5 Environmental Consequences

This chapter discusses the potential environmental impacts that could result from implementing the Proposed Action and the No Action. Specifically, this EA considers effects on the environmental resource categories identified in FAA Order 1050.1F. Both the Proposed Action and the No Action were evaluated under forecasted 2021 conditions, which is the first year the Proposed Action could potentially be implemented, and under forecasted 2026 conditions. This evaluation considers the direct, indirect, and cumulative effects associated with the Proposed Action and No Action, as required under FAA Order 1050.1F.

Potential environmental impacts are identified for the environmental resource categories described in **Section 4.3**. Neither the Proposed Action nor the No Action would involve land acquisition; physical changes to the environment resulting from ground disturbance or construction activities; changes in patterns of population movement or growth, increases in public service demands, or business and economic activity; or generation, disturbance, transportation, or treatment of hazardous materials. Therefore, neither Alternative is expected to result in impacts to certain environmental resource categories (please see **Section 4.2** for a list of excluded categories). The excluded environmental resource categories are not further discussed in this chapter.

Table 5-1 identifies the environmental impact categories that the Proposed Action could potentially affect, the thresholds of significance used to determine the potential for impacts, and a side-by-side comparative summary of the potential for environmental impacts resulting from implementing the Proposed Action under 2021 and 2026 forecast conditions.

Table 5-1 Summary of Potential Environmental Impacts

Environmental Impact Category	Threshold of Significance/Factors to Consider	Significant Impact? 2021	Significant Impact? 2026
Noise and Noise Compatible Land Use	A significant noise impact would occur if the proposed action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65dB level due to a DNL 1.5dB or greater increase, when compared to the No Action for the same timeframe.	No	No
Air Quality	A significant impact would occur if the proposed action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the Environmental Protection Agency under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.	No	No

Table 5-1 Summary of Potential Environmental Impacts

Environmental Impact Category	Threshold of Significance/Factors to Consider	Significant Impact? 2021	Significant Impact? 2026
Wildlife (Avian Species)	A significant impact to federally-listed threatened and endangered species would occur when the United States Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) determines that the proposed action would be likely to jeopardize the continued existence of the species in question, or would result in the destruction or adverse modification of Federally-designated critical habitat. Lesser impacts including impacts on non-listed species could also constitute a significant impact based on consideration factors such as long-term or permanent loss of unlisted wildlife species and adverse impacts to special status species or their habitats. The FAA has not established a significance threshold for non-listed species.	No	No
Climate	The FAA has not established a significance threshold for Climate and has not identified specific factors to consider in making a significance determination.	No	No
Department of Transportation Act, Section 4(f) Resources	A significant impact would occur if the proposed action involves more than a minimal physical use of a Section 4(f) resource or constitutes a "constructive use" based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource. Resources that are protected by Section 4(f) are publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance; and publicly or privately owned land from an historic site of national, state, or local significance. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished. Substantial impairment occurs when the activities, features, or attributes of the Section 4(f) resource that contribute to its significance or enjoyment are substantially diminished.	No	No
Historic Properties and Cultural Resources	The FAA has not established a significance threshold for Historical and Cultural Resources.	No	No
Energy Supply (Aircraft Fuel)	The FAA has not established a significance threshold for Energy Supply. However, a significant factor to consider is if the action would have the potential to cause demand to exceed available or future (project year) supplies of these resources.	No	No

Table 5-1 Summary of Potential Environmental Impacts

Environmental Impact Category	Threshold of Significance/Factors to Consider	Significant Impact? 2021	Significant Impact? 2026
Environmental Justice	The FAA has not established a significance threshold for Environmental Justice. However, significant factor to consider to determine potential significant impact is if the action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population, i.e., a low-income or minority population due to significant impacts in other environmental impact categories, and/or causes impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population	No	No
Visual Effects	The FAA has not established a significance threshold for Visual Resources / Visual Character. Significant factors to consider include potential affect an action has on the nature of the visual character of the area, potential to contrast with the visual resources and/or visual character in the study area, and/or potential to block or obstruct the views of visual resources	No	No

Source: FAA Order 1050.1F, Exhibit 4-1, July 2015.
Prepared By: ATAC Corporation, May 2020.

The following sections describe the impact findings for each environmental resource category, followed by a discussion of potential cumulative impacts. In summary, no significant impacts to any environmental resource category have been identified.

5.1 Noise and Compatible Land Use

This section discusses the analysis of aircraft noise exposure under the Proposed Action and the No Action, under both 2021 and 2026 forecast conditions. This discussion includes identifying the differences in noise exposure between the Proposed Action and the No Action. This comparison is used to determine if implementing the Proposed Action would result in significant noise impacts. Additional information on noise metrics and the basics of noise can be found in **Appendix E**. Detailed information on the noise analysis prepared for the South-Central Florida Metroplex Project is included in **Appendix I**.

5.1.1 Summary of Impacts

Aircraft noise exposure was modeled for both the Proposed Action and the No Action under 2021 and 2026 forecast conditions. The noise analysis demonstrates that implementing the Proposed Action would not result in a day-night average sound level (DNL) increase of 1.5 dBA or higher in noise- sensitive areas exposed to DNL 65 dB or higher. Therefore, neither the Proposed Action nor No Action would result in a significant noise impact.

5.1.2 Methodology

The noise analysis evaluated noise exposure to communities within the General Study Area from aircraft forecasted to be operating under Instrument Flight Rules (IFR) -filed flight plans, at altitudes between ground level up to 18,000 feet above ground level (AGL) due to the presence of one or more national parks.[60] IFR-filed aircraft activity was forecasted for the years 2021 and 2026 and used to model conditions under both the Proposed Action and the No Action. Noise modeling was conducted using Aviation Environmental Design Tool (AEDT) 2d, the FAA-required noise model for aviation projects, including air traffic changes over large areas and altitudes over 3,000 feet AGL.[61] While this is the policy delineating under what circumstances the AEDT model is to be used, this policy does not delineate the methodology applied in modelling noise. All noise modelling for this analysis was conducted from the ground elevation up to 18,000 feet AGL. All noise results are reported at the ground level elevation of that point based on the AEDT 2d terrain model.

If the FAA approves the Proposed Action, the agency expects to begin implementation in 2021. Therefore, aircraft noise modeling was conducted for 2021 and five years later (2026), as required by FAA Order 1050.1F. Future year noise exposure levels modeled for the Proposed Action and the No Action were compared to determine whether there is a potential for noise impacts. While the overall number and type of aircraft operations will increase between 2021 and 2026, the number and type of aircraft operations are the same under both the Proposed Action and No Action in 2021 and 2026. The Proposed Action does not include developing or constructing facilities, such as runways or terminal expansions, that would be necessary to accommodate an increase in aviation activity; therefore, no additional growth in operations associated with the Proposed Action is anticipated. The noise analysis reflects the change in noise exposure at the ground elevation at that point resulting from the proposed changes in aircraft routes (i.e., flight tracks) under the Proposed Action compared to the No Action.

Detailed information on IFR-filed aircraft operations within the General Study Area was assembled for input into AEDT, including the following data:

Average Annual Day IFR-Filed Aircraft Flight Schedules: The IFR-filed aircraft flight schedules identify arrival and departure times, aircraft types, and origin/destination information for an average annual day (AAD) in 2021 and in 2026. The AAD represents all the aircraft operations for every day in a study year divided by 365, the number of days in a year. The AAD does not reflect a particular day, but is meant to represent a typical day over a period of a year. The forecast was based on the FAA's 2019 Terminal Area Forecast (TAF),[62] modified for 2021 and 2026 with additional details using previously identified arrival/departure times, aircraft types, and origin/destination information. More detail related to the development of the forecasts is provided in **Appendix H**.

Weather: The AEDT model includes data for multiple meteorological parameters, including temperature, pressure, and humidity. Weather conditions for all Study Airports were defined and used in the noise study. Further discussion on the weather data employed in the AEDT model can be found in **Appendix I**.

60 FAA Order 1050.1F Desk Reference, *Noise and Noise-Compatible Land Use*, App. B-1.3, July 2015

61 FAA Order 1050.1F Desk Reference, *Noise and Noise-Compatible Land Use*, Sec. 11.1.3, July 2015.

62 U.S. Department of Transportation, Federal Aviation Administration, *Terminal Area Forecast*, 2019 [https://aspm.faa.gov/main/taf.asp (Accessed October 2019)].

Flight Tracks: The flight tracks used in noise modeling were based on radar data collected for the Existing Conditions (June 1, 2017 to May 30, 2018) noise analysis and information provided by FAA Air Traffic Control (ATC) personnel. The proposed final designs from the D&I Team were extensively reviewed over three non-consecutive weeks in June, August, and September of 2019 with applicable air traffic subject matter experts to obtain: anticipated aircraft routings; anticipated procedure usage; anticipated typical operation; anticipated instances of aircraft altitude, location, timing; and other operational influences for inclusion to the detailed AEDT modeling process. Aircraft routings under both the No Action and Proposed Action are depicted on **Exhibit 3-7 through 3-20** in **Chapter 3**, *Alternatives*. For the Proposed Action, flight tracks were developed from the aircraft ATC procedures created by the DEN Metroplex Design & Implementation (D&I) Team using the Terminal Area Route Generation, Evaluation, Traffic and Simulation (TARGETS) program. The majority of the No Action modeled flight tracks are based on the Existing Conditions noise analysis. The remaining No Action flight tracks for amended or new ATC procedures were modeled based on input from the air traffic control experts who developed the ATC procedures. Illustrations depicting Existing Conditions radar tracks and Proposed Action ATC procedure designs were developed and shared with the D&I Team as part of the consultation process. The consultations were conducted to seek out key model input assumptions such as frequency of Proposed Action ATC procedure usage and air traffic control techniques, such as vectoring. The assumptions were then used for refining model track locations, altitude profiles, and utilization.

TARGETS flyability lines, or the lines indicating the actual 3D path of different categories of aircraft ideally flying the ATC procedure for the Proposed Action ATC procedures served as the center of the 1 NM and 0.3 NM containment area for RNAVs and RNPs, respectively. The containment area is generally where dispersed tracks are contained, but during the D&I consultation process, air traffic control experts could indicate the need for vectors off of the RNAV with a rejoin of the RNAV at a later point. For those identified cases NIRS model tracks were developed to account for that type of dispersion.

Runway Use: Runway use percentages were identified for all runways at the Study Airports. Forecasted aircraft operations were assigned to particular runways representing operating conditions at the Study Airports under Proposed Action and No Action conditions. Runway use patterns did not change under the Proposed Action at the Study Airports compared to the No Action.

More detail related to the development of the AEDT model input files is provided in **Appendix I**.

As discussed in **Section 4.3.7.1**, the AEDT model was used to compute DNL values for 2021 and 2026 Proposed Action and No Action conditions at multiple sets of data points throughout the General Study Area:

- 210,582 2010 Census block centroids containing reported population;
- 117,424 uniform grid points at 0.5 NM intervals on a uniform grid covering the General Study Area,
- 95,366 points used to calculate DNL values at potential Department of Transportation Act (DOT), Section 4(f) resources, including 873 (represented by 880 total points) National Register listed historic sites; and 7,231 unique points representing other Section 4(f) resources.

As discussed in **Section 4.3.7.1**, DNL is the FAA's primary noise metric. **Table 5-2** provides the criteria used to assess the changes in aircraft noise exposure attributable to the Proposed Action compared with the No Action. FAA Order 1050.1F defines a significant impact as an increase of DNL 1.5 dB at noise-sensitive land use locations (e.g., residences, schools, etc.) exposed to aircraft noise of DNL 65 dB or higher under the Proposed Action. For example, an increase from 63.5 dB to 65 dB is considered a significant impact.

FAA Order 1050.1F also recommends that when there are DNL increases of 1.5 dB or more at noise-sensitive locations in areas exposed to aircraft noise of DNL 65 dB and higher, DNL increases of 3 dB or more in areas exposed to aircraft noise between DNL 60 dB and 65 dB should also be evaluated and disclosed. It is important to note that DNL increases of 3 dB in areas exposed to aircraft noise below DNL 65 dB are not considered "significant impacts" but are to be considered in the environmental evaluation of a proposed project.

FAA Order 1050.1F also stipulates that changes in exposure of DNL 5 dB or greater in areas exposed to aircraft noise between DNL 45 dB and 60 dB should be considered for airspace actions, such as changes to air traffic routes. This threshold was established in 1990, following issuance of an FAA noise screening ATC procedure to evaluate whether certain airspace actions above 3,000 feet AGL might increase DNL levels by 5 dB or more. The FAA prepared this noise-screening ATC procedure because experience indicated that DNL increases 5 dB or more at cumulative levels well below DNL 65 dB could be disturbing to people and become a source of public concern. As shown in **Table 5-2**, a 3 dB increase in areas exposed to DNL 60 to 65 dB and a 5 dB increase in areas exposed to DNL 45 to 60 dB are considered reportable noise increases.

Table 5-2 Criteria for Determining Impact of Changes in Aircraft Noise

DNL Noise Exposure Level	Increase in DNL with Proposed Action	Aircraft Noise Exposure Change Consideration
DNL 65 and higher	DNL 1.5 dB or more[1/]	Exceeds Threshold of Significance
DNL 60 to 65	DNL 3.0 dB or more[2/]	Reportable Noise Increase (Considered When Evaluating Air Traffic Actions)
DNL 45 to 60	DNL 5.0 dB or more[3/]	Reportable Noise Increase (Information Disclosed When Evaluating Air Traffic Actions)

Notes:
1/ Source FAA Order 1050.1F Desk Reference, Pg. 11-9; Title 14 C.F.R. Part 150.21 (2) (d), July 15, 2015; and Federal Interagency Committee on Noise, Federal Agency Review of Selected Airport Noise Issues, August 1992.
2/ Source FAA Order 1050.1F Desk Reference (July, 15, 2015, Pg. 11-9; and Federal Interagency Committee on Noise, Federal Agency Review of Selected Airport Noise Issues, August 1992.
3/ Source FAA, Order 1050.1F Desk Reference, Pg. 11-9.

Source: FAA Order 1050.1F Desk Reference, Ch. 11, *Noise and Noise-Compatible Land Use*, July 2015.
Prepared by: ATAC Corporation, March 2020

5.1.3 Potential Impacts – 2021 and 2026

Table 5-3 summarizes the results of the noise analysis for2021 and 2026 conditions. The results for both years indicate that, when compared to the No Action Alternative, the Proposed Action would not result in a DNL 1.5 dB or higher increase in noise-sensitive areas exposed to DNL 65 dB or higher. Furthermore, no population would experience a reportable noise increase in areas exposed to DNL between 60 dB and 65 dB or between 45 dB and 60 dB.

These results indicate that Proposed Action would not result in a significant noise exposure impact on population exposed to DNL 65 dB or higher levels under the Proposed Action or produce reportable noise increases in areas exposed to DNL 45 dB to 65 dB.

Table 5-3 Change in Potential Population Exposed to Aircraft Noise – 2026

DNL Noise Exposure Level Under the Proposed Action	Increase in DNL with the Proposed Action	Population Exposed to Noise that Exceeds the Threshold	
		2021	2026
DNL 65 and higher	DNL 1.5 dB or greater	0	0
DNL 60 to 65	DNL 3.0 dB or greater	0	0
DNL 45 to 60	DNL 5.0 dB or greater	0	0

Sources: U.S. Census Bureau, 2010 Census (population centroid data), Accessed October 2019; ATAC Corporation, May 2020 (AEDT modeling results).
Prepared by: ATAC Corporation, May 2020.

5.1.4 Noise Sensitive Uses and Areas

In addition to disclosing potential noise impacts to residential population, FAA Order 1050.1F requires the FAA to identify and describe noise sensitive uses and areas in the General Study Area. As defined in Paragraph 11-5b(8) of Order 1050.1F, 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." Potential impacts to residential population are discussed in **Section 5.1.3**. Potential impacts to recreational areas, areas with wilderness characteristics, wildlife refuges, and cultural and historical sites are discussed in **Sections 5.5 and 5.6**. The noise analysis results indicate that the Proposed Action when compared to the No Action would not result in a DNL 1.5 dBA or higher increase to noise sensitive uses or noise sensitive areas in locations exposed to DNL 65 dB or higher. In addition, these resources would not experience reportable noise increases between DNL 60 dB and 65 dB and DNL 45 and 60 dB.

5.1.5 Noise Compatible Land Use

FAA Order 1050.1F requires that EA documents discuss possible conflicts between the proposed action and the objectives of federal, regional, state, local and tribal land use plans, policies and controls for the area concerned. Potential impacts to noise compatible land use were focused on changes in aircraft noise exposure resulting from implementing the Proposed Action. FAA Order 1050.1F states, "The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impact. If the noise analysis concludes that there is no significant impact, a similar conclusion usually may be drawn with respect to compatible land use." Air traffic actions like the South-Central Florida Metroplex Project do not result in direct impacts to land such as ground disturbance. Accordingly, the compatible land use analysis relies on changes in aircraft noise exposure between the Proposed Action and the No Action (discussed in **Section 5.1**) as the basis for determining compatible land use impacts within the General Study Area.

5.1.5.1 Potential Impacts – 2021 and 2026

As stated in **Section 5.1**, the Proposed Action, when compared with the No Action, would not result in changes in aircraft noise exposure in 2021 or 2026 that would exceed the FAA's significance threshold. Likewise, there are no conflicts with federal, regional, state, local land

use plans, policies and controls. Therefore, the Proposed Action would not result in significant compatible land use impacts.

Under the No Action, there would be no changes to air traffic routing in the General Study Area and no changes in aircraft noise exposure expected to occur in either 2021 or 2026. Therefore, the No Action would not result in significant compatible land use impacts

5.2 Air Quality

This section discusses the analysis of air quality impacts under the Proposed Action and the No Action.

5.2.1 Summary of Impacts

The Proposed Action would result in a slight increase in emissions when compared to the No Action. However, operational changes likely to result in a change in emissions under the Proposed Action would occur at or above 3,000 feet AGL and are presumed to conform to the applicable state implementation plans (SIPs). For any changes to flight paths below that mixing height, they are also presumed to conform to the SIPs because they are modifications to air-traffic procedures that are designed to enhance operational airspace efficiency.[63] The slight increase in emissions is expected to have little if any effect on emissions or ground concentrations. Therefore, no significant impacts to air quality would be anticipated.

The No Action would not result in a change in the number of aircraft operations or air traffic routes; therefore, no impacts to air quality would be anticipated.

5.2.2 Methodology

Air quality modelling for this analysis was conducted from the ground elevation up to where IFR aircraft operate at or below 18,000 feet AGL. Typically, significant air quality impacts would be identified if an action would result in the exceedance of one or more of the NAAQS for any time period analyzed.[64] Section 176(c) of the *Clean Air Act* requires that federal actions conform to the appropriate SIP in order to attain the air quality goals identified in the CAA. However, a conformity determination is not required if the emissions caused by a federal action would be less than the *de minimis* levels established in regulations issued by EPA.[65] FAA Order 1050.1F provides that further analysis for NEPA purposes is normally not required where emissions do not exceed the EPA's *de minimis* thresholds.[66] The EPA regulations identify certain actions that would not exceed these thresholds, including ATC activities and adoption of approach, departure, and en route ATC procedures for aircraft operations above the mixing height specified in the applicable SIP (or 3,000 feet AGL in places without an established mixing height). In addition, the EPA regulations allow federal agencies to identify specific actions as "presumed to conform" (PTC) to the applicable SIP.[67] In a notice published in the Federal Register, the FAA has identified several actions that "will not exceed the applicable *de minimis* emissions levels" and, therefore, are presumed to

63 Federal Presumed to Conform Actions under General Conformity, 72 Fed. Reg. 41565 (July 30, 2007).

64 FAA Order 1050.1F Desk Reference, Section 1, July 2015.

65 40 C.F.R. § 93.153(b).

66 FAA Order 1050.1F Desk Reference, Section 1, July 2015.

67 *Id*. at 93.153(f).

conform, including ATC activities and adoption of approach, departure, and en route ATC procedures for air operations.[68] The FAA's PTC notice explains that aircraft emissions above the mixing height do not have an effect on pollution concentrations at ground level. The notice also specifically notes that changes in air traffic ATC procedures above 1,500 feet AGL and below the mixing height "would have little if any effect on emissions and ground concentrations."[69] Furthermore, "air traffic actions below the mixing height are also presumed to conform when modifications to routes and ATC procedures are designed to enhance operational efficiency (i.e., to reduce delay)."[70]

5.2.3 Potential Impacts – 2021 and 2026

Under the Proposed Action there would be a slight increase in fuel burn (0.46 percent in 2021 and 0.43 percent in 2026) when compared to the No Action. While increased fuel burn corresponds with an increase in emissions, operational changes likely to result in a change in emissions would occur at or above 3,000 feet AGL and are presumed to conform to the applicable state implementation plans (SIPs). For any changes to flight paths below that mixing height, they are also presumed to conform to the SIPs because they are modifications to air-traffic procedures that are designed to enhance operational airspace efficiency. Thus, no further air quality analysis is necessary, a conformity determination is not required, and the Proposed Action would not result in a significant impact to air quality. The No Action would not result in a change in the number of aircraft operations or air traffic routes; therefore, no impacts to air quality would be anticipated.

5.3 Wildlife (Avian and Bat Species) and Migratory Birds

This section discusses the analysis of potential impacts to avian and bat species under the Proposed Action and the No Action.

5.3.1 Summary of Impacts

The greatest potential for impacts to wildlife species would result from wildlife strikes on avian and bat species at altitudes below 3,000 feet AGL. Changes to flight paths under the Proposed Action would primarily occur at or above 3,000 feet AGL. Therefore, the Proposed Action would not result in significant impacts to avian and bat species when compared with the No Action.

The No Action would not involve changes to air traffic flows, land acquisition, construction, or other ground disturbance activities. Therefore, the No Action would not result in significant impacts to fish, wildlife, or plants.

68 Federal Presumed to Conform Actions under General Conformity, 72 Fed. Reg. 41565 (July 30, 2007).

69 *Id.*

70 *Id.*

5.3.2 Methodology

The FAA's *Wildlife Strike Database*[71] and an accompanying annual wildlife strike compendium[72] is the best information available for assessing potential impacts of aircraft on wildlife. Strike reports over the period 1990-2018 are aggregated nationally as well as for individual airports are available from the database and compendium to understand existing conditions. Strike reports are comparable to known information on the presence of specific species of concern to corroborate the reports.

This analysis involved a review of wildlife strike reports[73] for the Study Airports under both the Proposed Action and the No Action, and an evaluation of the potential for the presence of federal- and state-listed threatened and endangered species (i.e., special-status species) within the General Study Area. The FAA compared modifications in flight ATC procedures to the occurrence of special-status species to qualitatively assess the likelihood of whether wildlife strikes might change under the Proposed Action.

5.3.3 Potential Impacts – 2021 and 2026

A significant impact would be likely to occur if the Proposed Action were to jeopardize the existence of special-status species or result in destroying or adversely modifying critical habitat in the General Study Area. Changes to flight paths under the Proposed Action would primarily occur at or above 3,000 feet AGL, so there is no potential for these effects in the General Study Area. Accordingly, the analysis is focused on the potential for significant impacts to species resulting from increased wildlife strikes with aircraft.

Since 1990, the FAA has compiled pilot and airport reports of wildlife strikes with aircraft. Between the most recent comprehensive reporting period of 1990 and 2018, 209,950 wildlife strikes were reported nationally and in 2018, birds were involved in 94.7 percent of the reported strikes while bats were involved in 3.2 percent.[74] From 1990–2018, about 41 percent of bird strikes with commercial aircraft occurred when the aircraft was at ground level, 71 percent occurred at less than 500 feet AGL, and 92 percent occurred at or below 3,500 feet AGL.[75] About 1 percent of bird strikes occurred above 9,500 feet AGL. Above 500 feet AGL, the number of reported strikes declined consistently by 34 percent for each 1,000-foot gain in height. The Wildlife Strike Database reports that of identified species, waterfowl, gulls, and raptors are the species groups of birds with the most damaging strikes.[76]

Table 5-3 (Identified Species) and **Table 5-4** (Unknown Species) provides a summary of wildlife strikes reported for the Study Airports between January 1, 1990 and March 1, 2020. In total, 9,415 reported strikes (96.33 percent of all strike records) occurred at altitudes below 3,000 feet AGL, which is slightly higher than the US average 1990-2020.

71 U.S. Department of Transportation, Federal Aviation Administration, *FAA Wildlife Strike Database* [https://wildlife.faa.gov/search (Accessed March 2020)].

72 U.S. Department of Transportation, Federal Aviation Administration, and U.S. Department of Agriculture Wildlife Services. *Wildlife Strikes to Civil Aircraft in the United States 1990-2018*. July 2019.

73 U.S. Department of Transportation, Federal Aviation Administration, *FAA Wildlife Strike Database* [https://wildlife.faa.gov/search) (Accessed March 2020)].

74 U.S. Department of Transportation, Federal Aviation Administration, and U.S. Department of Agriculture Wildlife Services. *Wildlife Strikes to Civil Aircraft in the United States 1990-2018*. July 2019.

75 *Id.*

76 *Id.*

The *Migratory Bird Treaty Act (MBTA) of 1918* (16 U.S.C. §§ 703–712) protects all the bird species identified in these reports. Furthermore, federal and state laws protect listed endangered and threatened species. In **Chapter 4**, **Table 4-3** identifies the federally-listed bird or bat species and **Table 4-4** identifies state listed bird or bat species believed to occur or known to occur in counties in the General Study Area.

The number of aircraft operations under the Proposed Action and No Action would be the same. Therefore, the assessment of the potential impacts focuses on changes to flight paths and the potential for impact due to wildlife strikes. Combining **Table 5-3** and **Table 5-4** results, 3.67 percent of bird/bat strikes occurred at altitudes above 3,000 feet AGL. The substantial decline in the number of strikes reported above 3,000 feet AGL indicates that there is less likelihood of bird/bat strikes at these altitudes. Under the Proposed Action, changes to proposed flight paths would primarily occur at or above 3,000 feet AGL and no significant changes to arrival and departure corridors below 3,000 feet AGL would be expected. Therefore, no significant impacts to bird or bat species would be anticipated.

The No Action would not involve changes to air traffic flows, land acquisition, construction, or other ground disturbance activities. Therefore, no impacts to avian and bat species would occur.

Table 5-3 Identified Bird/Bat Species Strikes by Altitude (1990 – 2020)

Type of Strike	Airport	≤3,000 ft. AGL	>3,000 ft. AGL to ≤ 10,000 ft. AGL	>10,000 ft. AGL	Total
Identified Bird or Bat Species	FLL	1050	4	0	1,054
	MCO	1,396	8	0	1,404
	MIA	418	4	3	425
	PBI	170	0	2	172
	TPA	619	6	0	625
	07FA	1	0	0	1
	BCT	17	0	0	17
	FXE	120	0	0	120
	ISM	41	0	0	41
	LAL	70	0	0	70
	LEE	3	0	0	3
	MLB	103	0	0	103
	OPF	30	0	0	30
	ORL	102	0	0	102
	PGD	132	0	0	132
	PIE	234	1	0	235
	SFB	427	1	0	428
	SRQ	577	0	0	577
	SUA	8	0	0	8
	TMB	19	0	0	19
	VNC	9	0	0	9
Identified Total		5,546	24	5	5,575
Identified Percentage		99.48%	0.43%	0.09%	100%

NOTES: Unknown altitudes (left blank in database) were assumed at or below 3,000 feet AGL except where relevant data indicated otherwise. Terrestrial mammals and reptiles were excluded from the above counts where reported.

Source: U.S. Department of Transportation, Federal Aviation Administration, *FAA Wildlife Strike Database* [https://wildlife.faa.gov/search (Accessed March 2020)].
Prepared by: ATAC Corporation, March 2020.

Table 5-4 Unknown Bird/Bat Species Strikes by Altitude (1990 – 2020)

Type of Strike	Airport	≤3,000 ft. AGL	>3,000 ft. AGL to ≤ 10,000 ft. AGL	>10,000 ft. AGL	Total
Unknown Bird	FLL	482	53	8	543
Or Bat Species	MCO	1,199	70	14	1,283
	MIA	641	78	22	741
	PBI	224	7	5	236
	TPA	460	41	7	508
	07FA	3	0	0	3
	BCT	4	2	0	6
	FXE	68	1	0	69
	ISM	13	1	0	14
	LAL	12	1	0	13
	LEE	7	0	0	7
	MLB	72	3	2	77
	OPF	38	0	0	38
	ORL	72	0	1	73
	PGD	48	0	1	49
	PIE	165	3	0	168
	SFB	232	7	0	239
	SRQ	82	0	2	84
	SUA	9	1	0	10
	TMB	36	0	0	36
	VNC	2	0	0	2
Unknown Total		3,869	268	62	4,199
Unknown Percentage		92.14%	6.38%	1.48%	100%

NOTES: Unknown altitudes (left blank in database) were assumed at or below 3,000 feet AGL except where relevant data indicated otherwise. Terrestrial mammals and reptiles were excluded from the above counts where reported.

Source: U.S. Department of Transportation, Federal Aviation Administration, *FAA Wildlife Strike Database* [https://wildlife.faa.gov/search (Accessed March 2020)].
Prepared by: ATAC Corporation, March 2020.

5.4 Climate

This section discusses greenhouse gas (GHG) emissions and effects to the climate as they relate to the Proposed Action and the No Action.

5.4.1 Summary of Impacts

Although fuel burn would increase slightly under the Proposed Action as compared to the No Action, no significant impacts to the climate would be anticipated.

The No Action would not result in a change in the number of aircraft operations or air traffic routes; therefore, no impacts to climate would be anticipated.

5.4.2 Methodology

In accordance with FAA guidance, estimated CO_2 emissions were calculated from the amount of fuel burned under the No Action and the Proposed Action in 2021 and 2026 (see **Section 5.7**). The resulting CO_2 emissions were then reported as CO_2e.

5.4.3 Potential Impacts – 2021 and 2026

Table 5-5 shows project-related CO_2e emissions that would comprise an increase of less than .000000009983 percent of U.S.-based greenhouse gas emissions as reported for 2017 when compared to the Proposed Action.[77]

Table 5-5 CO_2e Emissions – 2021 and 2026

	2021		2026	
	No Action	**Proposed Action**	**No Action**	**Proposed Action**
CO_2e Emissions (MT)	11,879.65	11,934.17	13,236.85	13,294.15
Volume Change (MT)		54.52		57.30
(Proposed Action – No Action)		0.46%		0.43%

Note: CO_2e = Carbon Dioxide Equivalent

Source: ATAC Corporation, May 2020 (AEDT modeling results).
Prepared by: ATAC Corporation, May 2020.

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

This section discusses potential impacts to Department of Transportation (DOT) Act, Section 4(f) Resources. **Exhibits 4-3 and 4-4** depicts Section 4(f) resources within the General Study Area as described in **Section 4.3.4**.

5.5.1 Summary of Impacts

Evaluating potential impacts to Section 4(f) resources focuses on changes in aircraft noise exposure resulting from implementing the Proposed Action. The FAA's aircraft noise exposure analysis indicates that the Proposed Action would not substantially change the noise environment at any Section 4(f) resource identified within the General Study Area when compared with the No Action. Furthermore, any changes in aircraft traffic patterns would occur at altitudes and distances from viewers that would not substantially impair the view or setting of Section 4(f) resources. Therefore, no constructive use of a Section 4(f) resource associated with the Proposed Action would occur and no impacts would be anticipated.

Under the No Action, no changes in air traffic routes in the General Study Area would occur. Therefore, no changes to aircraft noise exposure or aircraft overflight patterns would occur over Section 4(f) resources and no impacts would be anticipated.

5.5.2 Methodology

The FAA evaluates potential effects on Section 4(f) resources in terms of both direct impacts (i.e., physical use) and indirect impacts (i.e., constructive use). A direct impact would occur as a result of land acquisition, construction, or other ground disturbance activities that would result in physical use of all or a portion of a Section 4(f) property. As land acquisition, construction, or other ground disturbance activities would not occur under either the Proposed Action or the No Action, neither Alternative would have the potential to cause a direct impact to a Section 4(f) resource. Therefore, analysis of potential impacts to Section 4(f) resources is limited to identifying indirect impacts resulting from constructive use. A constructive use of a Section 4(f) resource would occur if there were a substantial impairment of the resource to

77 U.S. Environmental Protection Agency (EPA), *Fast Facts 1990-2017 National Level U.S. Greenhouse Gas Inventory*. April 2019. 5,742.6 million Metric Tons of CO2e are reported for all sources and sinks.

the degree that the activities, features, or attributes of the site that contribute to its significance or enjoyment are substantially diminished. This could occur as a result of both visual and noise impacts. Concerning aircraft noise, a constructive use would occur if noise levels substantially impair the resource. Refer to **Section 5.9**, *Visual Impacts*, regarding potential visual impacts within the General Study Area.

Noise exposure levels were calculated for grid points placed at Section 4(f) properties. A list of the resources evaluated is provided in **Appendix I**. The analysis of potential impacts to Section 4(f) resources considered whether these properties would experience a significant noise increase, when comparing the Proposed Action with the No Action, using the applicable thresholds shown in **Table 5-2**.

FAA Order 1050.1F identifies additional factors in deciding whether to apply the thresholds listed above to determine the significance of noise impacts on Section 4(f) resources. If a reportable noise increase were to occur, the Section 4(f) properties would be evaluated further to determine if the project-related effects would constitute a constructive use. Further evaluation can include identifying the specific attributes for which the property is managed (e.g., for traditional recreational uses or where other noise is very low and a quiet setting is a generally recognized purpose and attribute).

In cases where Land and Water Conservation Fund Act (LWCF)[78] resources are "used" by a transportation project, FAA Order 1050.1F stipulates that replacement satisfactory to the Secretary of the Interior is required for recreation lands aided by the Department of Interior's LWCF. Therefore, these resources are considered as part of the Section 4(f) impact analysis process.

5.5.3 Potential Impacts – 2021 and 2026

As stated in **Section 5.1**, the Proposed Action, when compared with the No Action, would not result in changes in aircraft noise exposure in 2021 or 2026 that would exceed the FAA's significance threshold. Noise analysis results for Section 4(f) properties located within the General Study Area can be found in **Appendix I**. As stated in **Section 5.9**, the Proposed Action, when compared with the No Action, would not cause a significant visual impact in 2021 or 2026. Any changes in aircraft traffic patterns would occur at altitudes and distances from viewers that would not substantially impair the view or setting of the Section 4(f) resources. Therefore, the Proposed Action would not result in potential impacts to Section 4(f) resources from a visual impact perspective.

For the 4(f), Historic, and Cultural Resource areas in 2021 or 2026, the Proposed Action would not result in a DNL 1.5 dB increase or decrease in areas exposed to DNL of 65 dB and higher, nor would it result in a reportable noise increase or decrease of DNL 3.0 dB in areas exposed to DNL 60 dB to 65 dB compared with the 2021 or 2026 No Action. Additionally, the Proposed Action would not result in a DNL 5 dB increase or decrease in areas exposed to DNL between 45 dB and 60 dB compared with the 2021 or 2026 No Action. Therefore, the No Action would not result in potential impacts to Section 4(f) resources.

78 16 U.S.C. §§ 460l-4, et seq.

5.6 Historic and Cultural Resources

This section discusses the analysis of impacts to historic properties under the Proposed Action and the No Action. **Section 4.3.5** provides information on historic properties within the General Study Area. The FAA initiated consultation with the State Historic Preservation Officer (SHPO) for the State of Florida in May 2020, in accordance with Section 106 of the *National Historic Preservation Act of 1966* (16 U.S.C. § 470 *et seq*.) and the implementing regulations at 36 C.F.R. Part 800. This effort is on-going and no conclusion or decisions have been reached by either FAA or the Florida SHPO. There are recognized on-tribal or off-tribal[79] lands located within the General Study Area based on readily available data. Tribal Historic Preservation Officers (THPOs) were contacted as part of the Section 106 process as a means of initiating government to government consultation regarding any concerns that uniquely or significantly affect Tribal interests related to the South-Central Florida Metroplex Project. No concerns regarding the Metroplex were expressed. Further documentation of Government to Government communication is available in **Appendix A**.

5.6.1 Summary of Impacts

The aircraft noise exposure analysis indicates that there would be no significant impact to the noise environment at any historic properties under the Proposed Action compared with the No Action. The Proposed Action would not directly or indirectly change the characteristics qualifying or potentially qualifying a historic resource for inclusion in or its eligibility for the NRHP. Therefore, no adverse effect on historic properties under the Proposed Action would be anticipated for 2021 or 2026, nor would there be any visual impacts at historic properties under the Proposed Action.

Under the No Action, no changes to air traffic routes in the South-Central Florida Metroplex would occur in either 2021 or 2026 and no reportable or significant changes to aircraft noise exposure or changes in aircraft overflight or flight patterns over historic properties would be anticipated. Therefore, no adverse effect on historic properties under the No Action would be anticipated for 2021 or 2026, nor would there be any visual impacts at historic properties under the No Action.

5.6.2 Methodology

The *National Historic Preservation Act of 1966* requires the FAA to consider the effects of its undertakings on properties listed or eligible for listing in the National Register of Historic Places (i.e., National Register). In assessing whether an undertaking, such as the Proposed Action, affects a property listed or eligible for listing on the National Register, FAA must consider both direct and indirect effects. An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Federal regulations define an area of potential effect (APE) as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use

79 "Off-Tribal" lands may include Protected Tribal Resources or Native American sacred sites. Areas related to the Brighton, Miccosukee, Immokalee, Big Cypress, Hollywood (Dania), Seminole, Tampa, and Fort Pierce areas are areas identified by the Bureau of Indian Affairs [https://biamaps.doi.gov/indianlands/ (Accessed March 10, 2020)].

of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.[80] Direct effects generally occur at the time and place of the proposed action. An APE has been defined for the South-Central Florida Metroplex Project to assess the potential direct and indirect effects of the Proposed Action on historic properties.

For purposes of this analysis, the APE is the same geographic area and boundary as the General Study Area. **Exhibits 4-5 and 4-6** in **Section 4.3.4** shows analysis points for cultural and historic properties listed and eligible for listing on the National Register that are found within the General Study Area. These analysis points are combined with the 4(f) resource points on **Exhibits 4-5 and 4-6**.

All historic and cultural resources identified within the APE require further evaluation by the FAA to determine if the property may experience a potential adverse effect. Therefore, noise exposure levels at points representing historic properties listed on the National Register were calculated for purposes of determining potential adverse effects. In addition, noise exposure results for the uniform grid points (located at 0.5 NM intervals throughout the General Study Area) were evaluated for purposes of identifying potential adverse effects to historic properties that are eligible but may not be listed on the National Register. In the event that a significant or reportable noise increase was identified at one of these grid points, the surrounding area would be examined for the presence of eligible-to be-listed historic properties.

The analysis of potential impacts to historic and cultural resources considers whether these properties would experience a significant noise increase, when comparing the Proposed Action with the No Action Alternative, using the applicable thresholds shown in **Table 5-2**. Properties exposed to DNL 65 dB or higher under the Proposed Action and an increase of DNL 1.5 dB or higher may be considered to be potentially adversely affected by the project. Formal consultation with the appropriate SHPO/THPO would be conducted to confirm this determination. If reportable increases in noise are detected for properties exposed to DNL between DNL 45 dB and lower than 65 dB, the FAA would consider further whether the increase would result in an adverse effect on historic properties. If the noise analysis indicates a reportable change for the resources, further research and/or survey on the subject property may be conducted to determine if the reportable increase would diminish the integrity of a property's setting for which the setting contributes to historical or cultural significance.

5.6.3 Potential Impacts – 2021 and 2026

As stated in **Section 5.1**, when compared with the No Action, the Proposed Action would not result in changes in aircraft noise exposure in 2021 or 2026 that would exceed FAA's significance threshold for noise. The three structures in the immediate vicinity of the reportable noise increases would experience no effect in their continuing potential eligibility for NRHP listing from implementation of the Proposed Action due to the historic and continuing overflight presence since the mid-1950s. Therefore, the Proposed Action would not result in an adverse effect to historic properties or cultural resources. Noise analysis results for historic properties or cultural resources located within the General Study Area can be found in the **Appendix I**.

80 36 CFR 800.16(d)

Under the No Action no changes to air traffic routes in the South-Central Florida Metroplex would occur in either 2021 or 2026 and no adverse effects related to changes in aircraft noise exposure would be anticipated. Therefore, the No Action would not result in impacts to historic or cultural resources.

5.7 Energy Supply (Aircraft Fuel)

This section discusses whether changes in the movement of aircraft would result in measurable effects on local energy supplies under the Proposed Action and the No Action.

5.7.1 Summary of Impacts

In comparison to the No Action, the Proposed Action would result in a relatively small increase in aircraft fuel burned: 0.46 percent increase in 2021 and 0.43 percent increase in 2026. These increases would not be expected to affect local aircraft fuel supplies. Therefore, no significant impacts to energy supply would be anticipated.

The No Action would not involve changes to air traffic flows, construction, or other ground disturbance activities. Therefore, the No Action would not result in the depletion of local energy supply.

5.7.2 Methodology

The Proposed Action would not change the number of aircraft operations relative to the No Action, but it would involve changes to air traffic flows during the departure, descent, and approach phases of flight. These changes affect both the route an aircraft may follow as well as its climb-out and descent profiles. This in turn may directly affect aircraft fuel burn (or fuel expended). Aircraft fuel burn is considered a proxy for determining whether the Proposed Action would have a measurable effect on local energy supplies when compared with the No Action.

In addition to calculating aircraft noise exposure, the FAA's AEDT model calculates aircraft-related fuel burn (e.g., AAD flight schedules, flight tracks, and runway use). See **Section 5.1.2** for further discussion on AEDT input data. Determining the difference in fuel burn between Alternatives can be used as an indicator of changes in fuel consumption resulting from implementation of the Proposed Action when compared with the No Action.

5.7.3 Potential Impacts – 2021 and 2026

Table 5-6 presents the results of the fuel burn analysis for the Proposed Action and No Action. In comparison to the No Action, the Proposed Action would result in approximately 17.28 metric tons (MT) more fuel burned in 2021 (0.46% percent increase) and approximately 18.16 MT more fuel burned in 2026 (0.43% percent increase). Given these relatively small increases, the FAA expects that when compared with the No Action, the Proposed Action would not adversely affect local fuel supplies. Therefore, no significant impacts to energy supply would be anticipated.

Table 5-6 Energy Consumption Comparison

	2021		2026	
	No Action	**Proposed Action**	**No Action**	**Proposed Action**
Fuel Burn (MT)	3,765.34	3,782.62	4,195.52	4,213.68
Volume Change (MT) (Proposed Action – No Action)		17.28		18.16
Percent Change from No Action		0.46%		0.43%

Note: MT = Metric Ton

Source: ATAC Corporation, May 2020 (AEDT modeling results).
Prepared by: ATAC Corporation, May 2020.

5.8 Environmental Justice

This section presents a summary of the analysis of environmental justice impacts under the Proposed Action and the No Action.

5.8.1 Summary of Impacts

Neither the Proposed Action nor the No Action would displace people or businesses; therefore, implementing the Proposed Action or No Action would not result in direct impacts in this category. No areas within the General Study Area would experience significant impacts to air quality or noise. While some areas would be exposed to reportable noise increases of DNL 5 dB within areas exposed to DNL 45 to 60 dB, these would not constitute a significant impact related to a change in DNL exposure to people, including members of minority and/or low-income populations (see **Sections 5.1 and 5.8**). Therefore, no disproportionately high and adverse effects to minority populations or low-income populations would occur under either the Proposed Action or the No Action.

5.8.2 Methodology

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that federal agencies include environmental justice as part of their mission by identifying and addressing as appropriate, the potential for disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. Environmental justice applies to all environmental resources. Therefore, a disproportionately high and adverse human health or environmental effect on minority and low-income populations may represent a significant impact.

5.8.3 Potential Impacts – 2021 and 2026

Under the Proposed Action, neither people nor businesses would be displaced. As discussed in **Section 5.1**, under the Proposed Action, no census block centroids in the General Study Area would experience a change in noise exposure in 2021 or 2026 that exceeds any of the FAA's significance thresholds for noise impacts on people. Therefore, no adverse direct or indirect effects would occur to any environmental justice populations within the General Study Area under the Proposed Action for 2021 and 2026.

Under the No Action, neither people nor businesses would be displaced. Furthermore, air traffic routes would not change and there would be no change in aircraft noise exposure in

2016 or 2021 that could result in an indirect impact. Therefore, the No Action would not result in disproportionately high and adverse human health or environmental effects on minority and low-income populations.

5.9 Visual Impacts

This section discusses the analysis of visual impacts under the Proposed Action and the No Action.

5.9.1 Summary of Impacts

As stated in **Section 5.1**, implementation of the Proposed Action would not increase the number of aircraft operations at the Study Airports compared with the No Action. Changes in aircraft traffic patterns under the Proposed Action are expected to be at altitudes and distances sufficiently removed from viewers that visual impacts would not be anticipated.

Under the No Action, no changes in air traffic routes would occur and no changes in aircraft overflight patterns would be expected. Therefore, the No Action would not result in visual impacts.

5.9.2 Methodology

As discussed in FAA Order 1050.1F, visual, or aesthetic, impacts are difficult to define and evaluate because of the subjectivity involved. Aesthetic impacts deal more broadly with the extent that the project contrasts with the existing environment and whether the difference is considered objectionable by the agency responsible for the location in which the project is set. Visual impacts are normally related to the disturbance of the aesthetic integrity of an area caused by development, construction, or demolition, and thus, do not typically apply to airspace changes.

To evaluate the potential for indirect impacts resulting from changes in aircraft routings and visual intrusion, the general altitudes at which aircraft route changes occur beyond the immediate airport environs, which experience overflights on a routine basis, are considered to evaluate the potential for visual impacts.

5.9.3 Potential Impacts – 2021 and 2026

According to FAA Order 1050.1F, the visual sight of aircraft, aircraft contrails, or aircraft lights at night, particularly at a distance that is not normally intrusive, should not be assumed to constitute an adverse impact. Changes in aircraft routes associated with the Proposed Action would generally occur at altitudes above 3,000 feet AGL; therefore, the visual sight of aircraft and aircraft lights would not be considered intrusive. Consequently, the Proposed Action would not result in significant visual impacts. Accordingly, significant visual impacts resulting from the Proposed Action or the No Action would not be anticipated.

5.10 Cumulative Impacts

Consideration of cumulative impacts applies to the impacts resulting from the implementation of the Proposed Action with other actions. CEQ regulations define a cumulative impact as “an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what

agency (federal or non-federal) or person undertakes such other actions."[81] The regulations also state that cumulative impacts can result from individually minor, but collectively significant actions that take place over a period of time.

5.10.1 Summary of Impacts

The implementation of the Proposed Action when considered with other past, present, and reasonably foreseeable future actions would not be expected to result in significant cumulative impacts.

The No Action would not result in a change in the number of aircraft operations or air traffic routes; therefore, no cumulative impacts would be anticipated.

5.10.2 Methodology

Due to the nature of the Proposed Action and its potential impacts (as described in **Sections 5.1 through 5.9**), the only potentially-relevant past, present, and reasonably foreseeable future actions for cumulative impact analysis are those that would have direct or indirect effects on aircraft flight patterns within the General Study Area. Research was conducted to identify any present or reasonably foreseeable (past actions are reflected in the environmental baselines described in **Chapter 4**) airport improvement projects at the Study Airports or FAA actions relating to airspace, flight procedures, or air traffic routes that would have the potential for such effects. This included reviewing capital improvement program (CIP) projects at the Study Airports that directly affect or involve runway surfaces having the potential to affect local or regional flight patterns. For these projects, five years corresponds to the typical CIP planning horizon and was therefore applied as the timeline for including projects to be reviewed. "Reasonably foreseeable future actions" refers to projects that would likely be completed by 2026.

The FAA evaluated the potential for cumulative impacts in those environmental resource categories listed in **Section 4.3**, *Potentially Affected Resource Categories or Sub-Categories*.

5.10.3 Potential Impacts – 2021 and 2026

As stated in **Section 5.10.2**, research was conducted to identify relevant airport improvement capital projects and airspace actions. This research did not reveal any present or reasonably foreseeable actions with the potential for direct or indirect effects on aircraft flight patterns within the General Study Area. Therefore, no cumulative impacts would be anticipated for the Proposed Action when compared to the No Action for either 2021 or 2026.

81 40 C.F.R § 1508.7

THIS PAGE INTENTIONALLY LEFT BLANK