Federal Aviation Administration

Draft Environmental Assessment for Amazon Prime Air Package Delivery in Florida

March 2026

DEPARTMENT OF TRANSPORTATION | Federal Aviation Administration
Washington, D.C.

Notice of Availability, Notice of Public Comment Period, and Request for Comment on the Draft Environmental Assessment for Amazon Prime Air Package Delivery Operations in Florida

The Federal Aviation Administration (FAA) provides notice that a Draft Environmental Assessment (EA), prepared pursuant to the National Environmental Policy Act (NEPA) (42 United States Code §§ 4321–4355), to assess Amazon Prime Air's proposed commercial drone delivery service in the state of Florida is available for review and comment.

Amazon Prime Air is seeking to amend its air carrier Operation Specifications (OpSpecs) and other FAA approvals necessary to expand commercial drone delivery operations in Florida. The FAA's approval of the amended OpSpecs is considered a major federal action under NEPA and requires a NEPA review. The Draft EA is submitted for review pursuant to NEPA, FAA Order 1050.1G, *FAA National Environmental Policy Act Implementing Procedures*, Section 4(f) of the Department of Transportation Act (49 U.S.C. § 303), and Section 106 of the National Historic Preservation Act (16 U.S.C. § 470). The Draft EA will be available for a 30-day public review beginning on March 10, 2026, and ending on April 8, 2026.

The Draft EA is available for online review at https://www.faa.gov/uas/advanced_operations/nepa_and_drones

Comments on the Draft EA may be submitted electronically to 9-faa-drone-environmental@faa.gov. Written comments may be submitted via U.S. Mail to the address below. Please ensure adequate time for receipt. All comments must be received by 5 p.m. Central time on April 8, 2026.

Federal Aviation Administration, Suite 802W
c/o AVS Environmental
800 Independence Ave SW
Washington, DC 20591

All substantive comments received will be responded to in the Final EA.

PRIVACY NOTICE: Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

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

Responsible FAA Official:

_____ Date: _____

Derek Hufty
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DEPARTAMENTO DE TRANSPORTACIÓN | Administración Federal de Aviación Washington, D.C.

Aviso de Disponibilidad, Aviso de Período de Comentarios Públicos, y Solicitud de Comentarios sobre el Borrador de la Evaluación Ambiental para las Operaciones de Entrega de Paquetes de Amazon Prime Air en Florida.

La Administración Federal de Aviación (FAA, por sus siglas en inglés) notifica que el Borrador de Evaluación Ambiental (EA, por sus siglas en inglés), elaborado conforme a la Ley Nacional de Política Ambiental (NEPA, por sus siglas en inglés) (Título 42 del Código de los Estados Unidos, §§ 4321–4355), para evaluar el servicio propuesto de entrega comercial de paquetes mediante drones de Amazon Prime Air en Florida está disponible para revisión y comentarios.

Amazon Prime Air solicita enmendar sus Especificaciones de Operación (OpSpecs, por sus siglas en inglés) como transportista aéreo, así como otras aprobaciones de la FAA necesarias para expandir las operaciones de entrega comercial de paquetes mediante drones en Flordia. La aprobación por parte de la FAA de las OpSpecs enmendadas se considera una acción federal importante conforme a NEPA y, por ende, requiere una revisión en virtud de dicha ley. El Borrador de EA se presenta para revisión de conformidad con NEPA, la Orden 1050.1G de la FAA, Procedimientos de Implementación de la Ley Nacional de Política Ambiental, la Sección 4(f) de la Ley del Departamento de Transportación (49 U.S.C. § 303) y la Sección 106 de la Ley Nacional de Preservación Histórica (16 U.S.C. § 470). El Borrador de EA estará disponible para revisión pública durante 30 días, comenzando el 10 de marzo de 2026 y terminando el 8 de abril de 2026.

El Borrador de EA está disponible para revisión en línea en:
https://www.faa.gov/uas/advanced_operations/nepa_and_drones

Puede someter sus comentarios al Borrador de EA mediante vía electrónica a: 9-faa-drone-environmental@faa.gov. También pueden someter comentarios escritos enviándolos por correo postal a la dirección que figura más abajo. Por favor, permita tiempo suficiente para su recepción. Todos los comentarios deben ser recibidos antes de las 5 p.m. (hora central) del 8 de abril de 2026.

Federal Aviation Administration, Suite 802W
c/o AVS Environmental
800 Independence Ave SW
Washington, DC 20591

Todos los comentarios sustantivos recibidos serán considerados y se dará respuesta en la EA Final.

AVISO DE PRIVACIDAD: Antes de incluir su dirección, número de teléfono, correo electrónico u otra información de identificación personal (PII, por sus siglas en inglés) en su comentario, tenga en cuenta que todo el texto—incluyendo el PII—podría divulgarse públicamente en cualquier momento. Aunque en su comentario puede solicitarnos que su PII no se divulgue durante la revisión pública, no podemos garantizar que podamos atender dicha solicitud.

El Borrador de EA se convierte en documento federal una vez evaluado, firmado y fechado por el funcionario responsable de la FAA.

Funcionario responsable de la FAA:

_____ Fecha: _____

Derek Hufty
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Purpose and Need

1.1 Introduction

Amazon.com Services LLC, doing business as Amazon Prime Air (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 six new Prime Air Drone Delivery Centers (PADDC) located across the state of Florida.

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

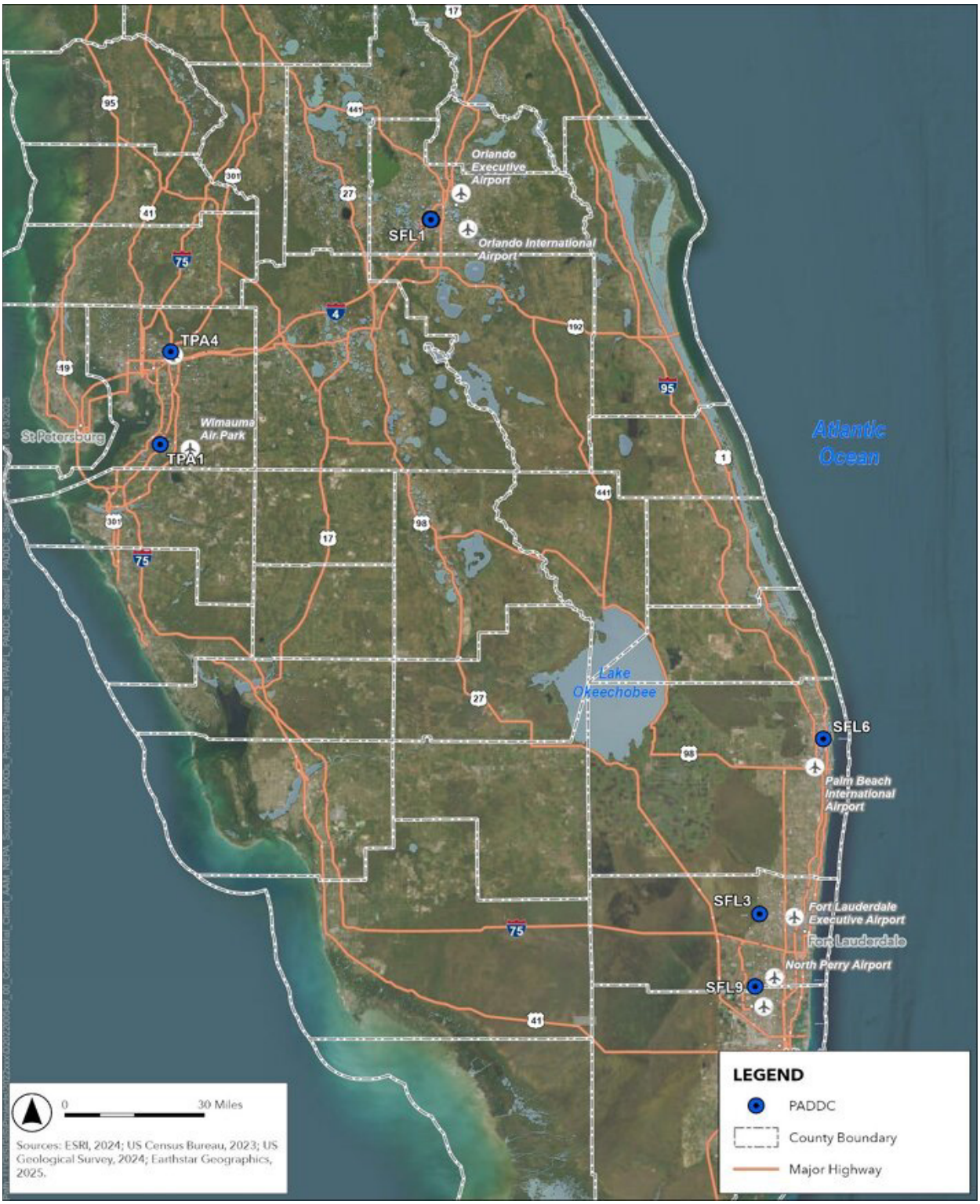
The issuance or amendment of OpSpecs is considered a major federal action subject to environmental review requirements. The FAA has prepared this Draft EA pursuant to the National Environmental Policy Act of 1969 (NEPA). Under NEPA, federal agencies are required to consider the environmental effects of proposed federal actions and 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, 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 1050.1G, *FAA National Environmental Policy Act Implementing Procedures*, and the FAA Order 1050.1 Desk Reference.

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 drone delivery flights from each PADDC per operating day over the course of 365 operating days per year, resulting in roughly 365,000 annual delivery operations at each PADDC location. Commercial delivery operations from each PADDC would occur between 6 a.m. and 10:30 p.m., up to 7 days per week, with up to 100 of the 1,000 daily delivery flights (10%) anticipated to occur during the period from 6 a.m. to 7 a.m. and 10 p.m. to 10:30 p.m. The MK30 drone'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 six 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, a ground control station, an aircraft maintenance area, battery storage area, paved departure and arrival pads, and perimeter fencing. More detailed depictions of each PADDC location are shown in **Figures A-1** through **A-6** in **Appendix A-1**. All drone operations would originate from and terminate at one of the following six proposed PADDC locations:

- **TPA1** – Located at 3350 Laurel Ridge Ave in Ruskin, Florida, the proposed TPA1 PADDC site is zoned Planned Development that allows general commercial uses such as distribution and warehousing and is located west of Interstate 75 and east of 30th St NE, as shown in **Figure A-1**. The properties adjacent to the proposed TPA1 PADDC are a mix of privately-owned commercial, industrial, and utility uses. The closest residential neighborhood is approximately 2,000 ft east of the site.
- **TPA4** – Located at 8727 Harney Rd in Tampa, Florida, the proposed TPA4 PADDC site is zoned "PD", which allows uses such as light manufacturing, wholesale and warehousing, and is located south of Harney Road and west of US 301, as shown in **Figure A-2**. The properties adjacent to the proposed TPA4 PADDC are a mix of privately-owned commercial, industrial, and residential uses, with the closest residence located approximately 1,700 ft northeast of the PADDC.
- **SFL1** – Located at 7469 Kingspointe Parkway, # 300, in Orlando, Florida, the proposed SFL1 PADDC site is zoned Industrial Park allowing such uses as light manufacturing and warehousing and is located on Kingspointe Parkway, southwest of Florida's Turnpike and southeast of I-4, as shown in **Figure A-3**. The properties adjacent to the proposed SFL1 PADDC are light industrial and commercial. The closest residential neighborhood is approximately 650 ft west of the site.
- **SFL3** – Located at 6901 Hiatus Rd in Tamarac, Florida, the proposed SFL3 PADDC site is zoned Business Park allowing such uses as light manufacturing and warehousing and is located east of the Sawgrass Expressway and south of W McNab Rd, as depicted on **Figure A-4**. The properties adjacent to the proposed SFL3 PADDC are light industrial, commercial, residential, and park. The closest residential neighborhood is approximately 480 ft north of the site.
- **SFL6** – Located at 1301 President Barack Obama Highway in Riviera Beach, Florida, the proposed SFL6 PADDC is zoned General Industrial allowing such uses as light manufacturing and warehousing and is located west of President Barack Obama Highway and north of W 13th St, as depicted on **Figure A-5**. The properties adjacent to the proposed SFL6 PADDC are light industrial and commercial. The closest residential neighborhood is approximately 940 ft northeast of the site.
- **SFL9** – Located at 3701 Flamingo Road in Miami, Florida, the proposed SFL9 PADDC is zoned Planned Industrial Development allowing such uses as light manufacturing and warehousing and is located north of Florida's Turnpike and east of S Flamingo Road, as shown in **Figure A-6**. The properties adjacent to the proposed PADDC are a mix of industrial, commercial, and residential. The closest residential neighborhood is approximately 800 ft south of the site.



SOURCE: ESA, 2024; Maxar, 2022; US Census Bureau, 2021; US Geological Survey, 2022.

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

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]

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 in Florida, which, in its business judgment, Prime Air has determined is a suitable market for expanded commercial delivery operations. The requested OpSpecs amendments are **needed** so that Prime Air can begin MK30 drone delivery operations from its six 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 its ability to conduct operations safely while meeting 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 49 U.S.C. § 40104.
2 49 U.S.C. § 44705.
3 Id.
4 14 CFR § 119.5 (g), (l).
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.

1.5 Public Involvement

The FAA provided a Notice of Availability (NOA) of the Draft EA on March 10, 2026, to local interest groups, local government officials, public park authorities, 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 Draft EA available to the general public on the FAA website.

English- and Spanish-language copies of the NOA can be found can be found in **Appendix A-2**. The NOA provides information about the Proposed Action and requested review and comments on the Draft EA, which will be available on the FAA website for a 30-day comment period (March 10, 2026, to April 8, 2026). Interested parties are 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 will be included in **Appendix F**.

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CHAPTER 2
Proposed Action and Alternatives

In accordance with the guidance outlined in Section 102 of NEPA (42 U.S.C. § 4332), the FAA has not identified any unresolved conflicts concerning alternative uses of available resources associated with Prime Air's proposal. Therefore, this Draft 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 analysis. Thus, the No Action alternative serves as a baseline against which 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 six proposed PADDCs in Florida. 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 this new operating area (Florida). 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 Draft EA. The B050 OpSpecs will restrict Prime Air to these six 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, seven days per week, from each of the six 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 6 a.m. and 10:30 p. m., with 100 of the 1,000 daily delivery operations (10%) occurring during the period from 6 a.m. to 7 a.m. and 10 p.m. to 10:30 p.m. and are anticipated to be distributed evenly across each operating area. The MK30's proposed operating range is 7.5 mi from the PADDC, with a potential operating area of

174 sq mi. The MK30 drone departure and arrival paths from and to each PADDC would generally correspond to the geographical location of the package delivery address.

The six proposed drone operating areas, which also serve as the Study Areas for the Draft EA, are consolidated on a single map, as depicted in **Figure 2-1**. The drone operating areas associated with each PADDC are depicted, in detail, in **Figures A-7** through **A-12** in **Appendix A-1**.

2.2.2 Drone Specifications

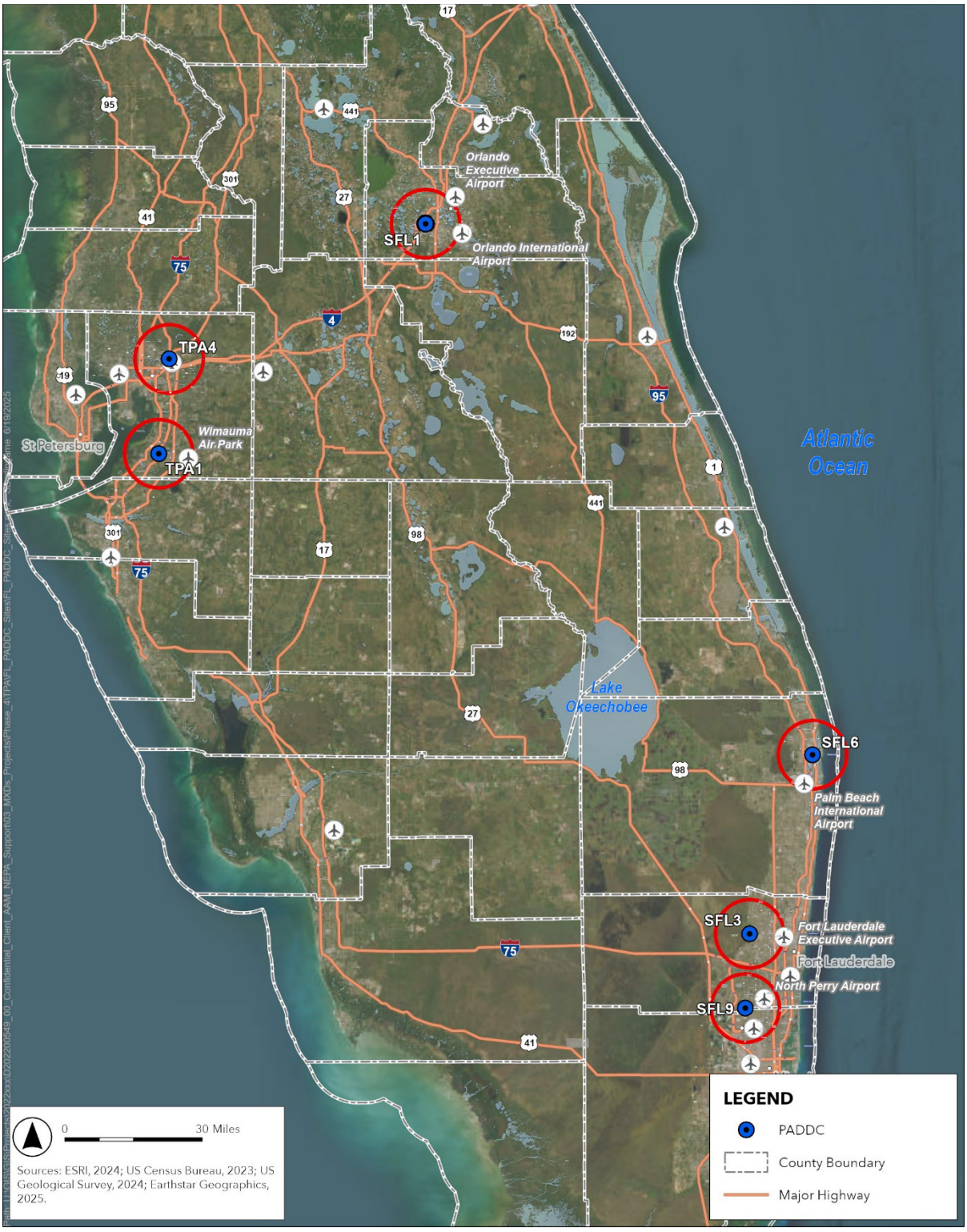
As shown in **Figure 2-2**, the MK30 is an electric powered drone that has a vertical take-off and landing, and transitions to wing borne flight using wing lift during *en route* flight. The drone systems include hardware and software designed for safety and efficiency. The airframe is composed of staggered wings, the propulsion system includes a rechargeable lithium-ion battery and six (6) motors with noise reduction propellers, 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 MK30 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] Drones 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 restricts items deliverable by drone to those which can safely be dropped from this height. Prime Air's MK30 drone would not touch the ground in any place other than the PADDC (except during safe contingent landings) and would 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.

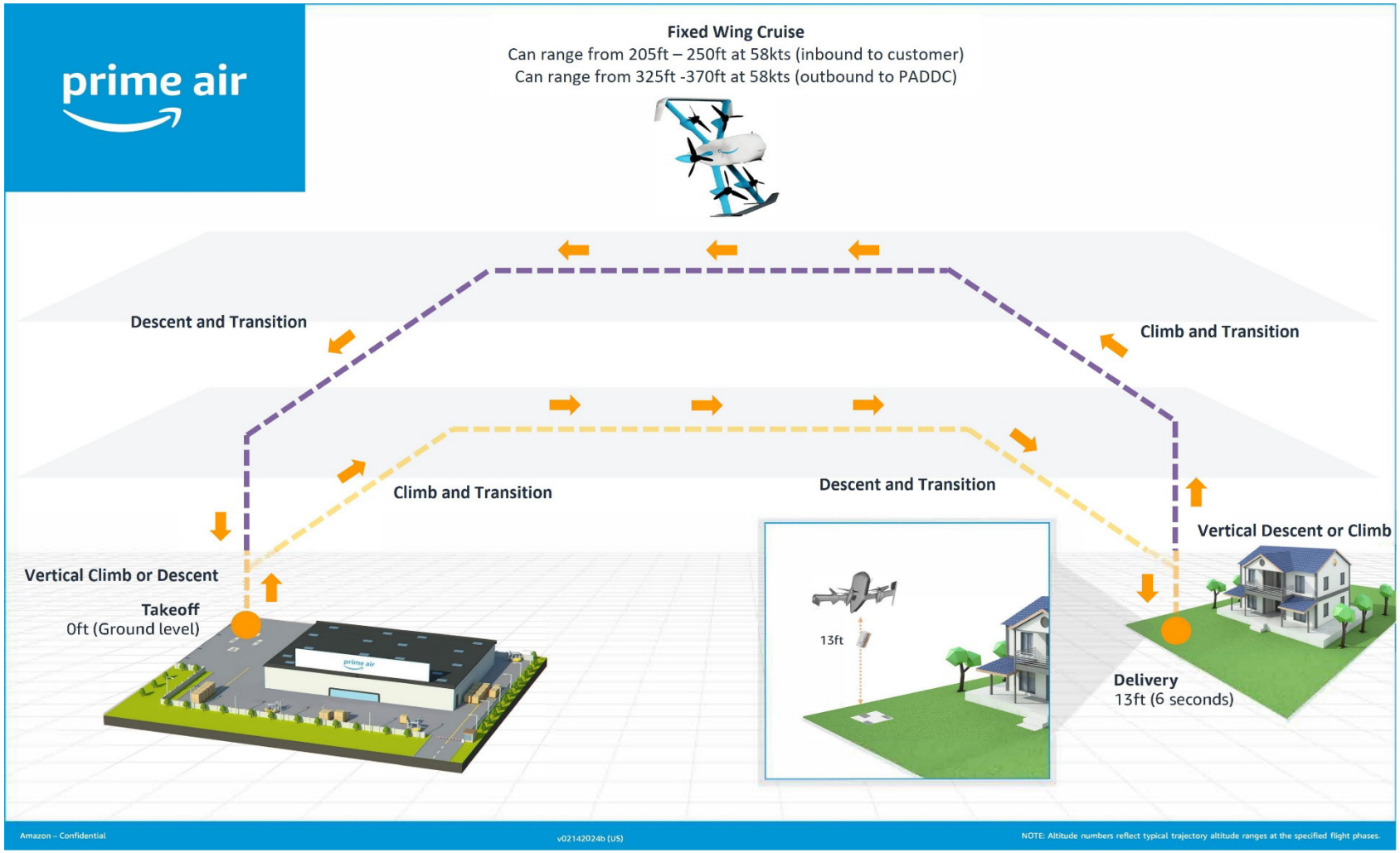


SOURCE: ESA, 2025; ESRI, 2024; US Census Bureau, 2023; US Geological Survey, 2024; Earthstar Geographics, 2025.

Figure 2-1
Study Areas – All PADDCs

SOURCE: Amazon Prime Air, 2023.

Figure 2-2
MK30 Drone



SOURCE: Amazon Prime Air, 2026.

Figure 2-3
MK30 Drone Flight Profile

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CHAPTER 3
Affected Environment and Environmental Consequences

3.1 Introduction

This Draft 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 1050.1G, Section 1.5(d)). Furthermore, these impact categories were not analyzed in detail for potentially "reasonably foreseeable" effects. Under FAA Order 1050.1G, "reasonably foreseeable" means sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision. Since these impact categories are unaffected by the Proposed Action, they would not contribute to reasonably foreseeable effects that could occur when combined with the introduction of other drones or aviation activity.

- Aviation emissions and air quality
- Biological resources (including fish, wildlife, and plants)
- Coastal resources
- Department of Transportation Act, Section 4(f) and 6(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 study areas evaluated for potential impacts are defined as Prime Air's proposed operating areas shown in **Figures A-7** through **A-12** 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 Draft 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 1050.1G, Section 1.5(d)).

- **Aviation Emissions and 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 in the following counties: Hillsborough; Orange; Broward; Palm Beach; Miami-Dade; and Manatee. With the exception of Hillsborough County, which is designed as maintenance for sulfur dioxide, the remaining counties are designated as attainment for all criteria air pollutants by the US Environmental Protection Agency. However, the minimal emissions associated with charging the drone batteries would not contribute to any exceedance of National Ambient Air Quality Standards in any of the listed counties.
- **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 TPA1 drone operating area overlaps the shoreline along Tampa Bay (see **Figure A-7**) and a portion of the SFL6 drone operating area overlaps the shoreline along the Atlantic Ocean (see **Figure A-11**). However, package deliveries along the shorelines will be restricted to developed areas of land; as such, the Proposed Action is expected to be consistent with the Florida Coastal Management Program. The FAA submitted a request for a consistency finding to the Florida Department of Environmental Protection on July 28, 2025. On August 28, 2025, the Florida Department of Environmental Protection found the Proposed Action to be "consistent with FWC's authorities under the Coastal Zone Management Act/ Florida's Coastal Management Program."
- **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):** Although a portion of the drone operations could occur during nighttime hours, the Proposed Action is not expected to result in significant light emission impacts because the drones are equipped with only the minimal lighting required by the FAA for any aircraft conducting night operations[10]. The drones are not equipped with concentrated-beam type "landing lights".
- **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 the Proposed Action.[11] 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 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) as the closest river segment in Florida is the Wekiva River, located more than 75 mi to the northeast. The Wekiva River is located in the Rock Springs Run State Reserve in Central Florida, approximately 15 mi north of Orlando.

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.

[10] The FAA defines nighttime between the hours of 10 p.m. and 7 a.m.

[11] Executive Order 14030, *Climate-Related Financial Risk*, May 2021.

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 ft of a nest during the

breeding season should be implemented.[12] However, a Bald Eagle Disturbance Take General Permit may be offered if disturbance (range of 330 to 1,000 ft) to an in-use eagle nest is unavoidable.[13]

3.3.2 Affected Environment

This section describes the existing biological environment of the operating areas. The operating areas fall into two ecoregions.

The first ecoregion is the Southern Coastal Plain Ecoregion, and more specifically the Southwestern Florida Flatwoods and Eastern Flatwoods Subregion. The Southwestern Florida Flatwoods Subregion includes Pasco County, to the north, to Lee County, to the south on coastal west Florida; the entirety of Hardee and DeSoto Counties; and portions of Polk, Glades, Hendry, and Collier Counties. It includes barrier islands and peninsulas, Gulf coastal lowlands and valleys, as well as high elevation areas such as the DeSoto Plain and the Polk or Bone Valley Upland. This subregion contains most of the forested Green Swamp area, extensive areas of pasture and rangeland, spreading urbanization, disturbed lands from phosphate mining, and citrus groves to the south. The Eastern Flatwoods Subregion includes St. Johns County to the north and Palm Beach County to the south, is ribbed by sand ridges and some intervening swampy lowlands. Land uses include cropland and pasture, pine plantations, non-forested wetlands, and urban/suburban.[14]

The second ecoregion is the Southern Florida Coastal Plain. It is characterized generally as flat plains with wet soils, marshland, and swamp land cover with everglades and palmetto prairie vegetation types. Specifically, within the ecoregion, the subregion is called the Miami Ridge/Atlantic Coast Strip, which includes southeastern Palm Beach County to the north and Miami-Dade County to the south. Much of the area is urban/built up, cropland, agriculture and pasture.

The Proposed Action would take place over high to medium density developed urban, commercial, residential, and industrial areas, and some rural and agricultural areas scattered throughout the Action Areas. Portions of the Everglades Wildlife Management Area, Grassy Waters Preserve, Cockroach Bay Aquatic Preserve, Little Manatee River State Recreation Area, Hillsborough River State Park, Cypress Creek Nature Preserve, Lower Hillsborough Wildlife Management Area, and John D. MacArthur Beach State Park are within the Action Areas. These lands are comprised of natural uplands, wetlands, and surface water communities which have the potential to provide habitat for a variety of state and federal protected species. Other habitats utilized for wildlife within urban and developed portions of the Action Areas include parks, a few open spaces, waterways, and vacant lands. These areas provide habitat for

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

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

[14] Griffith, G.E., J.M. Omernik, C.M. Rohm, and S.M. Pierson, 1994, Florida regionalization project, EPA/600/Q-95/002, U.S. EPA, Environmental Research Laboratory, Corvallis, OR. 83 pp., accessed June 2025, https://nepis.epa.gov/Exe/ZyNET.exe/P100FU04.txt?ZyActionD=ZyDocument&Client=EPA&Index=1991%20Thru%201994&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5CZYFILES%5CINDEX%20DATA%5C91THRU94%5CTXT%5C00000029%5CP100FU04.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=24.

many of the more common and ubiquitous bird and mammal species in the region, including white-tailed deer, eastern gray squirrels, eastern cottontails, raccoons, armadillos, mice, songbirds, raptors, waterfowl, and insects.[15]

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 cover the entire operating areas, as outlined in red in **Figure 2-1**. The USFWS official species list, obtained through IPaC, is included with this Draft EA (accessed June 2025, see **Appendix B**).

Based on the official species list, there are fifty-six (56) federally listed endangered, threatened, proposed endangered species, proposed threatened species, and similarity of appearance (threatened) species that have the potential to occur within the Action Areas. These species are included in **Table 3-1**. Critical Habitat (CH) for the West Indian manatee is present within PADDC Action Areas TPA, TPA4, SFL3, SFL6, and SFL9; CH for the Everglade Snail Kite is present within PADDC Action Areas SFL3 and SFL9; and CH for the Loggerhead Sea Turtle is present within the PADDC Action Area for SFL6. Bald Eagles are not included within **Table 3-1**; however, they are addressed in the Migratory Birds section.

TABLE 3-1
IPAC RESULTS FOR THE ACTION AREAS

Common Name	Species Name	Federal Status	Critical Habitat	PADDC
Mammals				
Tricolored Bat	*Perimyotis subflavus*	Proposed Endangered	N	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9
Florida Bonneted Bat	*Eumops floridanus*	Endangered	N	SFL3, SFL6, SFL9
West Indian Manatee	*Trichechus manatus*	Endangered	Y	TPA1, TPA4, SFL3, SFL6, SFL9
Florida Panther	*Puma (=Felis) concolor coryi*	Endangered	N	SFL3, SFL6, SFL9
Puma (=mountain Lion)	*Puma (=Felis) concolor* (all subsp. except *coryi*)	Similarity of Appearance (Threatened)	N	SFL3, SFL6, SFL9
Southeastern Beach Mouse	*Peromyscus polionotus niveiventris*	Threatened	N	SFL3, SFL6, SFL9
Birds				
Crested Caracara	*Caracara plancus audubonii*	Threatened	N	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9
Eastern Black Rail	*Laterallus jamaicensis* ssp. *Jamaicensis*	Threatened	N	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9
Everglade Snail Kite	*Rostrhamus sociabilis plumbeus*	Endangered	N, Y (SFL3, SFL9)	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9
Florida Scrub-Jay	*Aphelocoma coerulescens*	Threatened	N	TPA1, TPA4, SFL1, SFL6
Rufa Red Knot	*Calidris canutus rufa*	Threatened	N	TPA1, TPA4

[15] iNaturalist, accessed December 2024, https://www.inaturalist.org/places/united-states.

Common Name	Species Name	Federal Status	Critical Habitat	PADDC
Whooping Crane	*Grus americana*	Experimental Population, Non-Essential	N	TPA1, TPA4, SFL1
Wood Stork	*Mycteria americana*	Threatened	N	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9
Red-Cockaded Woodpecker	*Dryobates borealis*	Threatened	N	SFL1, SFL6
Black-Capped Petrel	*Pterodroma hasitata*	Endangered	N	SFL6
Piping Plover	*Charadrius melodus*	Threatened	N	SFL6
Reptiles				
American Crocodile	*Crocodylus acutus*	Threatened	N	TPA1, TPA4, SFL3, SFL6, SFL9
American Alligator	*Alligator mississippiensis*	Similarity of Appearance (Threatened)	N	SFL3, SFL6, SFL9
Eastern Indigo Snake	*Drymarchon couperi*	Threatened	N	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9
Sand Skink	*Neoseps reynoldsi*	Threatened	N	SFL1
Green Sea Turtle	*Chelonia mydas*	Threatened	N	SFL6
Hawksbill Sea Turtle	*Eretmochelys imbricata*	Endangered	N	SFL6
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	Endangered	N	SFL6
Leatherback Sea Turtle	*Dermochelys coriacea*	Endangered	N	SFL6
Loggerhead Sea Turtle	*Caretta caretta*	Threatened	Y	SFL6
Fishes				
Gulf Sturgeon	*Acipenser oxyrinchus (=oxyrhynchus) desotoi*	Threatened	N	SFL3, SFL6, SFL9
Insects				
Monarch butterfly	*Danaus plexippus*	Proposed Threatened	N	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9
Plants				
Britton's Beargrass	*Nolina brittoniana*	Endangered	N	TPA1, TPA4, SFL1
Florida Bonamia	*Bonamia grandiflora*	Threatened	N	TPA1, TPA4, SFL1
Pygmy Fringe-Tree	*Chionanthus pygmaeus*	Endangered	N	TPA1, TPA4
Beautiful Pawpaw	*Deeringothamnus pulchellus*	Endangered	N	SFL1
Papery Whitlow-Wort	*Paronychia chartacea*	Threatened	N	SFL1
Pigeon Wings	*Clitoria fragrans*	Threatened	N	SFL1
Sandlace	*Polygonella myriophylla*	Endangered	N	SFL1
Scrub Lupine	*Lupinus aridorum*	Endangered	N	SFL1
Scrub Plum	*Prunus geniculata*	Endangered	N	SFL1
Beach Jacquemontia	*Jacquemontia reclinate*	Endangered	N	SFL3, SFL6, SFL9
Florida Prairie-Clover	*Dalea carthagenensis floridana*	Endangered	N	SFL6
Four-Petal Pawpaw	*Asimina tetramera*	Endangered	N	SFL6
Tiny Polygala	*Polygala smallii*	Endangered	N	SFL6
Blodgett's Silverbush	*Argythamnia blodgettii*	Threatened	N	SFL3, SFL9

Common Name	Species Name	Federal Status	Critical Habitat	PADDC
Cape Sable Thoroughwort	*Chromolaena frustrata*	Endangered	N	SFL3, SFL9
Carter's Mustard	*Warea carteri*	Endangered	N	SFL3, SFL9
Carter's Small-Flowered Flax	*Linum carteri carteri*	Endangered	N	SFL3, SFL9
Crenulate Lead-Plant	*Amorpha crenulate*	Endangered	N	SFL3, SFL9
Deltoid Spurge	*Chamaesyce deltoidei* ssp. *Deltoidei*	Endangered	N	SFL3, SFL9
Everglades Bully	*Sideroxylon reclinatum* ssp. *Austrofloridense*	Threatened	N	SFL3, SFL9
Florida Brickell-Bush	*Brickellia mosieri*	Endangered	N	SFL3, SFL9
Florida Pineland Crabgrass	*Digitaria pauciflora*	Threatened	N	SFL3, SFL9
Florida Prairie-Clover	*Dalea carthagenesis floridana*	Endangered	N	SFL3, SFL9
Florida Semaphore Cactus	*Consolea corallicola*	Endangered	N	SFL3, SFL9
Pineland Sandmat	*Chamaesyce deltoidei pinetorum*	Threatened	N	SFL3, SFL9
Sand Flax	*Linum arenicola*	Endangered	N	SFL3, SFL9
Small's Milkpea	*Galactia smallii*	Endangered	N	SFL3, SFL9
Tiny Polygala	*Polygala smallii*	Endangered	N	SFL3, SFL9
Lichens				
Florida Perforate Cladonia	*Cladonia perforate*	Endangered	N	TPA1, TPA4, SFL6
SOURCE: USFWS IPaC, accessed June 2025				

Based on the IPaC report, there are six mammals, ten (10) bird species, nine reptile species, one fish species, one insect species, and twenty-nine (29) plant and lichen species, identified on the official species list. The IPaC report for each Action Area is included in **Appendix B**. Descriptions of the species and effect determinations for federally listed species due to the Proposed Action are provided in the paragraphs below.

Mammals

A total of six mammalian species were identified by the IPaC report as likely to occur in the Action Areas

The tricolored bat (*Perimyotis subflavus*) is a proposed candidate for listing under the jurisdiction of the USFWS. As of September 14, 2022, the USFWS proposed to list the tricolored bat as an endangered species under the ESA. Designated critical habitat (CH) is not proposed for the tricolored bat at this time. Tricolored bats are found throughout Florida; however, they are more common in the northern half of the state. The tricolored bat populations have been drastically impacted by a fungal infection, white nose syndrome, that affects hibernating bat colonies. The small, insect-eating bats prefer to roost in mature hardwood forests, caves, and less commonly manmade structures. Tricolored bats forage in waterways, forests, and agricultural areas where small insects can be found.[16] Due to the small size of the tricolored bat and the main mode of transportation for the species being flight, the species faces potential negative

[16] USFWS Tricolored Bat, accessed June 2025, https://www.fws.gov/species/tricolored-bat-perimyotis-subflavus.

impacts, particularly from air strikes. Therefore, the Proposed Action *may affect, but is not likely to adversely affect* the tricolored bat.

The Florida bonneted bat (*Eumops floridanus*) has the potential to occur in the Orlando, West Palm Beach, and Miami Action Areas. This species is listed as endangered, and no designated Critical Habitat is proposed at this time. It is endemic to the state of Florida and is found in the areas from Orlando south to Miami, primarily along the coast. The Florida bonneted bat is Florida's largest bat species and roosts in trees, rock outcrops, bat houses, chimneys, and under barrel roof tiles. They typically leave their roosts shortly after sunset and fly long distances at high altitudes to forage on insects.[17] Drones can negatively impact the bats by disrupting their foraging patterns and roosting behavior. Therefore, the Proposed Action *may affect, but it not likely to adversely affect* the tricolored bat.

The IPaC report included the puma (*Puma concolor*) as a species that has the potential to occur in the West Palm Beach and Miami Action Areas. This species is listed as threatened, due to its similarity in appearance to the Florida panther (*Puma concolor coryi*). This species is not found in peninsular Florida; therefore, the Proposed Action will have *no effect* on the puma.

The Florida panther is a large, long-tailed cat with a great deal of color variation: pale brown or rusty upper parts, dull white or buffy under parts; tail tip, back of ears, and sides of nose are dark brown or blackish. The Florida panther requires large tracts of natural lands for foraging, sheltering, and raising young. Florida panthers are typically found south of the Caloosahatchee River, but there have been documented instances of panthers traveling north; notably in 2022, a Florida panther was documented in Hillsborough County. The greatest threat to the species is habitat loss and fragmentation and many panther deaths have been caused by vehicular collisions. The Proposed Action is not anticipated to have a negative impact on the species. The probability of occurrence of the species to occur within the West Palm Beach and Miami Action Areas is low, and if a drone were to crash in the vicinity of a panther, the individual would have enough time to avoid the device without being harmed. Therefore, the Proposed Action will have *no effect* on the species.

The IPaC reported the West Indian manatee (*Trichechus manatus latirostris*) with potential presence within the Tampa, West Palm Beach, and Miami Action Areas, which includes surface waters within Tampa Bay, the Intercoastal Waterway to the Atlantic Ocean, and the Atlantic Ocean. Due to the nature of the Proposed Action, the drones are not anticipated to travel over large bodies of water. Therefore, impacts to the West Indian manatee are not anticipated, and the appropriate effect determination for the species is *no effect*. The Tampa, West Palm Beach, and Miami Action Areas occur within areas of CH for the West Indian manatee. The Proposed Action is not to occur within surface waters where manatees would likely be found. Therefore, the Proposed Action will *not result in the destruction or adverse modification of critical habitat* for the West Indian manatee.

The southeastern beach mouse has the potential to occur in the West Palm Beach and Miami Action Areas and is listed as threatened. The species has been observed along the Florida Atlantic Coast from Volusia County south to Indian River County (no longer found in Broward, Martin, and Palm Beach Counties). It is known as the largest beach mouse and inhabits sand dunes vegetated by sea oats and dune

[17] Florida's Bats: Florida Bonneted Bat, accessed June 2025, https://edis.ifas.ufl.edu/publication/UW426.

panic grass. The preferred scrub habitat is dense and populated by oaks and sand pine or palmetto.[18] The drone's activity is anticipated to stay within the more urban/suburban and residential areas and is not anticipated to travel over dense scrub area or dune habitat. Therefore, impacts to the southeastern beach mouse are not anticipated, and the appropriate effect determination for the species is *no effect*.

Birds

A total of ten avian species were identified in the IPaC reports. Due to the nature of the Proposed Action, there is potential for avian species to be impacted by drones. Since most avian species use flight as their primary mode of transportation, there is a possibility of bird strikes involving drones.

Audubon's Crested Caracara (*Caracara plancus audubonii*) traditionally inhabited dry or wet prairies with scattered cabbage palms, pastures, and lightly wooded regions featuring saw palmetto, scrub oaks, and cypress. Changes in land use have affected their habitat preferences. Currently, they can be found in various habitats including improved pastures, dry prairies, freshwater marshes, mixed upland hardwoods, shrub and brushland, grassland, and urban areas.[19] Audubon's Crested Caracara is found throughout south-central Florida. The Consultation Area for the species is located along the eastern edge of the Tampa Action Area and the southern edge of the Orlando Action Area. In the instance where involvement with the species were to occur, the Crested Caracra is a large raptor, that would be able to hear and detect a drone approaching and move away in time to avoid a collision. Therefore, the Proposed Action *may affect, but is not likely to adversely affect* the Crested Caracara.

The Eastern Black Rail (*Laterallus jamaicensis* ssp. *jamaicensis*) is gray black in coloration, with white speckled upperparts, and has a grayish crown, a chestnut-colored nape of the neck, and a short tail. It is an elusive bird which is reliant on dense intact freshwater or brackish wetlands. Eastern Black Rails fly very little and mostly remain on the ground and run quickly through dense vegetation[20]. Due to the behavior and mobilization of the species and their classification as partially migratory (however in the south regions of the country tend to have a smaller range and can sometimes be residents) and the nature of the Proposed Action, the project determination is *may affect, not likely to adversely affect* the species.

The Everglade Snail Kite (*Rostrhamus sociabilis plumbeus*) is a federally endangered species. Everglade Snail Kites have diets which are specialized on the Florida apple snail (*Pomacea paludosa*). This prey item inhabits surface waters of central and south Florida wetland resources, such as canals, littoral shelves of lakes, marshes, and stormwater ponds. Ideal foraging and nesting habitats consist of large shallow marshes that support the apple snail. Suitable habitat for the species is present within each of the Action Areas. Critical habitat was identified for the species in the Miami Action Area. However, the Everglade Snail Kite is a large bird that would be able to hear and detect a drone approaching and move away in time to avoid a collision. Therefore, the Proposed Action *may affect, but is not likely to adversely affect* the Everglade Snail Kite.

[18] ECOS Southeastern beach mouse (*Peromyscus polionotus niveiventris*), accessed June 2025, https://ecos.fws.gov/ecp/species/3951.

[19] Audubon's Crested Caracara, accessed June 2025, https://www.fws.gov/species/audubons-crested-caracara-polyborus-plancus-audubonii.

[20] USFWS Eastern Black Rail, accessed December 2024, https://www.fws.gov/species/eastern-black-rail-laterallus-jamaicensis-jamaicensis.

The Florida Scrub-Jay (*Aphelocoma coerulescens*) is the only species of bird that is endemic to Florida and has adapted to a very specific habitat known as Florida scrub. Optimal Scrub-Jay habitat occurs on scrub ridges with well drained to excessively well drained soils that have scrubby oaks 3 to 9 ft in height interspersed with 10 to 50 percent unvegetated sandy openings, and a sand pine (*Pinus clausa*) canopy of less than 20 percent. The species has been documented in suboptimal habitats such as those fragmented by residential developments. The Tampa, Orlando, and West Palm Beach Action Areas are located within the Florida Scrub-Jay Consultation Area; however, the footprint does not contain the required specific active habitat. Therefore, the Proposed Action will have *no effect* on the species.

The Rufa Red Knot (*Calidris canutus*) is stocky, medium-sized shorebird with relatively short bill and legs. The species migrates exceptionally long distances, from High Arctic nesting areas to wintering spots in southern South America, Africa, and Australia. Suitable habitat for the species within the Tampa, West Palm Beach, and Miami Action Areas is limited to the coastlines, where the drones will rarely spend time flying over. In the rare instance where involvement with the species were to occur, the Rufa Red Knot is a medium sized bird, that would be able to hear and detect a drone approaching and move away in time to avoid a collision. Therefore, the Proposed Action *may affect, but is not likely to adversely affect* the Rufa Red Knot.

IPaC reported the Whooping Crane (*Grus americana*) as having the potential to occur within the Tampa and Orlando Action Areas. Whooping Cranes are tall, white birds with long necks and long legs. They have stout, straight bills. Their body is slender and widens to a plump bustle by the tail. When in flight, the wings of a Whooping Crane are broad, and the neck is fully extended. The Whooping Crane breeds, migrates, winters, and forages in a variety of habitats, including coastal marshes and estuaries, inland marshes, lakes, open ponds, shallow bays, salt marsh and sand or tidal flats, upland swales, wet meadows and rivers, pastures and agricultural fields. Suitable habitat for the species is present within the Southern Action Area; however, the Whooping Crane is a large bird that would be able to hear and detect a drone approaching and move away in time to avoid a collision. Therefore, the Proposed Action *may affect, but is not likely to adversely affect* the Whooping Crane.

The Wood Stork (*Mycteria americana*) is a very large, white wading bird with black wings and a short black tail. Wood Storks soar with their necks and legs extended, displaying long, broad wings. Black flight feathers contrast with white along the length of wings. It nests colonially in a variety of inundated wetlands including cypress swamps, mixed hardwood swamps, sloughs, and mangroves and utilizes freshwater marshes, flooded pastures, and roadside ditches for feeding.[21] For the Tampa and Orlando Action Areas, the USFWS has defined the Core Foraging Habitat (CFA) for a wood stork colony as the area within a 15-mi radius from the colony location. For the West Palm Beach and Miami Action Areas, the USFWS has defined the Core Foraging Habitat (CFA) for a wood stork colony as the area within a 18.6-mi radius from the colony location.[22] Suitable habitat for the species is present within each of the Action Areas. However, the wood stork is a large bird that would be able to hear and detect a drone approaching and move away in time to avoid a collision. Therefore, the Proposed Action *may affect, but is not likely to adversely affect* the Wood Stork.

[21] Wood Stork, accessed June 2025, https://www.fnai.org/PDFs/FieldGuides/Mycteria_americana.pdf.

[22] Florida Wood Stork Colonies Core Foraging Areas, accessed June 2025, https://efotg.sc.egov.usda.gov/references/public/FL/Florida_Wood_Stork_Colonies-Core_Foraging_Areas_20100224.pdf.

The IPaC reported the Red-Cockaded Woodpecker (*Dryobates borealis*) (RCW) as having the potential to occur within the Orlando and West Palm Beach Action Areas. RCWs are black and white birds that can reach lengths of 9 inches. The red cockade, only found on the male, is a small red streak above the cheek that is barely visible. RCWs inhabit 90-100 year-old longleaf, slash and loblolly pine habitats and nest in live pine trees as opposed to the typical dead tree preference of other woodpeckers. They are non-migratory and maintain territories throughout the year and generally forage over a small area close to nests.[23] Given that suitable habitat is likely not present with the Orlando and West Palm Beach Action Areas, the Proposed Action will have *no effect* on the RCW.

The Black-Capped Petrel (*Pterodroma hasitata*), a federally endangered species under the ESA, is a pelagic seabird that is widely distributed and travels long distances to foraging areas in the western Atlantic and southern Caribbean basins and the central and northeastern Gulf of Mexico.[24] The IPaC reported the Black-Capped Petrel as having potential to occur within the West Palm Beach Action Area. Due to the species being a pelagic seabird, drones are limited to the coastlines and would not operate over the ocean. Therefore, the Proposed Action will have *no effect* on the Black-Capped Petrel.

The IPaC reported the Piping Plover (*Charadrius melodus*) as having the potential to occur in the West Palm Beach Action Area. The Piping Plover is a small shorebird that inhabits sandy beaches, sand flats, and mudflats along coastal areas. The species does not breed in Florida but spend a large portion of the year "wintering".[25] Drone activity is limited on the coastlines and would typically not operate over beaches or mudflats. Therefore, the Proposed Action *may affect, but is not likely to adversely affect* the Piping Plover.

Reptiles

A total of nine reptile species were identified by the IPaC report as likely to occur in the Action Areas.

The American crocodile inhabits brackish or saltwater areas and can be found in ponds, coves, and creeks in mangrove swamps. None of the Action Areas are within the CA for the American crocodile, and the probability of occurrence for the species in these area is low. In an unlikely event that a drone was to crash in the vicinity of an American crocodile, the species would be able to get away from the device without being harmed. Therefore, the Proposed Action will have *no effect* on the species.

The American alligator (*Alligator mississippiensis*) is listed by the USFWS as threatened due to its similarity of appearance to the American crocodile (*Crocodylus acutus*). The American alligator is a large, mostly black crocodilian with a broad rounded snout. The American alligator's preferred habitat includes river swamps, lakes, marshes, bayous, and other open wetland habitats. Due to the nature of the Proposed Action, these crocodilian species are not anticipated to be impacted by the drones. If a drone were to crash, the species would be able to get away from the device without being harmed. Therefore, the Proposed Action will have *no effect* on the species.

[23] Red-Cockaded Woodpecker, accessed June 2025, https://www.fnai.org/PDFs/FieldGuides/Dryobates_borealis.pdf.

[24] Black-Capped Petrel, accessed June 2025, https://www.fws.gov/species/black-capped-petrel-pterodroma-hasitata.

[25] Piping Plover, accessed June 2025, https://myfwc.com/wildlifehabitats/profiles/birds/shorebirdsseabirds/piping-plover/.

The eastern indigo snake (*Drymarchon couperi*) is a large, stout-bodied, shiny black snake reaching lengths up to 8 ft. Its chin, throat, and sides of head may be reddish or sometimes white. The eastern indigo snake utilizes a wide variety of habitats ranging from mangrove swamps to xeric scrub communities. The eastern indigo snake prefers upland/wetland ecotone breaks for feeding, and often lives in association with gopher tortoise burrows, especially in the winter. If a drone were to crash, the species would have enough time to avoid the device without being harmed. Due to the nature of the Proposed Action, an effected determination of *no effect* is appropriate for the species.

The sand skink (*Neoseps reynoldsi*) was listed in the IPaC as having the potential to occur within the Orlando Action Area. Little is known about sand skink population or reproduction ecology. They are fossorial species that move or "swim" below the surface of the ground in sandy soils. These species are endemic to the sandy ridges or central Florida, found at elevations greater than 82 ft and within excessively drained soils.[26] Given the nature of the Proposed Action, an effected determination of *no effect* is appropriate for the species.

The IPaC reported five sea turtle species with potential presence within the West Palm Beach Action Area, which includes the Atlantic Ocean and its associated coastlines: green sea turtle (*Chelonia mydas*), leatherback sea turtle (*Dermochelys coriacea*), Kemp's Ridley sea turtle (*Lepidochelys kempii*), hawksbill sea turtle (*Eretmochelys imbricata*), and loggerhead sea turtle (*Caretta caretta*). Critical Habitat for the loggerhead sea turtle is also located in the West Palm Beach Action Area. While there is a high probability of occurrence for sea turtles occurring within these waters or to nest along the coastlines within the West Palm Beach Action Area, the drones are not anticipated to travel over large bodies of water. Therefore, the Proposed Action will have *no effect* on sea turtles.

Fishes

The gulf sturgeon (*Acipenser oxyrinchus desotoi*) is listed as threatened by the USFWS and was listed in the IPaC as having the potential to occur within the West Palm Beach and Miami Action Areas. Gulf sturgeons are an anadromous species of fish and one of seven species of sturgeon found in North America.[27] Due to the nature of the Proposed Action, the drones are not anticipated to travel over large bodies of water. Therefore, impacts to the gulf sturgeon are not anticipated, and the appropriate effect determination for the species is *no effect*.

Insects

The monarch butterfly (*Danaus plexippus*) was listed by USFWS as proposed threatened in December 2024. Candidate species receive no statutory protection under the ESA. The USFWS encourages cooperative conservation efforts for these species because they are, by definition, species that may warrant future protection under the ESA. Monarchs utilize a range of habitats, but the most important factor in their habitat is the presence of milkweed (primarily *Asclepias* spp.) and flowering plants. Monarchs lay their eggs on their obligate milkweed host plants during the breeding season, which could be all year in some geographic areas. Monarchs are known for their annual fall migration, one of the longest known insect migrations in the world. The eastern population of monarchs travel up to 3,000 mi

[26] USFWS, 2023, *Peninsular Florida Species Conservation and Consultation Guide, Sand Skink and Blue-tailed (Blue-tail) Mole Skink*, 2023.

[27] Gulf Sturgeon, accessed June 2025, https://myfwc.com/wildlifehabitats/profiles/saltwater/gulf-sturgeon/.

during migration traveling from Canada, through the U.S. and down to Mexico - a trip that may last more than 2 months.[28]

The Proposed Action has the potential to impact the monarch butterfly. Given that monarchs travel by flight and are small insects weighing about one gram, the Proposed Action could potentially impact the species. However, the likelihood of these strike events is low, and a determination of *no effect* is appropriate for the species.

Plants and Lichen

A total of 29 plants and lichen species were listed on the IPaC report. These species are known to exist within the Action Areas. Many of the federally listed plant species occur within natural areas. The Action Areas are comprised of highly urbanized and developed residential, commercial, and industrial areas; therefore, the probability of occurrence for most of these plant and lichen species is low. Activities associated with the Proposed Action will have *no effect* on federally listed plants, Additionally, it is not anticipated that the existing plant community would be negatively affected by the Proposed Action.

3.3.2.2 State Species of Concern

This project was evaluated for impacts to wildlife and habitat resources, including protected species, in accordance with the Florida Endangered and Threatened Species Act, Section 379.2291, F.S. Wildlife agencies with jurisdiction in the project area include USFWS and FWC. The FDACS has jurisdiction over state protected plant species. The Florida Natural Areas Inventory (FNAI) database was used to populate a list of state protected flora and fauna species within the Action Areas.[29] The Tampa Action Areas are located in Hillsborough and Manatee Counties. The FNAI database search recorded a total of fifty-two (52) state-protected plant and lichen, reptilian, avian, and mammalian species that have the potential to occur within Hillsborough County, while a total of fifty (50) state-protected plant and lichen, reptilian, avian, and mammalian species were populated for Manatee County.

The Orlando Action Area is located wholly in Orange County. The FNAI database search recorded a total of fifty-seven (57) state-protected plant and lichen, reptilian, avian, and mammalian species that have the potential to occur within Orange Couty.

The West Palm Beach Action Area is located wholly in Palm Beach County. The FNAI database search recorded a total of sixty-three (63) state-protected plant and lichen, reptilian, avian, and mammalian species that have the potential to occur in Palm Beach County.

The Miami Action Areas are located within Broward and Miami-Dade Counties. The FNAI database search recorded a total of 54 state-protected plant and lichen, reptilian, avian, and mammalian species that have the potential to occur within Broward County, while a total of 190 state-protected plant and lichen, reptilian, avian, and mammalian species were populated for Miami-Dade County. Because any federally listed species with potential to occur in the Action Area would be identified in the USFWS official species list, the FAA did not analyze state endangered species that are included in the official species list for this Action Area. The likelihood of state-listed species' occurrence in the Action Area depends on the

[28] USFWS Monarch, accessed June 2025, https://www.fws.gov/species/monarch-danaus-plexippus.

[29] Rare Species and Communities We Track, accessed June 2025, https://www.fnai.org/species-communities/tracking-main.

presence of species' preferred habitats. While these species are listed for Hillsborough, Manatee, Orange, Palm Beach, Broward, and Miami-Dade Counties, it does not automatically convey that they have the potential to occur in the Action Areas. Additionally, state-listed, plants, reptiles, birds, and mammals are included in the list; however, the FAA does not anticipate that these species could be affected as there is no ground disturbance or construction under the Proposed Action.

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 IPaC search did not record any migratory bird species that have the potential to occur within any Action Areas. The USFWS official species lists, obtained through IPaC, are included in **Appendix B**.

The FNAI database and Birds of Conservation Concern (BCC) identified seven state-listed/migratory birds that may occur within the Action Areas. The Action Areas are within the Bird Conservation Region (BCR) and Marine Bird Conservation Region (MBCR) 31 – Peninsular Florida, M20 – Gulf of Mexico, and M19 – Southeast U.S. Continental Shelf and U.S. waters for the BBC. The avian species included one landbird (Florida Burrowing Owl [*Athene cunicularia floridana*]), two shorebirds (American Oystercatcher [*Haematopus palliatus*] and Snowy Plover [*Charadrius nivosus*]), two seabirds (Least Tern [*Sternula antillarum*] and Black Skimmer [*Rynchops niger*]), and two waterbirds (Little Blue Heron [*Egretta caerulea*] and Reddish Egret [*Egretta rufescens*]). Habitat used by these state-protected and BCC species listed in the Action Areas would occur within open/grassy lands, airports, wetlands, surface waters, and coastal areas.

The Bald Eagle was delisted from protection under the ESA in 2007. However, the Bald Eagle is still protected under the BGEPA, MBTA, and State law. It is a large bird with dark plumage, white head (in adults), white tail, and large yellow bill. Bald Eagles are commonly observed near large open water habitats such as rivers, lakes, and the coast. Bald Eagles nest in large pine trees near water bodies that provide dependable food sources.

The location and activity of Bald Eagle nest sites throughout Florida are closely monitored by the Audubon Society and FWC. A desktop review of Audubon EagleWatch mapping indicates that there are 88 Bald Eagle nests documented within and/or the protective zones are within the footprint of the Action Areas. The breakdown of nests per Action Area is below:

- Tampa Action Areas (TPA1, TPA4) = 44 nests documented
- Orlando Action Area (SFL1) = 30 nests documented
- West Palm Beach Action Area (SFL6) = 8 nests documented
- Miami Action Areas (SFL3, SFL9) = 6 nests documented

Potential Bald Eagle nest locations for each Action Area and associated PADDC are included in **Appendix B**.

The National Bald Eagle Management Guidelines state aircraft should stay at least 1,000 ft from the nests during the breeding season unless the aircraft is operated by a trained wildlife biologist. Prime Air will establish an avoidance area such that there is 1,000 ft vertical and horizontal separation distance between the vehicle's flight path and the nest during the breeding season.

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.[30] 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.[31] 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. Any future ground construction at the PADDC sites would require approval or authorization by the FAA.

Prime Air's drones would not touch the ground in any place other than the PADDC (except during emergency landings) since it remains airborne while conducting deliveries. The operations would take place within airspace and would typically be well above the tree line and away from sensitive habitats. After launch, Prime Air's drone would rise to a cruising altitude between 180 and 377 ft 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.

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

[31] 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.

Drones would typically operate between 180 and 377 ft AGL when descending to drop a package. When making a delivery, the drone descends, and packages are dropped to the ground from approximately 13 ft AGL. Packages are carried internally in the drone's fuselage and are dropped by opening a set of payload doors. After the package is dropped the drone then climbs vertically to approximately 180 to 377 ft and reverses the path taken, returning to the takeoff/landing 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 ft is approximately 71.2 dB, whereas a leaf blower at 50 ft is approximately 73 to 77 dB).[32] At a potential maximum of 1,000 flights per day across the entire Action Area of each PADDC (or 2,000 total per day), the distribution and altitude of the flights are not expected to significantly affect wildlife in the Action Areas.

A significant impact on federally listed threatened and endangered species would occur when the USFWS or NMFS determines the 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 looked at 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 areas, 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. Portions of the Cypress Creek Nature Preserve and Lower Hillsborough Wildlife Management Area, Grassy Waters Preserve, and Everglades Wildlife Management Area are within the Action Areas. These areas include large tracts of natural lands comprised of forested uplands and wetlands. The potential for wildfire may be considered and preventative measures should be taken to minimize risks to natural areas.

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 areas.

[32] Appendix E: Estimated Noise Levels for Amazon Prime Air MK30 Drone, Table 8, and Characteristics of Lawn and Garden Equipment Sound: A Community Pilot Study (National Institutes of Health) (National), December 2017, Table 2, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6707732/.

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 Florida, 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, per PADDC, up to 365 days per year, operating between 6 a.m. and 10:30 p.m. There would be no ground construction or habitat modification associated 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 at an en route altitude of less than 400 ft AGL, and would generally occur between 180 and 377 ft AGL. The drone would lower to around 13 ft 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 Florida Department of Environmental Protection (FDEP) and the FWC to discuss any potential concerns regarding impacts on wildlife or habitat in the Action Areas. In addition, Prime Air would also specifically coordinate with managing entities of state and federal parks and natural areas within the Action Areas on the thoughtful placement and use of delivery sites within these areas as necessary.

Special Status Species

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 ft in elevation, and would not be expected to frequently occur at the altitudes where Prime Air is proposing to operate.[33]

The tricolored bat is a proposed federally endangered species and the Florida bonneted bat, a federally listed species, could be found within the Action Areas. The Proposed Action would occur during the dusk emergence of bat activity during the evening civil twilight hours; however, drone service would not likely affect emergence during dawn civil twilight hours. Research suggests that drones have "*minimal impact on bat behavior*"[34] and that bats do not appear to be disturbed by drones.[35] Also, the risk of bat conflicts is only present for 3 to 6 months each year (i.e., when bats are not hibernating). Bats at roost or in flight could experience drone noise during the en route and delivery flight phases. When foraging at or near the tree line at the time a drone flies by, bats would experience the greatest sound levels. Roosting bats or

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

[34] 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, https://doi.org/10.1111/2041-210x.12992.

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

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 PADCCs 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 (180 to 377 ft 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 or Florida bonneted 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 and Florida bonneted 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 federal and state-listed threatened and endangered species that could occur in Florida (Hillsborough, Manatee, Orange, Palm Beach, Broward, and Miami-Dade Counties). Portions of the Action Areas are within highly developed areas with minimal suitable habitat present. There are tracts of natural uplands, wetland areas, and surface waters communities present specifically within portions of the Tampa, West Palm Beach, and Miami Action Areas. These include Cypress Creek Nature Preserve, Lower Hillsborough Wildlife Management Area, Hillsborough River. Tampa Bay, McKay Bay, Cockroach Bay Aquatic Preserve, Little Manatee River and Little Manatee River State Park, Shingle Creek, Wekiva River, Grassy Waters Preserve, the Atlantic Ocean, and Everglades Wildlife Management Area. These areas may provide foraging and suitable habitat for a variety of federal, and state listed aquatic and terrestrial species as well as wading birds. However, 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 3-2**.

TABLE 3-2
EFFECTS DETERMINATION TABLE

Common Name	Species Name	Federal Status	PADDC	Effects Determination
Mammals				
Tricolored Bat	*Perimyotis subflavus*	Proposed Endangered	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9	*Not Likely to Adversely Affect*
Florida bonneted bat	*Eumops floridanus*	Endangered	SFL3, SFL6, SFL9	*Not Likely to Adversely Affect*
West Indian Manatee	*Trichechus manatus*	Endangered	TPA1, TPA4, SFL3, SFL6, SFL9	*No Effect*
Florida Panther	*Puma (=Felis) concolor coryi*	Endangered	SFL3, SFL6, SFL9	*No Effect*
Puma (=mountain Lion)	*Puma (=Felis) concolor* (all subsp. except *coryi*)	Similarity of Appearance (Threatened)	SFL3, SFL6, SFL9	*No Effect*

Common Name	Species Name	Federal Status	PADDC	Effects Determination
Birds				
Crested Caracara	*Caracara plancus audubonii*	Threatened	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9	*No Effect*
Eastern Black Rail	*Laterallus jamaicensis* ssp. *Jamaicensis*	Threatened	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9	*No Effect*
Everglade Snail Kite	*Rostrhamus sociabilis plumbeus*	Endangered	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9	*Not Likely to Adversely Affect*
Florida Scrub-Jay	*Aphelocoma coerulescens*	Threatened	TPA1, TPA4, SFL1, SFL6	*No Effect*
Rufa Red Knot	*Calidris canutus rufa*	Threatened	TPA1, TPA4	*Not Likely to Adversely Affect*
Whooping Crane	*Grus americana*	Experimental Population, Non-Essential	TPA1, TPA4, SFL1	*Not Likely to Adversely Affect*
Wood Stork	*Mycteria americana*	Threatened	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9	*Not Likely to Adversely Affect*
Red-Cockaded Woodpecker	*Dryobates borealis*	Threatened	SFL1, SFL6	*No Effect*
Black-Capped Petrel	*Pterodroma hasitata*	Endangered	SFL6	*No Effect*
Piping Plover	*Charadrius melodus*	Threatened	SFL6	*Not Likely to Adversely Affect*
Reptiles				
American Crocodile	*Crocodylus acutus*	Threatened	TPA1, TPA4, SFL3, SFL6, SFL9	*No Effect*
American Alligator	*Alligator mississippiensis*	Similarity of Appearance (Threatened)	SFL3, SFL6, SFL9	*No Effect*
Eastern Indigo Snake	*Drymarchon couperi*	Threatened	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9	*No Effect*
Sand Skink	*Neoseps reynoldsi*	Threatened	SFL1	*No Effect*
Green Sea Turtle	*Chelonia mydas*	Threatened	SFL6	*No Effect*
Hawksbill Sea Turtle	*Eretmochelys imbricata*	Endangered	SFL6	*No Effect*
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	Endangered	SFL6	*No Effect*
Leatherback Sea Turtle	*Dermochelys coriacea*	Endangered	SFL6	*No Effect*
Loggerhead Sea Turtle	*Caretta caretta*	Threatened	SFL6	*No Effect*
Fishes				
Gulf Sturgeon	*Acipenser oxyrinchus (=oxyrhynchus) desotoi*	Threatened	SFL3, SFL6, SFL9	*No Effect*
Insects				
Monarch Butterfly	*Danaus plexippus*	Proposed Threatened	TPA1, TPA4, SFL1, SFL3, SFL6, SFL9	*Not Likely to Adversely Affect*
Plants				
Britton's Beargrass	*Nolina brittoniana*	Endangered	TPA1, TPA4, SFL1	*No Effect*
Florida Bonamia	*Bonamia grandiflora*	Threatened	TPA1, TPA4, SFL1	*No Effect*
Pygmy Fringe-Tree	*Chionanthus pygmaeus*	Endangered	TPA1, TPA4	*No Effect*
Beautiful Pawpaw	*Deeringothamnus pulchellus*	Endangered	SFL1	*No Effect*
Papery Whitlow-Wort	*Paronychia chartacea*	Threatened	SFL1	*No Effect*
Pigeon Wings	*Clitoria fragrans*	Threatened	SFL1	*No Effect*

Common Name	Species Name	Federal Status	PADDC	Effects Determination
Sandlace	*Polygonella myriophylla*	Endangered	SFL1	*No Effect*
Scrub Lupine	*Lupinus aridorum*	Endangered	SFL1	*No Effect*
Scrub Plum	*Prunus geniculata*	Endangered	SFL1	*No Effect*
Beach Jacquemontia	*Jacquemontia reclinate*	Endangered	SFL3, SFL6, SFL9	*No Effect*
Florida Prairie-Clover	*Dalea carthagenensis floridana*	Endangered	SFL6	*No Effect*
Four-Petal Pawpaw	*Asimina tetramera*	Endangered	SFL6	*No Effect*
Tiny Polygala	*Polygala smallii*	Endangered	SFL6	*No Effect*
Blodgett's Silverbush	*Argythamnia blodgettii*	Threatened	SFL3, SFL9	*No Effect*
Cape Sable Thoroughwort	*Chromolaena frustrata*	Endangered	SFL3, SFL9	*No Effect*
Carter's Mustard	*Warea carteri*	Endangered	SFL3, SFL9	*No Effect*
Carter's Small-Flowered Flax	*Linum carteri carteri*	Endangered	SFL3, SFL9	*No Effect*
Crenulate Lead-Plant	*Amorpha crenulate*	Endangered	SFL3, SFL9	*No Effect*
Deltoid Spurge	*Chamaesyce deltoidei* ssp. *Deltoidei*	Endangered	SFL3, SFL9	*No Effect*
Everglades Bully	*Sideroxylon reclinatum* ssp. *Austrofloridense*	Threatened	SFL3, SFL9	*No Effect*
Florida Brickell-Bush	*Brickellia mosieri*	Endangered	SFL3, SFL9	*No Effect*
Florida Pineland Crabgrass	*Digitaria pauciflora*	Threatened	SFL3, SFL9	*No Effect*
Florida Prairie-Clover	*Dalea carthagenesis floridana*	Endangered	SFL3, SFL9	*No Effect*
Florida Semaphore Cactus	*Consolea corallicola*	Endangered	SFL3, SFL9	*No Effect*
Pineland Sandmat	*Chamaesyce deltoidei pinetorum*	Threatened	SFL3, SFL9	*No Effect*
Sand Flax	*Linum arenicola*	Endangered	SFL3, SFL9	*No Effect*
Small's Milkpea	*Galactia smallii*	Endangered	SFL3, SFL9	*No Effect*
Tiny Polygala	*Polygala smallii*	Endangered	SFL3, SFL9	*No Effect*
Lichens				
Florida Perforate Cladonia	*Cladonia perforate*	Endangered	TPA1, TPA4, SFL6	*No Effect*

SOURCE: FAA, 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. Monitoring efforts would focus on annual desktop reviews of available databases for confirmation of existing nests and identification of new nests, but could also include, if required by USFWS, annual in-person visual surveys of potential nests located in drone operating areas. Bald Eagle nests are typically very conspicuous, usually five to nine ft in diameter, with a vertical depth up to

eight ft, and should be easily identified.[36] Bald Eagles are usually seen near lakes, rivers, and marshes while foraging for fish or carrion.

A desktop review of Audubon EagleWatch mapping (accessed June 2025) indicates the Proposed Action has the potential to impact approximately 88 bald eagle nests that have been documented within and/or the protective zones are within the footprint of the Action Areas.

Prime Air will establish an avoidance area such that there is 1,000-ft 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 Florida (October 1 through May 15).[37]

The other state-protected and BCC species identified breed in a variety of habitats, mainly wetlands, surface water systems, and coastal areas. The Proposed Action is not anticipated to impact the nesting or sheltering for the species, as the PADDC areas are not proposed within wetland or coastal systems. Additionally, the drones 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 ft 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 July 20, 2025.

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

The introduction of Prime Air's drone operations may occur in areas subject to other aviation activity, necessitating the evaluation of reasonably foreseeable effects on biological resources when combined with other aviation operations. Prime Air's proposed operations of the MK30 drone would utilize existing infrastructure at each PADDC and any future ground construction at the PADDC sites would require further approval or authorization by the FAA. Furthermore, drone 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

[36] USFWS Midwest Region, Identification of Large Nests, accessed December 2024, https://www.fws.gov/midwest/eagle/Nhistory/nest_id.html.

[37] USFWS, Eagle Management, accessed December 2024, https://www.fws.gov/program/eagle-management/eagle-incidental-disturbance-and-nest-take-permits.

the area. Wing Aviation, LLC, is also conducting Part 135 commercial drone package delivery operations in proximity to Prime Air's proposed PADCC's and MK30 drone operation areas in Florida. However, Prime Air will communicate and coordinate with Wing Aviation, LLC, and other future operators to limit operations occurring concurrently in the same area to avoid any reasonably foreseeable effects. In the future, other drone operations or aviation activities may be proposed to operate with this Proposed Action's operating areas. Should that occur, Prime Air understands the potential for impacts may increase due to the introduction of additional drone or other aviation activity and would work with operators and the FAA to mitigate potential impacts. The FAA would also conduct a new environmental analysis—including evaluating reasonably foreseeable effects on biological resources—prior to the commencement of drone operations or other aviation activity in these areas.

3.4 Department of Transportation Act, Section 4(f) and 6(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 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 in DOT Order 5610.1C, *Procedures for Considering Environmental Impacts* . Additionally, the FAA uses the regulations and guidance provided by the Federal Highway Administration (FHWA) when evaluating potential impacts on Section 4(f) properties.[38,39] While these requirements are not obligatory for the FAA, they may be utilized as guidance to the extent that they are applicable.[40]

Section 6(f) of the Land and Water Conservation Fund Act (LWCF) (16 U.S.C. §§ 4601-4 et seq.), as amended, provides funding for the purchase and improvement of recreational lands, wildlife and

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

[39] 23 CFR Part 774, Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and historic Sites (Section 4(f)).

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

waterfowl refuges, and other similar resources. The LWCF established a fund for federal acquisition of park and recreational lands and provides matching grants to state and local governments for recreation planning, acquisition, and development. Lands purchased by this fund are protected from conversion to uses other than public outdoor recreation.

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

- Broward County
- Broward County School Board
- City of Belle Isle
- City of Coconut Creek
- City of Cooper City
- City of Coral
- City of Coral Springs
- City of Eatonville
- City of Edgewood
- City of Fort Lauderdale
- City of Hialeah
- City of Hialeah Gardens
- City of Hollywood
- City of Lauderdale Lakes
- City of Lauderhill
- City of Margate
- City of Miami Gardens
- City of Miramar
- City of Niceville
- City of North Lauderdale
- City of North Miami
- City of Oakland Park
- City of Ocoee
- City of Opa Locka
- City of Orlando
- City of Palm Beach
- City of Palm Beach Gardens
- City of Pembroke Pines
- City of Plantation
- City of Pompano Beach
- City of Riviera Beach
- City of Sunrise
- City of Tamarac
- City of Tampa
- City of Temple Terrace
- City of West Palm Beach
- City of West Park
- City of Weston
- Hillsborough County
- Hillsborough County School Board
- Lauderdale Lakes Community
- Miami-Dade County
- Orange County
- Orlando Housing Authority
- Palm Beach County
- South Florida Water Management District
- Southwest Florida Water Management District
- State of Florida
- Sunshine Water Control District
- Town of Davie
- Town of Glen Ridge
- Town of Haverhill
- Town of Juno Beach
- Town of Lake Park
- Town of Mangonia Park
- Town of Medley
- Town of Miami Lakes
- Town of Palm Beach

- Town of Palm Beach Shores
- Town of Pembroke Park
- Town of Southwest Ranches
- Town of Windermere
- University of South Florida
- Village of North Palm Beach
- West Palm Beach CRA

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 March 10, 2026.

As noted in Table C-2 of **Appendix C**, 54 public recreation areas and facilities in the six drone operating areas were developed using LWCFA grant funds.

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 in the state of Florida. 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 OpSpec amendment so that it can introduce drone package delivery operations by using the MK30 drone across the intended Florida operating areas. 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 produces 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 operating areas. 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 physical or constructive use, as defined in **Section 3.4.1**, to any of the Section 4(f) resources in the operating areas. Additionally, the FAA has determined that the Proposed Action would not convert the status or use of any Section 6(f) resources in the operating areas.

The introduction of Prime Air's drone operations may occur in areas subject to other aviation activity, necessitating the evaluation of reasonably foreseeable effects on Section 4(f) and 6(f) resources when combined with other aviation operations. Prime Air's operations would have no physical use of Section 4(f) resources because the Proposed Action has no direct interaction with any resources on the ground. Furthermore, as discussed in **Section 3.6**, the Proposed Action would not result in a significant increase in noise levels at any location within the operating areas and the short duration of en route flights would minimize any potential for significant visual impacts. Wing Aviation, LLC, is also conducting Part 135 commercial drone package delivery operations in proximity to Prime Air's proposed PADCC's and MK30 drone operation areas in Florida. However, Prime Air will communicate and coordinate with Wing Aviation, LLC, and other future operators to limit operations occurring concurrently in the same area to avoid any reasonably foreseeable effects. In the future, other drone operations or aviation activities may

be proposed to operate with this Proposed Action's operating areas. Should that occur, Prime Air understands the potential for impacts may increase due to the introduction of additional drone or other aviation activity and would work with operators and the FAA to mitigate potential impacts. The FAA would also conduct a new environmental analysis—including evaluating reasonably foreseeable effects on Section 4(f) and 6(f) resources—prior to the commencement of drone operations or other aviation activity in these 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 operating areas. These resources reflect human culture and history in the physical environment, and may include structures, objects, and other important features 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* (NHPA) (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 includes 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 1050.1G, 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

Six APEs were established pursuant to 36 CFR § 800.4(a), each encompassing approximately 175 sq mi occurring within a 7.5-mi radius surrounding each PADCC. According to geospatial data published by the National Park Service, there are 102 historic resources listed in the National Register and five National Register-eligible resources located in the six 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 **Table D-1** 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 in the state of Florida. 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.

The FAA initiated consultation with the Florida SHPO (Florida Division of Historical Resources [FDHR]) on July 30, 2025, seeking concurrence with the FAA's definition of the APEs and its finding of *no adverse effects*. On September 11, 2025, the FDHR issued a *no effects* finding for the Proposed Action.

Copies of the FDHR consultation are included in **Appendix D-1**.

The FAA also consulted with tribal governments, via regular and electronic mail, on August 13, 2025, that may potentially attach religious or cultural significance to resources in the APE, which include:

- Miccosukee Tribe of Indians of Florida
- Muscogee (Creek) Nation

- Poarch Band of Creek Indians
- Seminole Tribe of Florida
- Seminole Nation of Oklahoma

A copy of representative Government-to-Government correspondence with potentially interested tribal governments, as well as all tribal government responses, are included in **Appendix D-2**.

The introduction of Prime Air's drone operations may occur in areas subject to other aviation activity, necessitating the evaluation of reasonably foreseeable effects on historical, architectural, archaeological, and cultural resources when combined with other aviation operations. Prime Air's drone operations would have limited non-physical, reversible impacts on historic properties such as the introduction of audible and/or visual elements. 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. SHPO offices within Prime Air's proposed areas of operations also concurred with the FAA's determination, the Proposed Action, would have no adverse effects. Wing Aviation, LLC, is also conducting Part 135 commercial drone package delivery operations in proximity to Prime Air's proposed PADCC's and MK30 drone operation areas in Florida. However, Prime Air will communicate and coordinate with Wing Aviation, LLC, and other future operators to limit operations occurring concurrently in the same area to avoid any reasonably foreseeable effects. In the future, other drone operations or aviation activities may be proposed to operate with this Proposed Action's operating areas. Should that occur, Prime Air understands the potential for impacts may increase due to the introduction of additional drone or other aviation activity and would work with operators and the FAA to mitigate potential impacts. The FAA would also conduct a new environmental analysis—including evaluating reasonably foreseeable effects on historical, architectural, archaeological, and cultural resources and consultation with SHPOs and tribal governments, as appropriate—prior to the commencement of new commercial drone operations or other aviation activity in these areas.

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 operating areas, the FAA initiated an analysis of the potential noise exposure in the area that could result from implementation of the Proposed Action.

FAA Order 1050.1G, Appendix C, 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 1050.1G, *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 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 C of FAA Order 1050.1G. 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 average aircraft sound level at a location over a 24-hour period, with a 10 dB adjustment added to those noise events occurring from 10 p.m. to 7 a.m. A significant noise impact is defined in Appendix C of FAA Order 1050.1G 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 **Figure 2-1**, each operating area covers approximately 175 sq mi, and the estimated population is roughly 7,700,000 for all operating areas. The total estimated population and population density for each PADDC operating area are listed in **Table 3-3**.

TABLE 3-3
MK30 OPERATING RANGE POPULATION SUMMARY BY PADDC

PADDC	Total Population	Population Density (People/Sq Mi)
SFL1	513,123	2,932.1
SFL3	722,618	4,129.2
SFL6	328,905	1,879.5
SFL9	939,039	5,365.9
TPA1	184,696	1,055.4
TPA4	463,328	2,647.6

SOURCE: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates.

There are 14 airports, seven seaplane bases, and 48 heliports located in the MK30 drone's proposed areas of operations, as listed in **Table 3-4**.[41]

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

TABLE 3-4
AIRPORTS AND HELIPORTS WITHIN EACH DRONE OPERATING AREA

FAA Identifier	Name	Facility Type	PADDC Operations Area(s)	Airspace Classification
MCF	MacDill Air Force Base	Airport	TPA1	D
FD77	Wimauma Air Park	Airport	TPA1	G, Private
18FL	Bahia Beach Heliport	Heliport	TPA1	—
FL38	St Joseph's Hospital Heliport	Heliport	TPA1	—
73FA	South Shore Hospital Heliport	Heliport	TPA1	—
TPA	Tampa International Airport	Airport	TPA4	B
VDF	Tampa Executive Airport	Airport	TPA4	G
FL72	Mezrah Seaplane Base	Seaplane Bases	TPA4	G, Private
9FD6	Academy Heliport	Heliport	TPA4	—
68FL	EMS Heliport	Heliport	TPA4	—
88FA	Tampa Hard Rock Helipad	Heliport	TPA4	—
FD01	Hillsborough County Fire Rescue Heliport	Heliport	TPA4	—
04FD	Tampa General Hospital Brandon Healthplex Heliport	Heliport	TPA4	—
3FA1	Adventhealth Tampa Heliport	Heliport	TPA4	—
ISM	Kissimmee Gateway Airport	Airport	SFL1	D
MCO	Orlando International Airport	Airport	SFL1	B
ORL	Orlando Executive Airport	Airport	SFL1	D
91FL	Lake Conway North Seaplane Base	Seaplane Bases	SFL1	B, Private
0FL5	Lake Conway South Seaplane Base	Seaplane Bases	SFL1	B, Private
89FL	Lake Hiawassee Seaplane Base	Seaplane Bases	SFL1	G, Private
25FD	Ritz Carlton Grande Lakes Seaplane Base	Seaplane Bases	SFL1	G, Private
98FL	Sand Lake Seaplane Base	Seaplane Bases	SFL1	G, Private
FD43	Summer Lakes Seaplane Base	Seaplane Bases	SFL1	G, Private
1FA8	Adventhealth Millenia ER Heliport	Heliport	SFL1	—
2FD7	Orlando Heli Tours Heliport	Heliport	SFL1	—
3FD5	Arnold Palmer Hospital Heliport	Heliport	SFL1	—
FD99	Dr P Phillips Hospital Heliport	Heliport	SFL1	—
FL05	Geico Helistop Heliport	Heliport	SFL1	—
FD41	Grand Cypress Resort Heliport	Heliport	SFL1	—
97FD	Helicopters International Heliport	Heliport	SFL1	—
FL76	Heli-Partners I-Drive Heliport	Heliport	SFL1	—
92FL	Lake Willis Heliport	Heliport	SFL1	—
82FD	Lockheed Martin Heliport	Heliport	SFL1	—
32FL	Meyer Heliport	Heliport	SFL1	—
FA91	Orange County Convention Center Heliport	Heliport	SFL1	—
ORL	Orange County Sheriff's Office Heliport	Heliport	SFL1	—

FAA Identifier	Name	Facility Type	PADDC Operations Area(s)	Airspace Classification
2FL5	Orlando Crossings Heliport	Heliport	SFL1	—
FD28	Orlando Regional Medical Center Heliport	Heliport	SFL1	—
7FA5	Premium Heliport	Heliport	SFL1	—
13FD	Yelvington Heliport	Heliport	SFL1	—
FLL	Fort Lauderdale Hollywood International Airport	Airport	SFL3	C
FXE	Fort Lauderdale Executive Airport	Airport	SFL3	D
2FL1	Broward County Civic Arena Heliport	Heliport	SFL3	—
56FA	HCA Florida Woodmont Hospital Heliport	Heliport	SFL3	—
FD82	HCA Florida Westside Hospital Heliport	Heliport	SFL3	—
PBI	Palm Beach International Airport	Airport	SFL6	C
2FL4	Brady Heliport	Heliport	SFL6	—
59FL	Florida Power & Light-Juno Beach Heliport	Heliport	SFL6	—
5FA6	FPL PGA Office Helistop Heliport	Heliport	SFL6	—
5FL5	Palm Beach County Judicial Center Heliport	Heliport	SFL6	—
87FD	Palm Beach Gardens Medical Center Heliport	Heliport	SFL6	—
1FD7	PGA National Heliport	Heliport	SFL6	—
5FD2	Rybovich Heliport	Heliport	SFL6	—
64FD	St Marys Hospital Heliport	Heliport	SFL6	—
55FL	The Murphy Company Heliport	Heliport	SFL6	—
7FL5	West Palm Beach Police Station Heliport	Heliport	SFL6	—
91FD	WPEC Inc Heliport	Heliport	SFL6	—
FL51	WPTV Heliport	Heliport	SFL6	—
FLL	Fort Lauderdale Hollywood International Airport	Airport	SFL9	C
MIA	Miami International Airport	Airport	SFL9	B
OPF	Miami-Opa Locka Executive Airport	Airport	SFL9	D
HWO	North Perry Airport	Airport	SFL9	D
84FL	Capeletti Heliport	Heliport	SFL9	—
FL79	FPL RMO Heliport	Heliport	SFL9	—
0FD2	Hard Rock Stadium Heliport	Heliport	SFL9	—
FA21	Memorial Hospital West Helistop Heliport	Heliport	SFL9	—
1FL4	NBC 6 (WTVJ) Heliport	Heliport	SFL9	—
1FA5	Palmetto General Hospital Heliport	Heliport	SFL9	—
7FD3	Tootsie's Cabaret Heliport	Heliport	SFL9	—

SOURCE: ESRI, 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 the state of Florida. As such, no noise impacts 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).[42] 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 operating 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 location 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 drone transiting to and from the PADDC.

Noise Exposure

Utilizing the operational projections defined in **Chapters 1** and **2**, the noise analysis methodology detailed in **Appendix E-1** was used to estimate DNL levels for the proposed Florida 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, with 100 of the 1,000 daily deliveries (10%) occurring during the periods from 6 a.m. to 7 a.m. and 10 p.m. to 10:30 p.m., the extent of noise exposure associated with PADDC operations are shown in **Figures E-1** through **E-6** 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**. The noise analysis includes a 10 dB penalty which is applied to the 100 operations that are anticipated to occur during the nighttime period from 10 p.m. to 7 a.m. and is equivalent to 1 nighttime operation being counted as 10 daytime operations. These 100 nighttime delivery operations would be equivalent to 1,000 daytime deliveries, and when combined with the daytime operations, would be equivalent to a combined total of 1,900 daytime equivalent delivery operations. **Table 3-5** provides the

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

extent of noise exposure for PADDC operations for the DNL 65 dB and lower noise levels. Note that the data presented in **Table 3-5** only includes noise exposure associated with PADDC operations.

TABLE 3-5
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 59.7 dB	DNL 60 dB	DNL 65 dB
≤1,900	≤693,500	1,050	550	300	300	150

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 PADDCs 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 would be half, or 500 daily delivery overflights. To account for operations from PADCC's during the period from 6 a.m. to 7 a.m. and from 10 p.m. to 10:30 p.m., it is assumed approximately 50 of the 500 daily delivery overflights (10%) would occur during these periods. These 50 nighttime delivery overflight operations would be equivalent to 500 daytime deliveries. When combined with the daytime delivery overflight operations, this would be representative of a combined total of 950 daytime equivalent delivery overflight operations. Since each delivery involves both an outbound and inbound flight path, this equates to 1,900 daily overflights. 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 46.0 dB in any location within the operating areas.

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 average annual daily distribution of deliveries that could occur at a single delivery location in each operating area. The distribution of average annual daily deliveries ranges from one to four deliveries per operating day and conservatively assumes that at least one delivery will occur during the nighttime period between 6 a.m. and 7 a.m. and 10 p.m. and 10:30 p.m. This nighttime delivery is equivalent to 10 daytime deliveries, and when combined with daytime deliveries, is equivalent to a total combined maximum of 13 equivalent daytime delivery operations. The noise exposure for delivery operations includes outbound and inbound en route overflights at the typical operating altitude range of 180 to 377 ft AGL for operations associated with deliveries to other locations. The outbound en route altitude is expected to be flown between 180 and 279 ft AGL. The inbound en route altitude is expected to be flown between 279 and 377 ft 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 ft, which is representative of the closest distance a person may approach before the drone takes automated actions to safely cancel the

delivery. This is in addition to the minimum measured distance from the drone for which noise measurement data was available for a delivery, which is 25 ft. Values were also calculated at distances of 50 ft, 75 ft, 100 ft, and 125 ft 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.[43] The noise exposure for any one delivery point (with en route noise as mentioned above) is provided in **Table 3-6**.

TABLE 3-6
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]	≤15[3]	<= 5,475	57.2	55.1	51.8	50.2	48.9	48.1

NOTES:

1. Minimum possible listener distance from drone.
2. Minimum measured listener distance.
3. Assumes conservative estimate of overflights associated with 500 deliveries or 937 overflights (with nighttime equivalent operations), over any one delivery location as mentioned above. DNL values are calculated from the logarithmic summation of the DNL values presented in Table 9 for deliveries with the en route noise level of DNL 45.9 dB derived from Tables 7 and 8 in the Noise Technical Report in Appendix E-1.

SOURCE: ESA, 2025.

Table 3-6 shows that, with the maximum number of average annual daily deliveries at a single location, including overflights, noise levels for the estimated number of deliveries will not exceed the FAA's significance threshold for noise of DNL 65 dB in any of the areas where Prime Air anticipates conducting deliveries.

Total Noise Exposure Results

The maximum noise exposure levels within the operating areas would occur at the PADDC sites where noise levels at or above DNL 50 dB would extend approximately 1,050 ft from each PADDC. Noise levels at or above DNL 65 dB would extend approximately 150 ft from the PADDC. Additionally, the estimated noise exposure for en route operations could reach up to DNL 46 dB at any location within the operating areas for a single PADCC operating area. Lastly, the resulting noise exposure from deliveries at any residential-zoned property line would not be expected to exceed DNL 48.1 dB.

As explained in **Section 3.6.1** above, the FAA has an established noise significance threshold, defined in FAA Order 1050.1G, which is used when assessing noise impacts in a particular operating 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, noise impacts from operations are not expected to result in a significant impact. Noise generated by the operations is also not expected to be incompatible with noise sensitive resources within each operating area.

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

Per FAA Order 1050.1G, Appendix C,[44] 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[45]
- For DNL 45 dB to < 60 dB: ± 5 dB[46]

FAA Order 1050.1G 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.

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 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 14 airports, seven seaplane bases, and 48 heliports located in the proposed areas of operations. The controlled surface areas of Class B, C, and D airspace for multiple airports are located in a portion of the drone's proposed operating areas. For areas where the drone operating area does not overlap with any Class B, C, or D airspace, there would be little potential for the reasonably foreseeable effect of traditional aircraft noise combined with drone noise. The conservative estimate of DNL 53.8 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 as shown in **Table 3-7**.

TABLE 3-7
REASONABLY FORESEEABLE NOISE EXPOSURE

Noise Source	Description	DNL (dB)	Energy $10^{(DNL/10)}$	Combined Noise Sources in DNL (dB)
1	Proposed Action[1]	57.2	524,807.5	—
2	Airports within Study Area	53.8	239,883.3	—
1+2	Proposed Action + Airports	—	764,690.8	58.8
Delta	Reasonably Foreseeable Change in Noise Exposure	—	—	5.0

NOTES:
1. Proposed Action DNL based off exposure at delivery site location.
SOURCE: ESA, 2025.

[44] https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050.1G.pdf.
[45] The FAA considers these increases to be "reportable" but not a significant impact.
[46] The FAA considers these increases to be "reportable" but not a significant impact.

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-related reasonably foreseeable effects on the air traffic near controlled surfaces. The introduction of Prime Air's commercial drone delivery service is not expected to result in reasonably foreseeable effects with other existing Part 135 commercial drone operators, such as Wing Aviation, LLC, who are conducting operations in proximity to Prime Air's proposed PADCC's and MK30 drone operation areas in Florida. Prime Air will communicate and coordinate with Wing Aviation, LLC, and other future operators to limit operations occurring concurrently in the same area to avoid any 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 operating 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 other reasonably foreseeable impacts—prior to another operator beginning drone package delivery operations in these areas. Areas of existing aviation noise sources within the operating areas would be avoided; thus, the Proposed Action would not contribute to significant reasonably foreseeable noise impacts.

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 operating 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 operating 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 the state of Florida. 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 operating areas, including Section 4(f) properties. The short duration that each drone flight could be seen from any resource 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-sq-mi operating area, would minimize any potential for significant visual impacts at any location in the operating areas. Any visual effects are expected to be similar to existing air and drone traffic in the vicinity of the operating areas. Therefore, the Proposed Action would not result in significant visual impacts.

The introduction of Prime Air's drone operations may occur in areas subject to other aviation activity, necessitating the evaluation of reasonably foreseeable effects on visual impacts when combined with other aviation operations. Prime Air's drone operations make no changes to any landforms or land uses, and visual effects would be short-term in nature; thus, there would be no effect on the visual character of the area. Furthermore, the distribution of flights throughout each proposed operating area would minimize any potential for significant visual impacts at any location and any visual effects are expected to be similar to existing air and drone traffic in the vicinity of the operating areas and not be significant. Wing Aviation, LLC, is also conducting Part 135 commercial drone package delivery operations in proximity to Prime Air's proposed PADCC's and MK30 drone operation areas in Florida. However, Prime Air will communicate and coordinate with Wing Aviation, LLC, and other future operators to limit operations occurring concurrently in the same area to avoid any reasonably foreseeable effects. In the future, other drone operations or aviation activity may be proposed to operate with this Proposed Action's operating areas. Should that occur, Prime Air understands the potential for visual impacts may increase due to the introduction of additional drone or other aviation activity and would work with operators and the FAA to mitigate potential impacts. The FAA would also conduct a new environmental analysis—including evaluating reasonably foreseeable effects on visual impacts—prior to the commencement of drone operations or other aviation activity in these areas. The FAA would also conduct a new environmental analysis—including evaluating reasonably foreseeable effects on visual impacts—prior to the commencement of drone operations or other aviation activity in these areas.

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CHAPTER 4
List of Preparers and Agencies Consulted

4.1 Preparers

Name and Affiliation	Years of Industry Experience	EA Responsibility
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Susumu Shirayama, FAA AEE (Office of Environment and Energy, Noise Division [AEE-100])	22	Environmental Protection Specialist, Noise Analysis and Document Review
Preparers		
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Sean Burlingame/ESA	17	NEPA documentation
Patricia Davis/ESA	4	NEPA documentation
Patrick Hickman/ESA	14	NEPA documentation
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Scott McIntosh/ESA	12	Noise Modeling
Chris Nottoli/ESA	10	Noise modeling
Brendon Quinton/ESA	8	NEPA documentation
Ted Reese/ESA	15	NEPA documentation
Susan Shaw/ESA	23	NEPA documentation
Neal Wolfe/ESA	23	Project Manager, NEPA documentation

4.2 Agencies Consulted

List of Agencies Consulted
U.S. Fish and Wildlife Service
Florida Division of Historical Resources
Florida Department of Environmental Protection
Miccosukee Tribe of Indians of Florida
Muscogee (Creek) Nation
Poarch Band of Creek Indians
Seminole Nation of Oklahoma
Seminole Tribe of Florida

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