPaC species list, there are 50 federally listed endangered and threatened species, two proposed endangered species, and two proposed threatened species with the potential to occur in the action areas. **Table 3-1** lists the federally threatened and endangered species that could be present and affected by the drone operations in the action area. In addition, critical habitat was identified for seven of these species that overlap the action areas.

Bald Eagles are not included within Table 3-1; however, they are addressed in the Migratory Birds section, below.

Of the 54 species identified in the IPaC review, only 12 species may be affected by the drone operations, as shown in **Table 3-2**. Habitat for the other 42 species (alligator snapping turtle (*Macrochelys temminckii*), Attwater's Greater Prairie-Chicken (*Tympanuchus cupido attwateri*), 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*), Eastern Black Rail (*Laterallus jamaicensis* spp. *jamaicensis*), 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*), leatherback sea turtle (*Dermochelys coriacea*), Madia Cave meshweaver (*Cicurina madila*), 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*)) are limited within the action areas and include many cave dwelling species.

[13] iNaturalist. Available at: https://www.inaturalist.org/places/united-states. Accessed November 2024.

TABLE 3-1
IPaC RESULTS

Species	Common Name	Species Name	Federal Status	Critical Habitat	PADDC
Mammals	Tricolored bat	*Perimyotis subflavus*	PE	N	AUS2, AUS3, DAL3, DFW7, FTW4 , HOU2, HOU6, IHA1, SAH1, SAHx, SATx, SAT2, SAT3, STX2, STX3, STX4, STX5, STX6, STX7, STX8, STX9
Birds	Eastern black rail	*Laterallus jamaicensis ssp. Jamaicensis*	T	N	SAHx
	Golden-cheeked Warbler	*Setophaga chrysoparia*	E	N	AUS2, AUS3, DAL3, IHA1, SATx, SAT2, SAT3, STX2, STX3, STX6, STX7, STX8, STX9
	Piping plover	*Charadrius melodus*	T	N	AUS2, AUS3, DAL3, DFW7, ELP1, FTW4, HOU2, HOU6, IHA1, SAH1, SAHx, SAT2, SAT3, STX3, STX4, STX5, STX6, STX7, STX8, STX9
	Rufa Red Knot	*Caliris canutus rufa*	T	N	AUS2, AUS3, DAL3, DFW7, ELP1, FTW4, HOU2, HOU6, IHA1, SAH1, SAHx, SATx, SAT2, SAT3, STX3, STX4, STX5, STX6, STX7, STX8, STX9
	Whooping Crane	*Grus americana*	E	N	AUS2, AUS3, DAL3, DFW7, FTW4, HOU2, HOU6, IHA1, SAH1, SAHx, SATx, SAT2, SAT3, STX2, STX3, STX4, STX5, STX6, STX7, STX8, STX9
	Southwestern Willow Flycatcher	*Empidonax traillii extimus*	E	N	ELP1
	Yellow-billed Cuckoo	*Coccyzus americanus*	T	N	ELP1
	Red Cockaded woodpecker	*Dryobates borealis*	T	N	SAH1
	Attwater's Greater Prairie-chicken	*Tympanuchus cupido*	E	N	STX4
	Aplomado Falcon	*Falco femoralis septentrionalis*	E	N	ELP1
Insects	Monarch butterfly	*Danaus plexippus*	Candidate Species	N	EPL1, FTW4, SAHx, SATx

Notes:
E – Endangered
PE – Proposed Endangered
T – Threatened
N – None
Source: USFWS IPaC, accessed January/April 2025.

TABLE 3-2
POTENTIAL EAGLE NEST OCCURRENCES BY COUNTY

County	Potential Number of Nests
Bexar	11
Collin	2
Comal	2
Dallas	26
Denton	2
Fort Bend	10
Harris	23
Travis	2
McLennan	1
Montgomery	10
Tarrant	6
Williamson	1

Source: iNaturalist. Available at: https://www.inaturalist.org/places/united-states. Accessed February 2025.

According to Texas Parks and Wildlife and USFWS, the tricolored bat (*Perimyotis subflavus*) has the potential to occur within the action areas. This small, yellowish-brown bat can be found hibernating singly in most caves and mines in Texas. Typically, the tricolored bat hibernates in winter in the humid and warm parts of caves and roost during the summer in buildings, tree cavities, and rock crevices. They begin feeding around sundown with other feeding period toward midnight and near daylight. Generally, the tricolored bat forages high over watercourses at the forest edge.[14]

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.[15]

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 Piping Plover (*Charadrius melodus*) is a small shore bird, with sandy-colored feathers with grayish-brown crowns and backs, white foreheads, and dark bands across their crowns. Dark, but incomplete rings encircle their necks. These little birds have yellow-orange legs, black bands across their foreheads from

[14] Texas Parks and Wildlife - https://tpwd.texas.gov/huntwild/wild/. Accessed February 2025.

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

eye to eye, and black rings around the base of their necks. They are small, stocky, sandy-colored birds that resemble sandpipers, with short, stubby bills. These shorebirds live on sandy beaches and lakeshores.

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.

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 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, nearby streams, and 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 occurs in June and July.

The Yellow-Billed Cuckoos (*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 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 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 Aplomado Falcon (*Falco femoralis septentrionalis*) has a steel grey back, red breast, black "sash" on its belly, and striking black markings on the top of its head, around its eyes, and extending down its face. Falcons are being reintroduced in south Texas to bring back the population. Aplomado Falcons require

open grassland or savannah habitat with scattered trees or shrubs. In Texas, Aplomado Falcons are found in the south Texas and Trans-Pecos regions.

Data received using the USFWS IPaC system also identified the monarch butterfly (*Danaus plexippus*) as potentially occurring in the action areas. Monarchs occur throughout the United States during summer months and is a candidate species for federal listing. Monarchs funnel through Texas both in the fall and the spring. During the fall, monarchs use two principal flyways. One traverses Texas across a 300-mile-wide path stretching from Wichita Falls to Eagle Pass. Monarchs enter the Texas portion of this flyway during the last days of September. By early November, most have passed through into Mexico. The second flyway is situated along the Texas coast and lasts roughly from the third week of October to the middle of November. Early each March overwintering monarchs begin arriving from their overwintering grounds in Mexico.

3.3.2.2 State Species of Concern

The Texas Parks and Wildlife Department (TPWD) is charged with the protection and management of Texas's fish, forest, and wildlife resources. Species listed in the State Wildlife Action Plan (SWAP), Texas Parks and Wildlife (TPW) Code Chapter 43.021, and all federally listed endangered and threatened plants and animals protected by the Endangered Species Act of 1973 (ESA) are protected by the State Endangered Species Law 252.240. Section 68.002 of the TPW Code states that species of fish or wildlife indigenous to Texas are endangered if listed on the United States List of Endangered Native Fish and Wildlife or the list of fish or wildlife threatened with statewide extinction as filed by the director of Texas Park and Wildlife Department. Species listed as Endangered or Threatened by the Endangered Species Act are protected by both federal and state law. The state of Texas also lists and protects additional species considered to be threatened with extinction within Texas. Animals - Laws and regulations pertaining to state-listed endangered or threatened animal species are contained in Chapters 67 and 68 of the TPW Code and Sections 65.171 - 65.176 of Title 31 of the Texas Administrative Code (TAC). State-listed animals may be found at 31 TAC §65.175 & 176. Laws and regulations pertaining to endangered or threatened plant species are contained in Chapter 88 of the TPW Code and Sections 69.01 - 69.9 of the TAC. State-listed plants may be found at 31 TAC §69.8(a) & (b).

Appendix B provides a list of state-listed species for each county within the action areas.

3.3.2.3 Migratory Birds

Migratory bird species found within the operating area will vary throughout the year. During certain weeks in the spring and fall, hundreds of species of songbirds, raptors, and waterfowl may potentially pass through the operating area. Additionally, several dozen species of birds may potentially nest in the operating area at certain times of the year.

The Bald Eagle is a migratory species that is protected under the Bald and Golden Eagle Act. Eagles may appear throughout Texas as spring and fall migrants, breeders, or winter residents.[16] According to iNaturalist, several bald eagle nests may be present within the action areas (Table 3-2). It should be noted that nest locations provided by iNaturalist may be highly generalized as access to an observations geographic information could be restricted. Should a Bald Eagle nest be identified within the action areas,

[16] Cornell Lab of Ornithology (Cornell Lab). No Date. All About Birds: Bald Eagle. Available: https://www.allaboutbirds.org/guide/Bald_Eagle/overview.

the National Bald Eagle Management Guidelines state aircraft should stay at least 1,000 feet from the nests during the breeding season unless the aircraft is operated by a trained wildlife biologist.

3.3.3 Environmental Consequences

Drones used for commercial package delivery fly at lower speeds and elevations and are smaller than conventional aircraft. Furthermore, the drones would be hovering in fixed positions at both the PADDC and delivery locations leaving them temporarily exposed to a potential mobbing and/or attacking bird defending its breeding territory.

Bird behavior, in particular mobbing and territorial defense behaviors, on flying and hovering drones is the most important risk consideration analysis, as these behaviors are the most pertinent to the Proposed Action. Mobbing behavior includes birds emitting alarm calls, flying at a potential predator, diverting its attention, and harassing it. Mobbing and aerial attack behaviors typically occur when a raptor, crow, or other aerial predator enters the airspace of a breeding habitat bird or territorial male.[17] Certain species of birds are known to harass, mob, and attack aerial predators that fly into or near their territory, especially during the breeding season when birds are actively nesting. The defending birds will chase, dive bomb, attack the backside, and vocalize to harass the aerial predator until the offender is far enough from the territory that the defending birds cease attacking and return to their nests and foraging activities.[18] Not all bird species exhibit mobbing and territorial defensive behaviors. Some bird species are more aggressive, defensive, and cued on aerial predators, while other species may show aggression or interest towards an overflying hawk in its territory. Species of birds that exhibit mobbing and territorial defense behaviors include Northern Mockingbirds, kingbirds, blackbirds, grackles, jays, crows, ravens, and some raptors.

The MK30 drone would utilize existing infrastructure at each PADDC. There would be no further expansion of the PADDCs, or habitat modification associated with the Proposed Action. Earlier construction was not part of the Proposed Action reviewed by the FAA, but any future ground construction at the PADDC sites would require approval or authorization by the FAA.

Prime Air's aircraft would not touch the ground in any other place than the PADDC (except during emergency landings) since it remains airborne while conducting deliveries. The operations would be taking place within airspace, and typically well above the tree line and away from sensitive habitats. After launch, Prime Air's drone would rise to a cruising altitude between 180 feet and 377 feet AGL and follow a preplanned route to its delivery site. The pre-planned route is optimized to avoid terrain and object obstructions, areas of high aircraft traffic, and areas where people may gather in large numbers such as highways, parks, and schools.

Aircraft would typically stay between 180 and 377 feet AGL except when descending to drop a package. When making a delivery, the aircraft descends, and packages are dropped to the ground from approximately 13 feet AGL. Packages are carried internally in the aircraft's fuselage and are dropped by opening a set of payload doors on the aircraft. After the package is dropped the drone then climbs vertically to approximately 180 to 377 feet and reverses the path taken, returning to the takeoff/landing

[17] Royal Society for the Protection of Birds (RPSB). 2023. What is Mobbing? Available: https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/birdwatching/bird-behaviour/what-is-mobbing/. Accessed: July 2023 and February 2024.

[18] Kalb, N., and C. Randler. 2019. Behavioral Responses to Conspecific Mobbing Calls Are Predator-Specific in Great Tits (Parus major). Ecology and Evolution 9(16):9207–9213. Available: https://doi.org/10.1002/ece3.5467.

pad at the PADDC. The drone would take approximately 61 seconds to complete a delivery, which includes the descent from en route altitude, dropping the package, and returning back to en route altitude. As a result, the duration of exposure by most wildlife on the ground to the visual or noise impacts from the drone would be of very short duration (approximately one minute).

It is not likely that listed species would be in the vicinity of the delivery location because such locations would be developed areas. However, even if species were expected to be exposed to this noise level, the noise would be unlikely to cause significant disturbance (for context, a drone overflight at 50 feet is approximately 74.2 decibels, whereas a leaf blower at 50 feet is approximately 73 to 77 decibels).[19] At a potential maximum of 1,000 flights per day across the entire action area of each PADDC (or 22,000 total per day), the distribution and altitude of the flights are not expected to significantly affect wildlife in the action area.

A significant impact on federally listed threatened and endangered species would occur when the USFWS or NMFS determines a proposed action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would be likely to result in the destruction or adverse modification of federally designated critical habitat. An action need not involve a threat of extinction to federally listed species to meet the NEPA standard of significance. Lesser impacts, including impacts on non-listed or special-status species, could also constitute a significant impact.

Additionally, the FAA has considered the potential effects of wildfires that may be caused by the Proposed Action. While the Prime Air drone has been evaluated for airworthiness and is considered to be safe for the proposed operations over the operating area, the FAA acknowledges that a crash may occur and could result in a wildfire. Prime Air will use system-reported data to locate and report an off-nominal drone and will follow their Safety Management System's prescribed Incident Response Process to coordinate with local first responders as required. Due to the limited forested area within the action areas, potential for wildfires is minimal.

The FAA understands that Prime Air would immediately notify local emergency fire response services if one of its drones were to crash, and that fire responders would be able to manage any wildfire that could occur before the wildfire could cause significant impacts to biological resources in the operating area.

3.3.3.1 No Action Alternative

Under the No Action Alternative, the FAA would not issue the approvals necessary to enable Prime Air to conduct commercial drone package delivery operations in the Texas operating areas, including the use of the MK30 drone. Accordingly, the No Action Alternative would not result in impacts on biological resources.

3.3.3.2 Proposed Action

The Proposed Action includes up to 1,000 MK30 drone flights per day, up to 365 days per year, operating between 7 A.M. and 10 P.M. There would be no ground construction or habitat modification associated

[19] Appendix E: Noise Assessment Amazon Prime Air MK27-2 Unmanned Aircraft Operations at College Station Texas, Table 10 and Characteristics of Lawn and Garden Equipment Sound: A Community Pilot Study (National Institutes of Health) (National), December 2017, Available https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6707732/, Table 2.

with the Proposed Action. The drone would not touch the ground in any other place than the PADDC (except during emergency landings) because it remains aerial while conducting deliveries. Scheduled deliveries would initiate from the PADDC, approach an en route altitude of less than 400 feet AGL, and would generally occur between 180 and 377 feet AGL. The drone would lower to around 13 feet AGL and hover for two seconds to make a delivery. Then, the drone would transition back to an en route flight mode to return to the PADDC.

Operations would occur mostly in an urban environment, typically well above the tree line and away from sensitive habitats and given the short duration of increased ambient sound levels, flights are not expected to significantly influence wildlife in the area. A direct line of communication would be established with the Texas Parks and Wildlife Department to discuss any potential concerns regarding impacts on wildlife or habitat in the action area. In addition, Prime Air would also specifically coordinate with the managing entities of state parks and natural areas within the action area on the thoughtful placement and use of delivery sites within these areas as necessary.

Special Status Species

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 Alligator snapping Turtle, Austin blind salamander, Balcones spike, common beetles (*Rhadine spp.*), Bone Cave harvestman, bracted twistflower, Coffin Cave mold beetle, Cokendolpher Cave harvestman, Comal Springs dryopid, beetle (*Rhadine infenalis*), Comal Springs Riffle Beetle, Eastern Black Rail, False Spike, Fountain Darter, Government Canyon Bat Cave Meshweaver, Government Canyon Bat Cave Spider, Green Sea Turtle, Guadalupe Orb, Hawksbill Sea Turtle, Helotes Mold Beetle, Jollyville Plateau Salamander, Kemp's Ridley Sea Turtle, Leatherback Sea Turtle, Madia Cave Meshweaver, Peck's Cave Amphipod, Robber Baron Cave Meshweaver, San Marcos Salamander, Sneed Pincushion Cactus, Texas Blind Salamander, Texas fatmucket, Texas fawnsfoot, Texas Heelsplitter, Texas pimpleback, Texas Prairie Dawn-Flower, Texas Wild-rice, Tooth Cave Ground beetle, Tooth Cave Spider, West Indian Manatee identified within the USFWS IPaC official species list.

The monarch butterfly, a candidate for federal - listing, has the potential to occur in the operating area. Information regarding drone impacts on insects is limited and there have been no widespread negative impacts identified in the scientific literature. Some research shows that monarch butterflies often fly at elevations where they are not easily observed from the ground, at 800 to 1,200 feet in elevation, and would not be expected to frequently occur at the altitudes where Prime Air is proposing to operate.[20]

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. Recent bat research utilizing a special type of unmanned aerial vehicle (UAV) called the "Chirocopter" (equipped with a microphone to record echolocations and a thermal camera that can detect the bat’s body heat) suggests that the Chirocopter UAVs have “minimal impact on bat behavior”, as no bat collisions were recorded and bats

[20] Howard, Isis and Slusser, Kailee, 2025. 5 Monarch Migration Facts | Xerces Society. Available at https://xerces.org/blog/5-monarch-migration-facts. Accessed June 2025.

tended to avoid the UAV, typically altering their flight paths [21], and that bats do not appear to be disturbed by drones.[22] Also, the risk of bat conflicts is only present for three to six 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 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 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.

Bats could also be struck by a drone, particularly around dawn and dusk when foraging. 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 bats during operations, the likelihood of the drone striking a bat is low.

Based on 1) operations occurring mostly in an urban environment, 2) the altitude at which the drone flies in the en route phase (150 to 300 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 tricolored bat occurring in the action area, and 6) the low likelihood of the drone striking a bat, the FAA has determined the action *may affect, but is not likely to adversely affect*, the tricolored bat, the Indiana bat, the gray bat, and the northern long-eared bat. Any effects would be discountable (extremely unlikely to occur) or insignificant (not able to be meaningfully measured, detected, or evaluated).

Appendix B identifies the federally and state-listed threatened and endangered species that could occur in the Texas areas of operation. Given the habitat type and distribution required by state-listed species that may occur in the above-listed counties and due to the lack of suitable habitat in the action area, no effects to state-listed species or species habitat are anticipated.

The FAA's effect determinations for the federally listed species discussed are presented in **Table 3-3** below.

[21] 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

[22] August, T. and T. Moore. 2008. Autonomous Drones Are a Viable Tool for Acoustic Bat Surveys. Available: https://www.biorxiv.org/content/10.1101/673772v1.full.pdf. Accessed July 2023 and February 2024.

TABLE 3-3
EFFECTS DETERMINATION TABLE

Species	Common Name	Species Name	Federal Status	Effects Determination
Mammals	Tricolored Bat	*Permimyotis subflavus*	Proposed Endangered	*Not Likely to Adversely Affect (NLAA)*
Birds	Eastern Black Rail	*Laterallus jamaicensis ssp. Jamaicensis*	Threatened	*Not Likely to Adversely Affect (NLAA)*
	Golden-cheeked Warbler	*Setophaga chrysoparia*	Endangered	*Not Likely to Adversely Affect (NLAA)*
	Piping plover	*Charadrius melodus*	Threatened	*Not Likely to Adversely Affect (NLAA)*
	Rufa Red Knot	*Caliris canutus rufa*	Threatened	*Not Likely to Adversely Affect (NLAA)*
	Whooping Crane	*Grus americana*	Endangered	*Not Likely to Adversely Affect (NLAA)*
	Southwestern Willow Flycatcher	*Empidonax traillii extimus*	Endangered	*Not Likely to Adversely Affect (NLAA)*
	Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened	*Not Likely to Adversely Affect (NLAA)*
	Red Cockaded woodpecker	*Dryobates borealis*	Threatened	*Not Likely to Adversely Affect (NLAA)*
	Attwater's Greater Prairie-chicken	*Tympanuchus cupido*	Endangered	*Not Likely to Adversely Affect (NLAA)*
	Aplomado Falcon	*Falco femoralis septentrionalis*	Endangered	*Not Likely to Adversely Affect (NLAA)*
Insects	Monarch Butterfly	*Danaus plexippus*	Proposed Threatened	*No Effect*

Source: ESA, 2025.

3.3.3.3 Migratory Birds

Prime Air has stated to the FAA that it would monitor the operating area for any active Bald Eagle nests that may occur. Bald Eagle nests are typically very conspicuous, usually five to nine feet in diameter, with a vertical depth up to eight feet, and Prime Air should be able to visually identify any nests that may be present in the area.[23] Bald Eagles are usually seen near lakes, rivers, and marshes while foraging for fish or carrion. If nests are identified, Prime Air will establish an avoidance area such that there is 1,000 feet vertical and horizontal separation distance between the vehicle's flight path and the nest. The avoidance area will be maintained until the end of the breeding season in Texas (October - July).[24]

The Chimney Swift (*Chaetura pelagica*) is another BCC with a high probability within the operating area. Chimney Swifts typically do not perch on branches, but often make their nests within chimneys, hollow trees, and similar dark, sheltered areas.[25] It is possible that Chimney Swifts may be nesting within the

[23] USFWS Midwest Region: Identification of Large Nests. Available: https://www.fws.gov/program/eagle-management/eagle-permits. Accessed: January 2025.

[24] USFWS. Eagle Management. Available at: https://www.fws.gov/program/eagle-management/eagle-incidental-disturbance-and-nest-take-permits. Accessed December 2024.

[25] Tesas Parks and Wildlife Department Chimney Swift. Available at: https://tpwd.texas.gov/huntwild/wild/species/cswift/. Accessed February 2025.

operating area and that drone operations in close proximity could affect its nesting sites during its breeding nesting season (March 15 through August 25). While it is not expected that infrequent drone overflights would cause adverse effects to nesting or feeding Chimney Swifts, Prime Air would continually monitor the operating area for active Chimney Swift nesting sites and take avoidance measures if determined to be necessary by Prime Air.

The other BCC species identified in the IPaC official species list breed elsewhere or they are not likely to be nesting out in the open and within close proximity to human presence. These other BCC species typically nest in forests and riparian corridor environments that are not within close proximity to locations where the Prime Air drone would be completing its ascent and descent. Additionally, the drone's en route overflights are not expected to result in effects to any lifecycles of these species.

Due to the limited operating area and proposed number of daily operations, occasional drone overflights at approximately 180 to 377 feet AGL are not expected to impact critical lifecycles of wildlife species or their ability to survive.

In summary, the Proposed Action is not expected to cause any of the following impacts:

- A long-term or permanent loss of unlisted plant or wildlife species, i.e., extirpation of the species from a large action area;
- Adverse impacts to special status species (e.g., state species of concern, species proposed for listing, migratory birds, Bald and Golden Eagles) or their habitats;
- Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; or
- Adverse impacts on a species' reproductive success rates, natural mortality rates, non-natural mortality (e.g., road kills and hunting), or ability to sustain the minimum population levels required.

The FAA initiated Section 7 consultation with the USFWS on June 11, 2025, which included a single transmittal to several sub-offices under the Texas Coastal and Central Plains Ecological Services Field Office, including those that serve the Dallas-Fort Worth, Houston, Austin, El Paso, and San Antonio areas.

On June 17, 2025, the Austin sub-office issued a concurrence with the FAA's determination that the Proposed Action *may affect, but is not likely to adversely affect* the tricolored bat, golden-cheeked warbler, whooping crane, Southwestern willow flycatcher, yellow-billed cuckoo, and the Northern aplomado falcon. The Austin sub-office indicated that the piping plover and rufa red knot were excluded from consultation because the Proposed Action does not involve a wind energy project.

On July 2, 2025, the Fort Worth sub-office issued a concurrence with the FAA's determination that the Proposed Action *may affect, but is not likely to adversely affect* the golden-cheeked warbler and whooping crane within the action areas subject to this consultation.

On August 28, 2025, the Houston sub-office issued a concurrence with the FAA's determination that the Proposed Action *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.

Copies of all agency correspondence are provided in **Appendix B**.

3.4 Department of Transportation Act, Section 4(f) Resources

3.4.1 Definition of Resource and Regulatory Setting

Section 4(f) of the U.S. Department of Transportation (DOT) Act (codified at 49 U.S.C. § 303)) protects significant publicly owned parks, recreational areas, wildlife and waterfowl refuges, and public and private historic sites. Section 4(f) states that "… [the] Secretary of Transportation may approve a transportation program or project requiring the use of any publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance or land from a historic site of national, State, or local significance, only if there is no feasible and prudent alternative to the use of such land and the program or project includes all possible planning to minimize harm resulting from the use."

The word "use" can mean either a physical or constructive use. A physical use is the actual physical taking of a Section 4(f) property through purchase of land or a permanent easement, physical occupation of a portion or all of the property, or alteration of structures of facilities on the property. A "constructive" use does not require a physical taking of a Section 4(f) property. A constructive use would occur when a project would produce an effect, such as excessive noise, that would result in substantial impairment to a property to the degree that the activities, features, or attributes of the property that contribute to its significance or enjoyment are substantially diminished. The determination of use must consider the entire property and not simply the portion of the property being used for a proposed action.

The procedural obligations for Section 4(f) compliance are outlined in DOT Order 5610.1C, *Procedures for Considering Environmental Impacts*. Additionally, the FAA adheres to the regulations and guidance provided by the Federal Highway Administration (FHWA) when evaluating potential impacts on Section 4(f) properties.[26, 27] While these requirements are not obligatory for the FAA, they may be utilized as guidance to the extent that they are applicable.[28]

3.4.2 Affected Environment

The FAA used data from federal, state, and other publicly accessible sources to identify potential Section 4(f) resources within the study area. As listed in Table C-1 of **Appendix C**, the FAA identified a total of 716 properties that could meet the definition of a Section 4(f) resource, including public parks administered by city, county, township and state authorities. There are no national parks or wildlife or waterfowl refuges within the operating area. Historic and cultural resources are addressed by both Section 4(f) and the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. § 470, as amended), and are discussed further in **Section 3.5**. Additionally, the FAA requested assistance from national, state, city, and

[26] FHWA, July 20, 2012. Section 4(f) Policy Paper. Office of Planning, Environment and Realty Project Development and Environmental Review, Washington, DC. Available at: https://www.environment.fhwa.dot.gov/legislation/section4f/4fpolicy.aspx.

[27] 23 CFR Part 774, Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and historic Sites (Section 4(f)).

[28] Further details about the DOT Act and Section 4(f) can be accessed in 23 CFR Part 774 et seq.

county governments in identifying the appropriate stakeholders that likely have an interest in the project and its effects on Section 4(f) resources. The entities with Section 4(f) regulatory interest include:

- Bexar County
- City of Alamo Heights
- City of Austin
- City of Bellmead
- City of Beverly Hills
- City of Carrollton
- City of Clear Lake
- City of Cockrell Hill
- City of Converse
- City of Coppell
- City of Dallas
- City of Deer Park
- City of DeSoto
- City of Duncanville
- City of El Lago
- City of El Paso
- City of El Paso / PSB
- City of El Paso / UTEP
- City of El Paso/Trans Texas Audubon Society
- City of Euless
- City of Farmers Branch
- City of Fort Worth
- City of Glenn Heights
- City of Grand Prairie
- City of Grapevine
- City of Guadalupe
- City of Haslet
- City of Hewitt
- City of Horizon City
- City of Houston
- City of Hutchins
- City of Hutto
- City of Irving
- City of Jersey Village
- City of Justin
- City of Keller
- City of Kemah
- City of Kirby
- City of La Porte
- City of Lancaster
- City of Lewisville
- City of Live Oak
- City of Manor
- City of Martindale
- City of Meadows Place
- City of Pasadena
- City of Pflugerville
- City of Plano
- City of Red Oak
- City of Richmond
- City of Roanoke
- City of Robinson
- City of Round Rock
- City of Saginaw
- City of San Antonio
- City of San Elizario
- City of San Marcos
- City of Seabrook
- City of Shoreacres
- City of Socorro
- City of Southlake
- City of Stafford
- City of Sterling Knoll
- City of Sugar Land
- City of Taylor Lake Village
- City of Terrell Hills
- City of Universal City
- City of Waco
- City of Watauga
- City of Webster
- City of Wilmer
- City of Windcrest
- City of Woodway
- CNP Utility District
- County of Dallas
- County of Denton
- Dallas County
- Denton County
- Fort Bend County
- Galveston County
- Garden Oaks Maintenance Organization
- Harris County
- Harris County
- Montgomery County
- North Houston District
- Ponderosa Forest Maintenance Association

- Ponderosa Forest Utility District
- Town of Flower Mound
- Town of Highland Park
- Travis County
- US Army Corps of Engineers
- Willow Fork Drainage District
- Woodlands Corporation (leased to Montgomery County)

These organizations were informed of the Proposed Action and the opportunity to provide comments via the Notice of Availability, which was electronically distributed to them on August 15, 2025.

3.4.3 Environmental Consequences

3.4.3.1 No Action Alternative

Under the No Action Alternative, the FAA would not issue the approvals necessary to enable Prime Air to conduct commercial drone package delivery operations throughout the state of Texas. Accordingly, the No Action Alternative would not result in impacts on Section 4(f) properties.

3.4.3.2 Proposed Action

Under the Proposed Action, the FAA would approve Prime Air's OpSpecs amendment so that it can introduce drone package delivery operations by using the MK30 drone across the intended operating areas throughout Texas. There would be no physical use of Section 4(f) resources because the Proposed Action has no direct interaction with any resources on the ground. Constructive use could occur when a project would produce an effect, such as excessive noise, that would result in substantial impairment to a property where the features of that property are substantially diminished. However, as discussed in **Section 3.6**, the Proposed Action would not result in a significant increase in noise levels at any location within the action area. As further described in **Section 3.8**, the short duration of en route flights would minimize any potential for significant visual impacts. Therefore, the FAA has determined that *the Proposed Action would not cause substantial impairment, or direct* or *constructive use*, as defined in **Section 3.4.1**, to any of the Section 4(f) resources in the action areas.

3.5 Historical, Architectural, Archaeological, and Cultural Resources

3.5.1 Regulatory Setting

This section discusses historic, architectural, archaeological, and cultural resources within the action area. These resources reflect human culture and history in the physical environment, and may include structures, objects, and other features important in past human events. Cultural resources can also include characteristics of the physical environment such as natural features and biota that are important to traditional cultural practices and institutions.

The primary laws pertaining to the treatment of historic, architectural, archaeological, and cultural resources during environmental analyses are the *National Historic Preservation Act of 1966* (54 U.S.C. §§ 300101 *et seq*.), the *Archaeological Resources Protection Act* (16 U.S.C. §§ 470aa-470mm), and the *Native Graves Protection and Repatriation Act* (25 U.S.C. §§ 3001-3013).

Section 106 of the NHPA requires federal agencies with jurisdiction over a proposed federal action (referred to as an "undertaking" under the NHPA) to take into account the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (National Register). The term "historic properties" describes "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register" (36 CFR § 800.16(l)(1)).

As documented in the 1050.1 Desk Reference, the regulations implementing Section 106 require the FAA to consult with certain parties, such as the SHPO and the THPO of a Federally Recognized Indian Tribe pursuant to Section 1010(d)(2) of the NHPA. Consultation with THPO(s) occurs if an undertaking is occurring on tribal lands or if an undertaking's Area of Potential Effects (APE) is located outside tribal lands but include historic resources of religious and cultural significance to a tribe. The purpose of consultation is to identify potentially affected historic properties, assess effects to such properties, and seek ways to avoid, minimize, or mitigate any adverse effects on such properties. The agency also must provide an opportunity for public involvement (36 CFR § 800.1(a)). Consultation with Federally Recognized Indian Tribes regarding issues related to Section 106 must recognize the government-to-government relationship between the Federal Government and Native American tribes as set forth in Executive Order (EO) 13175, "*Consultation and Coordination with Indian Tribal Governments*" and the Presidential Memorandum on Tribal Consultation, dated November 5, 2009.

Consultation under Section 106 is not required if the undertaking has no potential to affect historic properties. The regulations implementing Section 106 state: "If the undertaking is a type of activity that does not have the potential to cause effects on historic properties, assuming such historic properties were present, the agency official has no further obligations under section 106 of this part." (36 CFR § 800.3(a)(1)).

As discussed in FAA Order 1050.1F, the FAA has not established a significance threshold for Historical, Architectural, Archaeological, and Cultural Resources. Whether an action would result in a finding of adverse effect through the Section 106 process is a consideration when assessing the significance of an impact. However, a finding that an adverse effect has occurred does not necessarily mean an impact is significant; nor would it necessarily require the preparation of an Environmental Impact Statement. Should an adverse effect be determined to have occurred, the Section 106 process would be resolved through a Memorandum of Agreement or Programmatic Agreement to record resolution measures to mitigate or minimize adverse effects.

3.5.2 Affected Environment

The analysis established 22 APEs pursuant to 36 CFR § 800.4(a), each encompassing approximately 175 square miles occurring within a 7.5-mile operating radius surrounding each PADCC. According to geospatial data published by the National Park Service, there are 424 historic resources listed in the National Register, 105 National Register-eligible resources, and 1,351 state-listed resources located in the APEs. The historic and cultural attributes of these sites are unlikely to be affected by drone overflights. Historic resources occurring within the APEs are listed in **Tables D-1** through **D-22** of **Appendix D**.

3.5.3 Environmental Consequences

3.5.3.1 No Action Alternative

Under the No Action Alternative, the FAA would not issue the approvals necessary to enable Prime Air to conduct drone commercial drone package delivery operations throughout Texas. As such, there would be no impact on any historical, architectural, archaeological, or cultural resources.

3.5.3.2 Proposed Project

The effect of drone operations on historic properties would be limited to non-physical, reversible impacts such as the introduction of audible and/or visual elements. The number of daily drone operations would be limited such that any historic or cultural resource would only be subject to a small number of overflights per day. Furthermore, as described in **Section 3.6**, a noise analysis concluded that noise levels would be below the FAA's threshold for significance, even in areas with the highest noise exposure.

For the Proposed Action, the FAA initiated consultation with the TX SHPO (the Texas Historical Commission [THC]) on May 19, 2025, seeking concurrence with the FAA's definition of the APEs and for its finding of *no adverse effects*. The THC concurred with the FAA's determination and issued a finding of *no adverse effects* on June 18, 2025. The THC noted that the HOU2 PADDC is located 1,000 feet east of the Houston National Cemetery, which was listed in the National Register of Historic Places in 2017. Because it is an exceptionally significant, highly noise-sensitive historic property, the THC recommends avoiding drone overflights in this area. Copies of the THC consultation are included in **Appendix D-1**.

The FAA also initiated consultation with Federally Recognized Indian Tribes (on May 15, 2025, via email, and on May 21, 2025, via regular mail), that may potentially attach religious or cultural significance to resources in the APEs, which include the following:

- Absentee Shawnee Tribe
- Alabama-Coushatta Tribe of Texas
- Alabama-Quassarte Tribal Town
- Apache Tribe of Oklahoma
- Caddo Nation
- Cherokee Nation
- Cheyenne & Arapaho Tribes
- Choctaw Nation
- Comanche Nation
- Coushatta Tribe of Louisiana
- Delaware Nation
- Jena Band of Choctaw Indians
- Jicarilla Apache Nation
- Kickapoo Tribe of Oklahoma
- Kiowa Indian Tribe
- Mescalero Apache Tribe
- Muscogee Nation
- Osage Nation
- Quapaw Nation
- Seminole Nation of Oklahoma
- Shawnee Tribe
- Thlopthlocco Tribal Town
- Tonkawa Tribe
- Tunica-Biloxi Tribe
- United Keetoowah Band of Cherokee Indians
- Wichita and Affiliated Tribes

- Kialegee Tribal Town
- Kickapoo Traditional Tribe of Texas
- Ysleta del Sur Pueblo

Copies of representative correspondence with potentially interested Tribal Governments are included in **Appendix D-2**.

3.6 Noise and Noise-Compatible Land Use

3.6.1 Regulatory Setting

Aircraft noise is often the most noticeable environmental effect associated with any aviation project. Several federal laws, including the Aviation Safety and Noise Abatement Act of 1979, as amended (49 U.S.C. §§ 47501-47507) regulate aircraft noise. Through 14 CFR Part 36, the FAA regulates noise from aircraft. To ensure that noise would not cause a significant impact to any residential land use or noise sensitive resource within the action area, the FAA initiated an analysis of the potential noise exposure in the area that could result from implementation of the Proposed Action.

FAA Order 1050.1F, Appendix B, Paragraph B-1.3 requires the FAA to identify the location and number of noise sensitive areas that could be significantly impacted by noise. As defined in FAA Order 1050.1F, Paragraph 11-5b, *a noise sensitive area* is "[a]n area where noise interferes with normal activities associated with its use. Normally, noise sensitive areas include residential, educational, health, and religious structures and sites, and parks, recreational areas, areas with wilderness characteristics, wildlife refuges, and cultural and historical sites."

Sound is measured in terms of the decibel (dB), which is the ratio between the sound pressure of the sound source and 20 micropascals, which is nominally the threshold of human hearing. Various weighting schemes have been developed to collapse a frequency spectrum into a single dB value. The A-weighted decibel, or dBA, corresponds to human hearing accounting for the higher sensitivity in the mid-range frequencies and reduced sensitivity for lower and highest frequencies. Unless otherwise noted, all sound levels discussed in this document should be understood to be A-weighted.

To comply with NEPA requirements, the FAA has issued requirements for assessing aircraft noise in Appendix B of FAA Order 1050.1F. The FAA's primary noise metric for aviation noise analysis is the yearly Day-Night Average Sound Level (DNL) metric. The DNL metric is a single value representing the logarithmically averaged aircraft sound level at a location over a 24-hour period, with a 10 dB adjustment added to those noise events occurring from 10:00 P.M. to 7:00 A.M. A significant noise impact is defined in FAA Order 1050.1F as an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure or a noise exposure at or above the 65 dB level due to a DNL 1.5 dB or greater increase at a noise sensitive receiver (e.g. residential).

3.6.2 Affected Environment

As shown in **Figures A-23** through **A-44** in **Appendix A-1**, each drone operating area covers approximately 175 square miles, and the estimated population is roughly 7,500,000 for all operating

areas. The estimated population and population density for each PADDC operating area are summarized in **Table 3-4**.[29]

TABLE 3-4
MK30 OPERATING RANGE POPULATION SUMMARY BY PADDC

PADDC	Total Population	Population Density (People/Sq. Mile)
AUS2	431,144	2,468.4
AUS3	193,128	1,105.7
DAL3	677,363	3,878.0
DFW7	308,882	1,768.4
ELP1	388,451	2,223.9
FTW4	237,248	1,358.3
HOU2	701,480	4,016.1
HOU6	619,814	3,548.5
IAH1	342,610	1,961.5
SAHx	905,317	5,183.1
SAH1	580,642	3,324.3
SAT1x	422,566	2,419.3
SAT2	102,273	585.5
SAT3	355,840	2,037.2
STX2	674,918	3,864.0
STX3	699,795	4,006.4
STX4	322,322	1,845.3
STX5	758,700	4,343.7
STX6	515,138	2,949.2
STX7	510,804	2,924.4
STX8	739,407	4,233.2
STX9	389,223	2,228.4

Source: US Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

There are 30 airports and 124 heliports located in the proposed drone operating areas, as listed in **Table 3-5**.[30]

[29] US Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

[30] It is necessary to evaluate the cumulative noise exposure in areas subject to other aviation noise sources.

TABLE 3-5
AIRPORTS AND HELIPORTS WITHIN EACH DRONE OPERATING AREA

FAA Identifier	Name	Facility Type	PADDC Operations Area(s)	Airspace Classification
1XS5	Austin Diagnostic Medical Center	Heliport	AUS2, STX6	-
9TA0	Aero	Heliport	AUS2, STX6	-
EDC	Austin Executive	Airport	AUS2, STX6, STX9	D
1XS6	Hillcrest Baptist Hospital	Heliport	AUS3	-
5TA2	Rabbit Run	Airport	AUS3	Private, G
60XS	Young Brothers	Heliport	AUS3	-
7TX1	Providence Health Center	Heliport	AUS3	-
TA04	Sheriff Department	Heliport	AUS3	-
TA72	Hillcrest Baptist Medical Center	Heliport	AUS3	-
TE17	Heathrow	Airport	AUS3	Private, G
XA51	Smith	Airport	AUS3	Private, G
TX53	Police H Port-Redbird	Heliport	DAL3, IAH1	-
9TS8	Dallas Rehabilitation Institute	Heliport	DAL3, STX2, STX3	-
0XA0	Parkland Hospital Nr 2	Heliport	DAL3, STX3	-
19XA	Baylor Medical Center Irving	Heliport	DAL3, STX3	-
49T	Dallas CBD Vertiport	Heliport	DAL3, STX3	-
53TX	Barsons Utilities	Heliport	DAL3, STX3	-
9TA4	Placid	Heliport	DAL3, STX3	-
9TX8	Infomart	Heliport	DAL3, STX3	-
DAL	Dallas Love Field	Airport	DAL3, STX3	B
RBD	Dallas Executive Airport	Airport	DAL3, STX3	D
TA37	Belo Broadcasting	Heliport	DAL3, STX3	-
TA40	Dallas City Hall	Heliport	DAL3, STX3	-
TE22	Texas Scottish Rite Hospital For Children	Heliport	DAL3, STX3	-
TE43	Parkland Health & Hospital System	Heliport	DAL3, STX3	-
TX18	Redmond Taylor Ahp	Heliport	DAL3, STX3	-
TX55	Southland Center	Heliport	DAL3, STX3	-
XA62	Methodist Dallas Medical Center	Heliport	DAL3, STX3	-
5TX9	Parkway Surgical Hospital	Heliport	DFW7	-
T67	Hicks Airfield	Airport	DFW7	G
3XS7	Bell Training Facility	Heliport	DFW7, FTW4	-
4TX2	Stage Coach Hills	Airport	DFW7, FTW4	Private, G
7TX4	Hillcrest	Airport	DFW7, FTW4	Private, D
AFW	Perot Field/Fort Worth Alliance	Airport	DFW7, FTW4	D
TX65	Beechwood	Heliport	DFW7, FTW4	-
XS96	Hillwood	Heliport	DFW7, FTW4	-
03XA	Del Sol Medical Center	Heliport	ELP1	-
27TE	Sierra Providence Hospital	Heliport	ELP1	-

FAA Identifier	Name	Facility Type	PADDC Operations Area(s)	Airspace Classification
0TA3	Texas Health Methodist Alliance	Heliport	FTW4	-
0TS1	Dooley	Airport	FTW4	Private, G
0TS2	Ultralight International Ultralight Flightpark	Airport	FTW4	D
16X	Propwash	Airport	FTW4	G
26XA	Solana North	Heliport	FTW4	-
3TX2	Flying S Farm	Airport	FTW4	G
52F	Northwest Regional	Airport	FTW4	G
TA92	HDC1	Heliport	FTW4	-
XA49	Blue Jay Airfield	Airport	FTW4	Private, G
XS05	Freedom	Airport	FTW4	Private, G
4XA7	Baylor Health Center At Irving Coppell	Heliport	FTW6, STX2	-
80TE	Opela	Heliport	FTW6, STX2	-
TE79	HIG	Heliport	FTW6, STX2	-
XA21	Las Colinas Medical Center	Heliport	FTW6, STX2	-
22XA	General Plumbing Contractors	Heliport	HOU2	-
26TE	Parkview Center Hospital	Heliport	HOU2	-
62TS	Gateway Helistop	Heliport	HOU2	-
9TA9	Delta Mechanical Inc	Heliport	HOU2	-
IAH	George Bush Intercontinental/Houston	Airport	HOU2	B
42TS	Papa	Heliport	HOU2, SAH1	-
4TS4	Palm Petroleum Corporation	Heliport	HOU2, SAH1	-
67TS	Aldine	Heliport	HOU2, SAH1	-
84TA	Allied Northborough	Heliport	HOU2, SAH1	-
9XS8	Goodson Honda	Heliport	HOU2, SAH1	-
TA95	Houston Northwest Medical Center	Heliport	HOU2, SAH1	-
1XA9	Life Flight North Fuel	Heliport	HOU2, STX5	-
4TS2	Wilshire Place	Heliport	HOU2, STX5	-
97TA	Hickory Hollow	Heliport	HOU2, STX5	-
TS99	Action Nr 2	Heliport	HOU2, STX5	-
SGR	Sugar Land Rgnl	Airport	HOU6	D
TE69	Oak Bend Medical Center	Heliport	HOU6	-
59TA	Kaneb	Heliport	HOU6, SAHx	-
68TA	Avsi-Sugar Land	Heliport	HOU6, SAHx	-
83XS	Ball Park	Heliport	HOU6, SAHx	-
12T	Ferris Red Oak Municipal	Heliport	IAH1	-
6TA3	Culp	Airport	IAH1	Private, G
LNC	Lancaster Regional	Airport	IAH1	G
7TS6	Strack Farms	Heliport	SAH1	-
0TS6	Harris County Courthouse	Heliport	SAHx	-

FAA Identifier	Name	Facility Type	PADDC Operations Area(s)	Airspace Classification
12TA	Channel Two	Heliport	SAHx	-
1TS5	Sugar Grove	Heliport	SAHx	-
31TE	Tenneco Lab Helistop	Heliport	SAHx	-
33TE	Sw Police Station Nr 4	Heliport	SAHx	-
42TE	Chi St. Lukes Hospital	Heliport	SAHx	-
44XS	Prudential	Heliport	SAHx	-
45TA	SPL	Heliport	SAHx	-
56XS	G H Hart Nr 2	Heliport	SAHx	-
6TA6	B & S Warehouse	Heliport	SAHx	-
7XS4	Durwood Greene Construction Company	Heliport	SAHx	-
7XS8	Lift Crane	Heliport	SAHx	-
7XS9	Pearce Industries	Heliport	SAHx	-
TE11	Life Flight/Refuel	Heliport	SAHx	-
TS17	First Bank Plaza Garage	Heliport	SAHx	-
TS24	Westchase	Heliport	SAHx	-
TS86	Community Hospital	Heliport	SAHx	-
TS98	Meml Hermann Southwest Hospital	Heliport	SAHx	-
XS26	Graco Mechanical Inc	Heliport	SAHx	-
36XA	Central Texas Medical Center Hospital	Heliport	SAT2	-
7TS2	Alison Air Park	Airport	SAT2	Private, D
HYI	San Marcos Regional	Airport	SAT2	D
24XA	Cross-B	Airport	SAT3	Private, G
2XA6	Red Berry	Heliport	SAT3, STX7, SAT1x	-
50TS	TJ-CJ Private	Heliport	SAT3, STX7, SAT1x	-
MDA	Martindale Ahp	Heliport	SAT3, STX7, SAT1x	-
T22	Charles L Kelly AHP	Heliport	SAT3, STX7, SAT1x	-
XA28	Adkins	Heliport	SAT3, STX7, SAT1x	-
XS84	Department Of Public Safety	Heliport	SAT3, STX7, SAT1x	-
4XS4	Baylor Medical Center At Carrollton	Heliport	STX2	-
9TS9	Toyota Of Dallas Inc	Heliport	STX2	-
ADS	Addison	Airport	STX2	D
F69	Air Park-Dallas	Airport	STX2	D
XA61	Baylor University Medical Center Dallas	Heliport	STX3	-
XS97	Methodist Charlton Medical Center	Heliport	STX3	-
1TA0	Fina Bayport	Heliport	STX4	-
3XA5	Christus St. John Hospital	Heliport	STX4	-
42TA	Rental Tools	Heliport	STX4	-
52XS	Clear Lake Rgnl Medical Center	Heliport	STX4	-
72TX	Johnson Space Center	Heliport	STX4	-

FAA Identifier	Name	Facility Type	PADDC Operations Area(s)	Airspace Classification
7TX6	Kemah Waterfront	Heliport	STX4	-
EFD	Ellington Field	Airport	STX4	D
T41	La Porte Municipal	Airport	STX4	G
XS16	San Jacinto College Central Campus	Heliport	STX4	-
10TA	Bear Creek	Heliport	STX5	-
11TA	Conoco	Heliport	STX5	-
21TA	Cypress Fairbanks Medical Center	Heliport	STX5	-
22TS	Gray Steel	Heliport	STX5	-
36TE	Nw Police Station Nr 5	Heliport	STX5	-
38TA	Kurio	Heliport	STX5	-
38TS	Steeplechase	Heliport	STX5	-
39TS	Hearthstone	Heliport	STX5	-
4TS6	State Police	Heliport	STX5	-
80TA	Porta-Kamp 12Th Street	Heliport	STX5	-
87TS	Star Houston	Heliport	STX5	-
8TS4	Memorial City General Hospital	Heliport	STX5	-
TA45	Eckels	Heliport	STX5	-
TE53	Spring Branch Medical Center	Heliport	STX5	-
TS34	Woodcreek-Shell	Heliport	STX5	-
TS37	Harris County Clay Road Courthouse	Heliport	STX5	-
TS81	Town & Country	Heliport	STX5	-
XA20	Landry's Warehouse	Heliport	STX5	-
04TS	Hummingbird	Heliport	STX6	-
09XS	Baptist Medical Center	Heliport	STX7	-
77TE	Rowco, Inc	Heliport	STX7	-
XS81	Santa Rosa Helistop	Heliport	STX7	-
XS82	Del Rio	Heliport	STX7, SAT1x	-
0XS4	EDS	Heliport	STX8	-
15TS	Owens Country Sausage	Heliport	STX8	-
6TS9	MCP	Heliport	STX8	-
T57	Garland/DFW Heloplex	Heliport	STX8	-
TX60	T I Company	Heliport	STX8	-
TX76	Bmcg	Heliport	STX8	-
TX91	Madeira Airpark	Airport	STX8	G
XA40	Richardson Regional - Bush Highway	Heliport	STX8	-
3XA6	Dell Children's Medical Center	Heliport	STX9	-
TE94	Starflight Facility	Heliport	STX9	-
TX05	Bud Dryden	Airport	STX9	Private, C

Source(s): ESRI, 2023; Texas Department of Transportation; 2023.

3.6.3 Environmental Consequences

3.6.3.1 No Action Alternative

Under the No Action Alternative, the FAA would not issue the approvals necessary to enable Prime Air to conduct commercial drone package delivery operations in Texas. As such, no impacts to compatible land use would occur.

3.6.3.2 Proposed Action

Human perception of noise depends on a number of factors, including overall noise level, number of noise events, the extent of audibility above the background, ambient noise level, and acoustic frequency content (pitch).[31] Drone noise generally has high-frequency acoustic content, which can often be more discernable from other typical noise sources.

To ensure that noise would not cause a significant impact to any noise sensitive area within the action area, the FAA initiated an analysis of the potential noise exposure in the area that could result from implementation of the Proposed Action. Except for on the actual PADDC property, the rural, commercial, and residential properties that are adjacent to the PADDC are likely to experience the highest noise levels as a result of the Proposed Action. This is due to noise from drone departures from and arrivals to the PADDC, as well as more concentrated en route noise from the aircraft transiting to and from the PADDC.

Noise Exposure

Utilizing the operational projections defined in **Chapters 1** and **2**, the FAA-approved noise analysis methodology detailed in **Appendix E-1** was used to estimate DNL levels for the proposed Texas operations. Noise levels were calculated for each flight phase and are presented in the following three sub-sections:

- Noise Exposure for PADDC Operations
- Noise Exposure for En route Operations
- Noise Exposure for Delivery Operations

Noise Exposure for PADDC Operations

Based on the anticipated average daily maximum of 1,000 deliveries provided by Prime Air for each PADDC, the extent of noise exposure associated with PADDC operations are shown in **Figures E-1** through **E-22** in **Appendix E-2**. This region was determined based on a review of the layout of the PADDC locations and using the noise level information presented in **Table 6** of the Technical Noise Report in **Appendix E-1**. **Table 3-6** provides the extent of noise exposure for PADDC operations for the DNL 65 dB and lower noise levels. Note that the data presented in **Table 3-6** only includes noise exposure associated with PADDC operations. For discussion on cumulative noise with other aviation noise sources, please see **Chapter 4**.

[31] Federal Aviation Administration, Fundamentals of Noise and Sound. Available: https://www.faa.gov/noise/aviation_noise/fundamentals_of_noise. Accessed: April 30, 2024.

TABLE 3-6
ESTIMATED EXTENT OF NOISE EXPOSURE FROM EACH PADDC

Annual Average Daily DNL Equivalent Deliveries	Annual DNL Equivalent Deliveries	DNL 50 dB	DNL 55 dB	DNL 60 dB	DNL 65 dB
≤1,000	≤365,000	600 feet	300 feet	150 feet	100 feet

Source: ESA, 2025.

Noise Exposure for En route Operations

As described in the Technical Noise Report in **Appendix E-1**, the drone is expected to typically fly the same outbound flight path between the PADDC and the delivery point and inbound flight path back to the PADDC. While the average daily deliveries from each PADCC would be 1,000, the number of overflights in a day would be dispersed because the PADCCs are centrally located in the proposed operating areas and delivery locations would be distributed throughout the proposed operating areas. A conservative estimate for the maximum number of overflights over any one location is not expected to exceed half of the projected daily deliveries, or 500 deliveries. Since each delivery involves both an outbound and inbound flight path, this equates to 1,000 daily overflights. It was conservatively assumed that when two or more MK30 drone operating areas overlap, overflights associated with an additional 500 daily deliveries would be estimated, per operating area overlap. The en route noise exposure can be determined by referencing **Tables 7** and **8** of the Technical Noise Report in **Appendix E-1**. This analysis shows that en route noise levels could reach DNL 43 dB in any location within the action area. For areas with two or three overlapping operating areas, the estimated en route noise levels could reach 46 dB and 48 dB, respectively.[32]

Noise Exposure for Delivery Operations

Due to the inherent uncertainty of the exact delivery site locations, the noise analysis developed a minimum and maximum representative distribution of deliveries in each action area. The noise analysis conservatively assumes the minimum and maximum distribution of average daily deliveries that could occur at a single delivery location. The distribution of average annual daily deliveries ranges from one to four deliveries per operating day.

The noise exposure for delivery operations also includes outbound and inbound en route overflights at the typical operating altitude of 200 and 345 feet AGL, respectively, for operations associated with deliveries to other locations. The outbound en route altitude 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.

A conservative estimate of delivery noise exposure can then be determined by referencing **Table 9** of the Technical Noise Report in **Appendix E-1**. The estimated delivery DNL includes values at the minimum and maximum distribution of DNL equivalent deliveries at various distances from the delivery point. They include the minimum listener distance from the delivery point at 16.4 feet, which is representative of the closest distance a person may approach before the aircraft takes automated actions to safely cancel the delivery. This is in addition to the minimum measured distance from the drone for which noise

[32] Technical Noise Report Table 7 (Appendix E) provides overflight DNL calculations for up to 1,000 daily deliveries. For areas with three PADDC operating area overlaps, Technical Noise Report Table 8 should be applied for the estimate en route noise, including both outbound and inbound overflights at their respective altitudes.

measurement data was available for a delivery, which is 25 feet. Values were also calculated at distances of 50 feet, 75 feet, 100 feet, and 125 feet from the delivery point, and are representative of distances from which nearby properties may experience noise from a delivery based on the average lot size for sold homes as reported in the 2022 US Census.[33] The noise exposure for any one delivery point (with en route noise as mentioned above) is provided in **Table 3-7**. The noise exposure is depicted over the PADDC but is only representative of a maximum of five deliveries at any one delivery point.

Table 3-7 shows that, with the maximum number of average annual daily deliveries at a single location, including overflights, noise levels up to DNL 49 dB could extend up to 125 feet from the delivery location and may reach adjacent properties. However, these noise levels would not exceed the FAA's significance threshold for noise of DNL 65 dB in any of the areas where Prime Air anticipates conducting deliveries.

TABLE 3-7
DNL FOR DELIVERY LOCATIONS BASED ON MAXIMUM DELIVERIES PER LOCATION

Operating Area Overlaps	Average Daily DNL Equivalent Deliveries	Annual DNL Equivalent Deliveries	Estimated Delivery DNL at 16.4 Feet[1]	Estimated Delivery DNL at 25 Feet[2]	Estimated Delivery DNL at 50 Feet	Estimated Delivery DNL at 75 Feet	Estimated Delivery DNL at 100 Feet	Estimated Delivery DNL at 125 Feet
0[3]	≤5	≤1,825	52.5	50.6	47.7	46.3	45.2	44.6
1[4]	≤5	≤1,825	53.0	51.3	49.0	48.0	47.3	46.9
2[5]	≤5	≤1,825	53.5	52.0	50.1	49.3	48.8	48.6

Notes:

1. Minimum possible listener distance from drone.
2. Minimum measured listener distance.
3. Assumes conservative estimate of overflights associated with 500 deliveries, or 1,000 overflights, over any one delivery location as mentioned above.
4. Assumes conservative estimate of overflights associated with 1,000 deliveries or 2,000 overflights, over any one delivery location as mentioned above.
5. Assumes conservative estimate of overflights associated with 1,500 deliveries or 3,000 overflights, over any one delivery location as mentioned above.

Source: ESA, 2025.

Total Noise Exposure Results

The maximum noise exposure levels within the action area would occur at the PADDC site where noise levels at or above DNL 50 dB would extend approximately 600 feet from each PADDC. Noise levels at or above DNL 65 dB would extend approximately 100 feet from the PADDC, although this is within the PADDC property. In at least one case, residential land use falls within the DNL 55 contour, making it the only PADDC location where homes are located within that noise exposure level.

Additionally, the estimated noise exposure for en route operations could reach up to DNL 43 dB at any location within any action area. When two or three PADDC operating areas overlap, the estimated en route noise is DNL 46 dB and 48 dB, respectively. Furthermore, the estimated noise exposure for delivery operations, including en route overflights, would not have the potential to exceed DNL 54 dB at any location in the action area and is below the FAA's threshold of significance for noise.

[33] The 2022 US Census national average lot size for single-family sold homes was 15,265 square feet. This is representative of a property with dimensions of a 123.55 x 123.55-foot square. 125 feet represents a 125-foot lateral width of the parcel rounded up to the nearest 25 feet. Available: https://www.census.gov/construction/chars/xls/soldlotsize_cust.xls. Accessed: January 18, 2024.

As explained in **Section 3.6.1** above, the FAA has an established noise significance threshold, defined in FAA Order 1050.1F, which is used when assessing noise impacts in a particular action area. A significant noise impact is defined as an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure or a noise exposure at or above the 65 dB level due to a DNL 1.5 dB or greater increase. Based on the results of the noise analysis performed for this EA, the DNL 65 dB contour is expected to extend approximately 100 feet from the launch pads and be contained within each PADDC property. Thus, noise impacts from operations are not expected to result in a significant impact. Nor is the noise generated by the operations expected to be incompatible with noise sensitive resources within the action area. The resulting noise exposure for delivery site locations at a distance of 25 feet between drone and receiver is DNL 52 dB. Noise exposure from deliveries includes the outbound en route overflight of 200 feet AGL and inbound en route overflight at 345 feet AGL, as modeled in **Appendix E-1**. The maximum noise exposure at any residential-zoned property line would not be expected to exceed DNL 54 dB. In one instance, residential-zoned property falls approximately 50 feet within the DNL 55 dB contour; however, both remain well below the FAA's DNL 65 dB significance threshold.

Residential areas within the DNL 55 dB noise contour remain eligible for drone delivery service. To maintain operational consistency and navigational safety, drones follow a standard flight profile during departure, delivery, and return to the PADDC. For example, when serving locations within the DNL 55 dB, the drone follows a complete outbound trajectory before initiating delivery, and an inbound trajectory before returning to the PADDC.

In such areas, the maximum possible noise exposure generated by the number of deliveries and associated overflights is estimated to be DNL 53.5 dB at 16.4 feet. When combined with the noise exposure for PADDC operations, the total cumulative noise level may reach up to DNL 57.3 dB. This combined level remains well below the FAA's significance threshold of DNL 65 dB, confirming that drone operations would not introduce a significant noise impact at residential areas near PADDC locations.

3.7 Visual Effects (Visual Resources and Visual Character)

3.7.1 Regulatory Setting

Visual resources and visual character impacts deal with the extent to which the Proposed Action would result in visual impacts to resources in the operating area. Visual impacts can be difficult to define and evaluate because the analysis is generally subjective but are normally related to the extent that the Proposed Action would contrast with, or detract from, the visual resources and/or the visual character of the existing environment. In this case, visual effects would be limited to the introduction of a visual intrusion – a drone in flight – which could be out of character with the suburban or natural landscapes.

The FAA has not developed a visual effects significance threshold. Factors the FAA considers in assessing significant impacts include the degree to which the action would have the potential to: (1) affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources; (2) contrast with the visual resources and/or visual character in the action area; or (3) block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations.

3.7.2 Affected Environment

The Proposed Action would take place over a combination of suburban and rural properties. As noted in **Section 3.4**, there are public parks that could be valued for aesthetic attributes within the Action Areas. Prime Air's proposal is to avoid overflights of large open-air gatherings of people during the scope of the Proposed Action, which includes public parks and other public properties that may be covered under Section 4(f) (which are identified in **Appendix C**).

3.7.3 Environmental Consequences

3.7.3.1 No Action Alternative

Under the No Action Alternative, the FAA would not issue the approvals necessary to enable Prime Air to conduct drone commercial drone package delivery operations in Texas. As such, there would be no visual impacts associated with the No Action Alternative.

3.7.3.2 Proposed Action

The Proposed Action makes no changes to any landforms or land uses, and visual effects would be short-term in nature; thus, there would be no effect to the visual character of the area. Excluding ground-based activities supporting the drones, operations would be occurring in airspace only. The FAA estimates that at typical operating altitude and speeds the drone en route would be observable for approximately 3.6 seconds by an observer on the ground. The Proposed Action involves airspace operations that are unlikely to result in visual impacts anywhere in the Action areas, including Section 4(f) properties. The short duration that each drone flight could likely be seen from most of the resources in the operating area – approximately 3.6 seconds while the drone is traveling en route at 52.4 knots (approximately 60 mph) – and the distribution of flights throughout each 175-square mile operating area, would minimize any potential for significant visual impacts at any location in the action areas. Any visual effects are expected to be similar to existing air traffic in the vicinity of the operating areas. Therefore, *the Proposed Action would not result in significant visual impacts*.

CHAPTER 4
Reasonably Foreseeable Effects

Consideration of reasonably foreseeable impacts applies to the effects resulting from implementing the Proposed Action along with other actions. FAA Order 1050.1F defines reasonably foreseeable impacts as "*effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Reasonably foreseeable effects can result from individually minor but collectively significant actions taking place over a period of time."* FAA NEPA policies and procedures underscore the need to assess environmental consequences in a broader, long-term context, accounting for anticipated developments alongside existing conditions.

Per FAA Order 1050.1F,[34] if any "airspace or procedure actions" are introduced, these actions must be assessed to determine if any of the following increases result from the action:

- For DNL 65 dB and higher: ± 1.5 dB
- For DNL 60 dB and higher: ± 3 dB[35]
- For DNL 45 dB to < 60 dB: ± 5 dB[35]

FAA Order 1050.1F defines a "significant impact" as an action that results in ±1.5 dB change within the DNL 65 noise exposure contour over a noise sensitive land use. A "reportable" change is a ±3 dB change within the DNL 60 or a ±5 dB change within the DNL 45.

As most of the potential impacts discussed in Chapter 3, *Affected Environment and Environmental Consequences*, were found to be minimal and given that drone operations are unlikely to interact with other outside actions due to the short duration of flights, the Proposed Action's contribution to reasonably foreseeable impacts in the drone operational areas would primarily be associated with noise. Thus, this section will focus on the Proposed Action's potential reasonably foreseeable noise impacts on the environment.

Because drone operations would occur in areas subject to other aviation noise sources, it is necessary to evaluate the reasonably foreseeable noise exposure that would result from introducing the other aviation noise sources present. Examples of such scenarios are drone operations occurring in the vicinity of Prime Air's operating areas with increased aviation activity (e.g., where other commercial drone operators may operate or operations close to airports). Aircraft-related noise sources are most likely to be the dominant

[34] https://www.faa.gov/documentlibrary/media/order/faa_order_1050_1f.pdf.

[35] The FAA considers these increases to be "reportable," but not a significant impact.

contributors to noise exposure near airports. By comparison, other sources of noise would not appreciably contribute to overall noise levels at these locations.

As discussed in **Section 3.6.2**, there are 30 airports and 124 heliports located in the proposed areas of operations. For areas where the drone operating area does not overlap with any Class B or Class D airspace, there would be little potential for the reasonably foreseeable effect of traditional aircraft noise combined with drone noise. For areas near or within the control surfaces of Class B or Class D airspace, a conservative estimate of DNL 50.1 dB serves as the threshold for which a reportable change of 5 dB would occur, as defined by FAA requirements for areas where DNL falls between 45 dB and less than 60 dB. While this increase may be perceptible, it is unlikely to result in significant adverse land use impacts.

TABLE 4-1
REASONABLY FORESEEABLE NOISE EXPOSURE

Noise Source	Description	DNL (dB)	Energy $10^{(DNL/10)}$	Combined Noise Sources in DNL (dB)
1	Proposed Action[1]	53.5	223,872.1	-
2	Airports within Study Area	50.1	102,329.3	-
1+2	Proposed Action + Airports	-	326,201.4	55.1
Delta	Reasonably Foreseeable Change in Noise Exposure	-	-	5.0

Notes:
1. Proposed Action DNL based off exposure at delivery site location with two operating area overlaps to assume conservative estimates.
Source: ESA, 2025.

As mentioned in **Section 3.6.3.2**, residential land use falls within the DNL 55 contour of at least one site, making it the only PADDC location where there are any homes located within the DNL 55 contour. In such areas, the maximum possible noise exposure generated by the number of deliveries and associated overflights is estimated to be DNL 53.5 dB at 16.4 feet. When combined with the noise exposure for PADDC operations, the total cumulative noise level may reach up to DNL 57.3 dB. This combined level remains well below the FAA's significance threshold of DNL 65 dB, confirming that drone operations would not introduce a significant noise impact at residential areas near PADDC locations. Additionally, since this location does not overlap with any Class B or Class D airspace, it is unlikely to result in significant adverse land use impacts when combined with traditional aircraft noise.

Additionally, Prime Air's flight route planning software would take into account air traffic to avoid dense airspace restrictions, such as airport runways and heliports. This would help avoid potential noise reasonably foreseeable effects with other air traffic near Class B and Class C airspace. There are several Part 135 commercial drone package delivery operators known to be conducting operations in Texas, including DroneUp, LLC, Zipline International Inc., and Wing Aviation, LLC. These operators may conduct commercial drone delivery service in proximity to Prime Air's proposed MK30 operations areas or the PADDCs, which are located in areas zoned for commercial activities. However, the addition of Prime Air's commercial delivery service is not expected to result in reasonably foreseeable effects on other potential Part 135 commercial drone operations. Any future Part 135 operators would be required to work with the FAA to complete an environmental review before beginning operations, ensuring that any

potential reasonably foreseeable effects are properly analyzed and disclosed, and the appropriate siting of potential drone operating facilities would be considered to avoid a significant impact on the environment.

In the future, other drone operators may propose locating operations within this Proposed Action's action areas. Should that occur, Prime Air understands the potential for impacts may increase due to another operator's activities and would work with that operator and the FAA to mitigate potential impacts. Additionally, the FAA would conduct a new environmental analysis – including noise and reasonably foreseeable impacts – prior to another operator beginning drone package delivery operations in these areas.

As discussed in Chapter 3, the Proposed Action is not expected to significantly impact any of the environmental impact categories. Areas of existing aviation noise sources within the Action areas would be avoided; thus, the Proposed Action would not contribute to significant reasonably foreseeable noise impacts. No other actions are anticipated to interact with the Proposed Action in a way that could result in reasonably foreseeable effects; therefore, *the Proposed Action is not expected to result in significant reasonably foreseeable effects*.

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CHAPTER 5
List of Preparers and Agencies Consulted

5.1 Preparers

Name and Affiliation	Years of Industry Experience	EA Responsibility
FAA Evaluators		
Christopher Hurst REM, CEA, CESCO, FAA AFS (Office of Safety Standards, Flight Standards Service) General Aviation Operations	20	Environmental Protection Specialist, Document Review
Christopher Couture, FAA AQS (Aviation Safety, Quality, Integration, and Executive Services)	17	Environmental Protection Specialist, Document Review
Jonathan Delaune, FAA AFS Office of Safety Standards, Flight Standards Service) General Aviation Operations	20	Environmental Protection Specialist, Document Review
Susumu Shirayama, FAA AEE (Office of Environment and Energy, Noise Division [AEE-100])	22	Environmental Protection Specialist, Noise Analysis and Document Review
Preparers		
Mike Arnold/ESA	34	QA/QC review
Sean Burlingame/ESA	17	NEPA documentation
Patricia Davis/ESA	4	NEPA documentation
Patrick Hickman/ESA	14	NEPA documentation
Sarah McAbee/ESA	16	NEPA documentation
Scott McIntosh/ESA	12	Noise modeling
Chris Nottoli/ESA	10	Noise modeling
Brendon Quinton/ESA	8	NEPA documentation
Susan Shaw/ESA	23	NEPA documentation
Neal Wolfe/ESA	23	Project Manager, NEPA documentation

5.2 Agencies Consulted

List of Agencies Consulted
U.S. Fish and Wildlife Service
Texas Historical Commission
Texas General Land Office

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