CHAPTER 3
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

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3.1 INTRODUCTION

This chapter provides an overview of the existing environmental conditions within the Project Study Area and General Study Area. This chapter also describes the regulations, significance thresholds, methodology used, potential environmental effects that the Proposed Project would have on the affected environment, and any proposed mitigation that would be implemented to minimize impacts from the Proposed Project. As required by Federal Aviation Administration (FAA) Orders 1050.1F and 5050.4B, this Environmental Assessment (EA) considers the following environmental resource categories outlined in FAA Order 1050.1F, paragraph 4-1:

- Air quality
- Biological resources
- Climate
- Coastal resources
- Department of Transportation Act (U.S. DOT), Section 4(f)[1]
- Farmlands
- Hazardous materials, solid waste, and pollution prevention
- Historical, architectural, archeological, and cultural resources
- Land use
- Natural resources and energy supply
- Noise and noise-compatible land use
- Socioeconomics, environmental justice, and children's environmental health and safety risks
- Visual effects
- Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

The Project Study Area and General Study Area are described in **Section 3.2**. Environmental resource categories listed above that are not affected by the Proposed Project are described in **Section 3.3**. Because implementation of the Proposed Project would not result in impacts to these resource categories, they are not described further in this EA.

[1] Section 4(f) of the U.S. DOT Act provides protection for special properties, including publicly owned parks, recreation areas, wildlife and waterfowl refuges, or any historic and archaeological sites.

3.2 STUDY AREAS

Two study areas were identified for use in describing the affected environment and the potential environmental consequences associated with the implementation of the Proposed Project. These two areas are identified as the Project Study Area and the General Study Area (see **Exhibit 3.2-1**).

3.2.1 Project Study Area

The Project Study Area, as seen in **Exhibit 3.2-1**, encompasses about 1,510 acres and is entirely on Airport property. The Project Study Area represents the area where the Proposed Project would occur. The Project Study Area is used to describe the environmental resources that could be directly affected by ground disturbing activities associated with the Proposed Project.

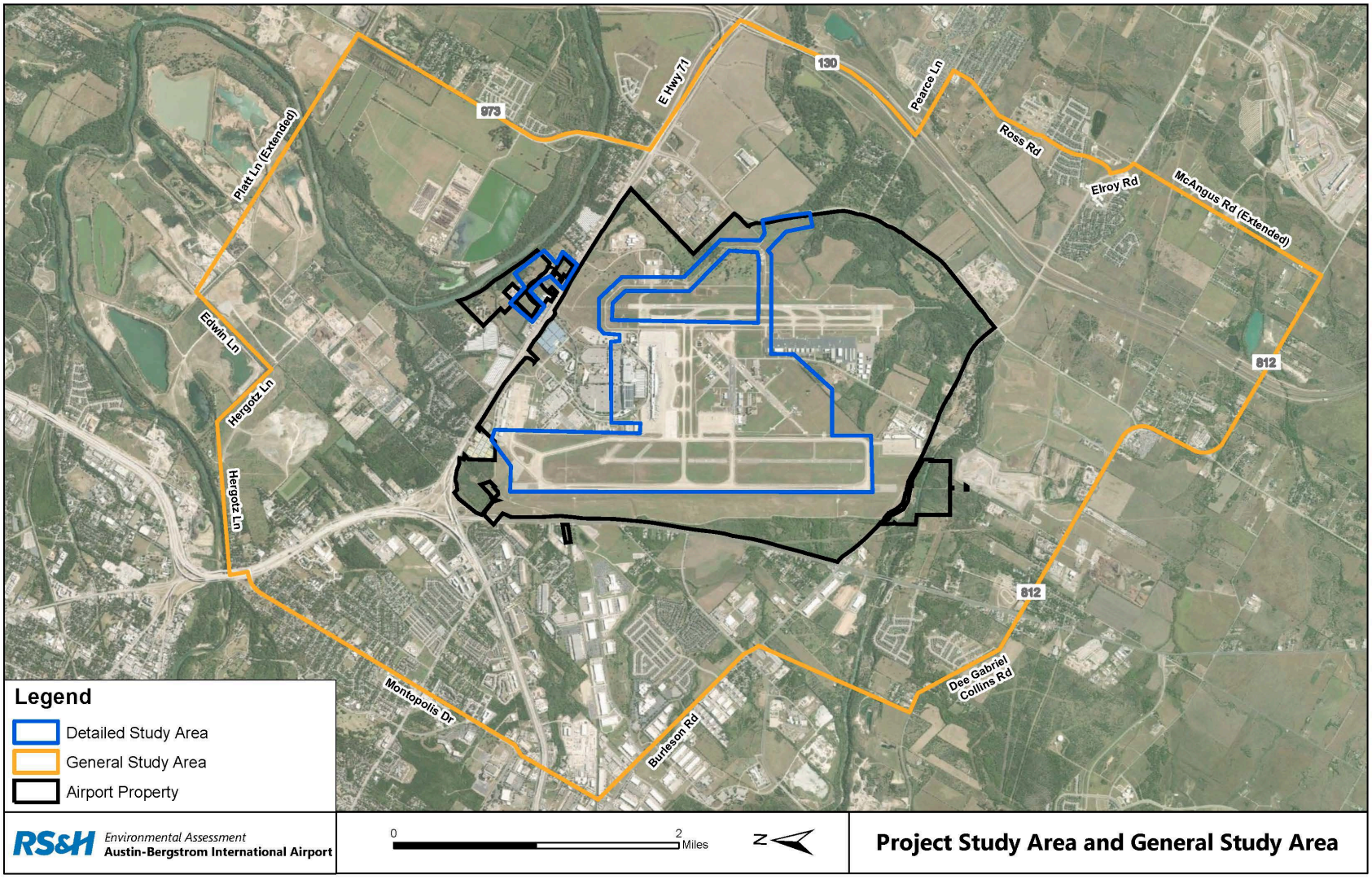
3.2.2 General Study Area

The General Study Area, as seen in **Exhibit 3.2-1**, encompasses about 17,000 acres and is entirely within Travis County. The General Study Area is used to address the resource categories that could be indirectly affected by the Proposed Project. This study area was established on a larger geographic area to assess "indirect" impacts that may occur in the surrounding area, such as impacts to air quality, noise-sensitive land uses, socioeconomic impacts, Department of Transportation Act Section 4(f) resources, and historic and cultural resources. The General Study Area boundary was based on the Airport's existing Day-Night Average Sound Level (DNL) 65 decibel (dB) noise contour and the boundary lines were squared off to follow natural boundaries and roadways in the Airport vicinity.

3.3 ENVIRONMENTAL RESOURCES NOT AFFECTED

This section describes environmental resources that would not be affected by the Proposed Project. The environmental resources described in the subsections below are not present in either the Project Study Area or the General Study Area. Therefore, this EA does not evaluate the potential for impacts for these resources and they are not discussed further in this EA.

EXHIBIT 3.2-1
PROJECT STUDY AREA AND GENERAL STUDY AREA



3.3.1 Coastal Resources

According to the Texas General Land Office Coastal Zone Boundary Map, the study areas are not within the Coastal Zone Management Area (CZMA).[2] The study areas are located more than 100 miles from the nearest CZMA. Therefore, the Proposed Project would not affect any coastal resources.

3.3.2 Farmlands

Construction of the Proposed Project would occur entirely on Airport property. No farmland would be acquired or converted as a result of the Proposed Project. Under Section 523(10)(B) of the Farmland Protection Policy Act (FPPA), land that is committed to urban development is not subject to provisions of the FPPA[3]. As stated in Section 3.10.2, Airport property is zoned as Transportation/Utilities" and is considered an urban use. Therefore, there would be no impact to farmlands.

3.3.3 Visual Effects

Construction of the Proposed Project would occur entirely on Airport property. Construction activity is unlikely to occur during the nighttime hours; but if nighttime construction were to occur, it would be restricted to terminal-related construction. Light emissions from any nighttime-related construction would be temporary. Additionally, the closest residences are about 3,900 feet west of the proposed location of Concourse B and are shielded by vegetation. In addition, other transportation-related facilities (e.g., runway and taxiways and U.S. 183) are between the residences and the proposed location of Concourse B.

The Proposed Project would require new taxiway edge lighting for safety reasons, as required by FAA standards. Taxiway edge lighting is low to the ground by nature. The closest residences are about 2,100 feet west of the proposed taxiway improvements and are at a lower elevation and are shielded by vegetation. Therefore, there would be no light emissions to any light-sensitive resources as a result of the Proposed Project.

3.3.4 Wild and Scenic Rivers

There are no protected rivers or river segments in either study area. The closest wild and scenic river is a segment of the Rio Grande, which is more than 150 miles

[2] Texas General Land Office. Coastal Boundary Map. Retrieved December 2020, from: https://www.glo.texas.gov/coast/coastal-management/forms/files/CoastalBoundaryMap.pdf.
[3] Farmland Protection Policy Act, 7 U. S. C. §§ 4201-4209.

west of the two study areas.[4] Therefore, the Proposed Project would not affect any wild and scenic rivers.

3.4 AIR QUALITY

This section describes the regulations, affected environment, significance threshold(s) pertaining to air quality, and the methodologies used to determine potential effects. In addition, this section identifies the potential air quality impacts from the No Action Alternative and Proposed Project, as well as and mitigation measures, if needed.

3.4.1 Regulatory Setting

Appendix C lists the regulations associated with air quality.

3.4.2 Affected Environment

The U.S. Environmental Protection Agency (EPA) sets National Ambient Air Quality Standards (NAAQS) for certain air pollutants to protect public health and welfare. The EPA has identified the following six criteria pollutants and set NAAQS for them: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead (Pb). Particulate matter is divided into two particle size categories: coarse particles with a diameter less than 10 micrometers (PM_{10}) and fine particles with a diameter of less than 2.5 micrometers ($PM_{2.5}$). **Table 3.4-1** shows the primary and secondary National Ambient Air Quality Standards (NAAQS) for the criteria pollutants.

Areas found to be in violation of one or more NAAQS of these pollutants are classified as "nonattainment areas." States with nonattainment areas must develop a State Implementation Plan (SIP) demonstrating how the areas will be brought back into attainment of the NAAQS within designated timeframes. Areas where concentrations of the criteria pollutants are below (i.e., within) these threshold levels are classified as "attainment areas." Areas with prior nonattainment status that have since transitioned to attainment are known as "maintenance areas." The General Study Area, which is located in Travis County, is in attainment for all criteria pollutants.[5]

[4] National Park Service, National Wild and Scenic Rivers System, Texas. Retrieved December 2021, from: https://www.rivers.gov/texas.php.

[5] USEPA. Green Book, National Area and County-Level Multi-Pollutant Information, Texas. Retrieved December 2020, from https://www3.epa.gov/airquality/greenbook/anayo_tx.html.

TABLE 3.4-1
NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

Pollutant	Averaging Time	Primary Standards	Secondary Standards
CO	Eight-hour	9 parts per million (ppm)	None
	One-hour	35 ppm	
Pb	Rolling Three-Month Average	0.15 micrograms (µg) /cubic meter of air (m^3)	Same as Primary
NO_2	Annual Arithmetic Mean	0.053 ppm (100 µg/m^3)	Same as Primary
	One-hour	0.100 ppm Note 2	None
O_3	Eight-hour (2015 standard)Note 4	0.070 ppm	Same as Primary
$PM_{2.5}$	Annual Arithmetic Mean	12 µg/m^3 Note 1	15 µg/m^3
	24-hour	35 µg/m^3	Same as Primary
PM_{10}	24-Hour	150 µg/m^3 Note 1	Same as Primary
SO_2	One-hour	75 parts per billion (ppb) Note 3	None
	Three-hour	None	0.5 ppm

Table Notes:
1. For PM_{10}, the 24-hour standard not to be exceeded more than once per year on average over three years. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over three years, are equal to or are less than the standard.
2. To attain this standard, the three-year average of the 98th percentile of the daily maximum one-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
3. Final rule signed June 2, 2010. To attain this standard, the three-year average of the 99th percentile of the daily maximum one-hour average at each monitor within an area must not exceed 75 ppb.
4. EPA updated the NAAQS for O_3 to strengthen the primary eight-hour standard to 0.07 ppm on October 1, 2015. An area will meet the standard if the fourth-highest maximum daily eight-hour ozone concentration per year, averaged over three years is equal to or less than 70 ppb
5. The NAAQS are expressed in terms of pollutant concentration measured (or averaged) over a defined period of time and are two-tiered. The first tier (the "primary standard") is intended to protect public health; the second tier (the "secondary standard") is intended to protect public welfare and prevent further degradation of the environment.

3.4.3 Significance Threshold

FAA Order 1050.1F, Exhibit 4-1, provides the FAA's significance threshold for air quality, which states that a significant impact would occur if "the 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." Construction and demolition emissions along with the net change in operational emissions associated with the Proposed Project will be compared to appropriate EPA *de minimis* levels to determine significant air quality impacts under NEPA.

3.4.4 Methodology

Criteria pollutant emission inventories were prepared for demolition of project components of the Proposed Project, construction of project components of the

Proposed Project, and for operational activities that would change under the Proposed Project as compared to the No Action Alternative. The criteria pollutant emission inventories were developed using standard software/models, mainly USEPA's Motor Vehicle Emissions Simulator (MOVES)[6], and they follow federal, state, and local agency-approved methodologies. The criteria pollutant emissions inventories are used to disclose and compare the Proposed Project to the future No Action Alternative and to compare against General Conformity *de minimis* thresholds to determine significant air quality impacts under NEPA. Additional information regarding technical assumptions, methodologies, databases, and models used to conduct the air quality impact analysis and to develop the greenhouse gas (GHG) emissions inventory (presented in **Section 3.6**) is documented in the *Air Quality and Noise Technical Memorandum* in **Appendix D**.

3.4.5 Environmental Consequences

This section describes the potential air quality impacts associated with implementation of the No Action Alternative and the Proposed Project.

3.4.5.1 No Action Alternative

Under the No Action Alternative, the City would not implement the Proposed Project. The City would continue to operate the Airport, perform maintenance, and serve forecast aviation demands.

3.4.5.1.1 Construction Impacts

No construction-related air quality impacts would occur under the No Action Alternative in 2027 or 2032.

3.4.5.1.2 Operational Impacts

Under the No Action Alternative, aircraft operations and enplanements would increase in 2027 and 2032 because of natural growth in demand (see **Tables 1-3** and **1-4** and **Exhibits 1-6** and **1-7**). However, as stated in **Section 2.2**, the No Action Alternative would accommodate the forecast number of aircraft operations in 2027 but would not accommodate the forecast number of aircraft operations in 2032. The emissions inventory for the No Action Alternative in 2027 and 2032 is summarized in **Table 3.4-2**.

[6] USEPA MOVES is an emissions modeling system that estimates emissions for cars, trucks, and non-highway mobile sources. MOVES3.0.2 is the latest version of MOVES, available from https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves.

TABLE 3.4-2
AIRCRAFT OPERATIONAL EMISSIONS INVENTORY UNDER THE NO ACTION ALTERNATIVE

Aircraft Operations	Relevant Criteria Pollutant Emissions (tons per year) /2/					
	CO	VOC /1/	NO_2 /1/	SO_2	PM_{10}	$PM_{2.5}$
2027 No Action Alternative	1,056.9	159.6	915.1	84.2	13.1	13.0
2032 No Action Alternative	1,097.7	166.6	956.3	87.6	13.4	13.4

Notes:
1. Following standard industry practice, ozone was evaluated by evaluating emissions of VOC and NO_x, which are precursors in the formation of ozone.
2. Operational emissions denote emissions associated with aircraft operations only.
3. All analysis cases assumed default taxi times in AEDT.

Source: HMMH, 2022

3.4.5.2 Proposed Project

Under the Proposed Project, the City would construct and operate the Proposed Project.

3.4.5.2.1 Construction Impacts

The demolition and construction associated with the Proposed Project would result in short-term changes in air emissions from sources such as exhaust from nonroad construction equipment, on road vehicles, and fugitive dust activities. A more detailed discussion of these types of equipment are provided in the *Air Quality and Noise Technical Memorandum* in **Appendix D**.

Demolition and construction activities associated with the Proposed Project are expected to begin in the fourth quarter of 2022 and be completed in the second quarter of 2030. The *Air Quality and Noise Technical Memorandum* in **Appendix D** presents the primary components of the Proposed Project, including estimated activity costs, area estimates (square feet) and anticipated start and end dates of construction. These costs and area estimates were used for deriving construction activity emission estimates with the Airport Cooperative Research Board's (ACRP) Airport Construction Emissions Inventory Tool (ACEIT).[7] The ACRP ACEIT model was used to generate construction schedules for each activity which was then used to estimate construction emissions for each project component. The ACEIT model can estimate nonroad and on-road activity data for a variety of standard airport construction projects, including the associated activity types and the equipment for this Proposed Project. Based on the project dimensions for each activity, the ACEIT model scales these activities internally and provides estimated equipment type and hours of operation for each activity on an annual basis.

[7] ACRP, 2014 https://crp.trb.org/acrp0267/acrp-report-102-guidance-for-estimating-airport-construction-emissions/

The current EPA MOVES3.0.2 model was used to develop on-road and NONROAD emission factors that were applied to the construction schedule as derived in ACEIT for each construction year. Construction-related emissions of criteria pollutants during the construction period 2022 to 2030 are summarized in **Table 3.4-3**. For every construction year, the pollutant emissions would be below *de minimis* levels. Therefore, no significant construction-related air quality impacts would occur with the Proposed Project.

TABLE 3.4-3
CONSTRUCTION EMISSION INVENTORY - PROPOSED PROJECT

Year	Relevant Criteria Pollutant Emissions (tons per year)					
	CO	VOC /1/	NO_2 /1/	SO_2	PM_{10}	$PM_{2.5}$
2022	8.1	0.4	3.5	0.015	0.28	0.23
2023	31.7	2.1	11.4	0.060	1.17	0.83
2024	57.9	2.8	17.7	0.132	3.17	1.20
2025	55.4	2.5	9.8	0.114	3.75	0.51
2026	35.5	0.9	4.2	0.058	1.57	0.22
2027	20.8	0.8	2.4	0.039	1.12	0.12
2028	28.7	0.9	1.9	0.038	0.79	0.09
2029	22.7	0.6	1.2	0.022	0.28	0.05
2030	7.2	0.2	0.7	0.009	0.15	0.03

Notes:
1. Following standard industry practice, ozone was evaluated by evaluating emissions of VOC and NO_x, which are precursors in the formation of ozone.

Source: HMMH, 2022, Based on ACEIT, MOVES3.0.2 results using construction information provided by AUS, December 2021

3.4.5.2.2 Operational Impacts

Both direct and indirect operational emissions were evaluated for the Proposed Project. Direct emissions included additional aircraft operations and new Central Utility Plant combustion emissions, while indirect emissions included new emissions associated with ground access vehicles and new parking facilities associated with the Proposed Project. Operational emissions were estimated for the Proposed Project for 2027 and 2032 and the net change in emissions from the Proposed Project compared to the No Action Alternative were compared to the EPA *de minimis* thresholds for significance.

3.4.5.2.2.1 Aircraft Operational Emissions

The number of aircraft operations in 2027 under the Proposed Project would be the same as that for the No Action Alternative. As described in **Section 2.2**, the No Action Alternative would not accommodate the forecast number of aircraft operations in 2021. Because the Proposed Project would accommodate the forecast number of aircraft operations in 2032, the Proposed Project would have more aircraft operations than the No Action Alternative. As a result, the Proposed Project

would have greater air pollutant emissions compared to the No Action Alternative (see **Table 3.4-4**).

TABLE 3.4-4
AIRCRAFT OPERATIONAL EMISSIONS INVENTORY UNDER THE PROPOSED PROJECT COMPARED TO THE NO ACTION ALTERNATIVE

Aircraft Operations	Relevant Criteria Pollutant Emissions (tons per year) /2/					
	CO	VOC /1/	NO_2 /1/	SO_2	PM_{10}	$PM_{2.5}$
2027 Proposed Project	1,056.9	159.6	915.1	84.2	13.1	13.0
2027 No Action Alternative	1,056.9	159.6	915.1	84.2	13.1	13.0
2027 Net Change (Proposed Project Compared to No Action Alternative)	**0**	**0**	**0**	**0**	**0**	**0**
2032 Proposed Project	1,184.4	178.1	1,062.2	96.7	14.8	14.7
2032 No Action Alternative	1,097.7	166.6	956.3	87.6	13.4	13.4
2032 Net Change (Proposed Project Compared to No Action Alternative)	**+86.6**	**+11.5**	**+105.9**	**+9.1**	**+1.4**	**+1.3**

Notes:
1. Following standard industry practice, ozone was evaluated by evaluating emissions of VOC and NO_x, which are precursors in the formation of ozone.
2. Operational emissions denote emissions associated with aircraft operations only.
3. All analysis cases assumed default taxi times in AEDT.

Source: HMMH, 2022

3.4.5.2.2.2 Central Utility Plant Emissions

The Proposed Project includes the construction and operation of a new central utility plan (Project U-1). The new central utility plant would operate five natural gas fired 12.25 million British terminal units (BTUs) to support the additional square footage associated with other project components of the Proposed Project. The new boilers are expected to come on-line in 2027; therefore, the net change in operational emissions for 2032 would be the same as those identified for 2027. The net change in operational boiler emissions is presented in **Table 3.4-5**.

The new boilers will require an air quality permit with the Texas Commission on Environmental Quality (TCEQ) in order to construct and operate the boilers for the CUP to ensure the emissions meet federal, state and local regulations. Because they would be permitted separately, boiler emissions are provided for disclosure purposes only.

TABLE 3.4-5
OPERATIONAL EMISSIONS INVENTORY OF THE NET CHANGE IN CENTRAL UTILITY PLANT EMISSIONS

Boiler Utility Operations Case	Relevant Criteria Pollutant Emissions (tons per year) /2/					
	CO	VOC/1/	NO_2 /1/	SO_2	PM_{10}	$PM_{2.5}$
2027 No Action Alternative	0.8208	0.0537	0.4886	.0059	0.0743	0.0743
2027 Proposed Project	2.0521	0.1344	1.2215	0.0147	.1857	.1857
2027 Net Change in Boiler Operational Emissions (Proposed Project Compared to No Action Alternative)	**+1.23**	**+0.08**	**+0.73**	**+0.009**	**+0.11**	**+0.11**

Notes:
1. Following standard industry practice, ozone was evaluated by evaluating emissions of VOC and NO_x, which are precursors in the formation of ozone.
2. Operational emissions denote emissions associated with the existing and new boilers.

Source: HMMH, AUS, January 2022

3.4.5.2.2.3 Vehicle Emissions

In 2027, the number of vehicle trips to and from the Airport would be the same as that of the No Action Alternative. In 2032, the Proposed Project would result in an increase in vehicle trips to and from AUS compared to the No Action Alternative. This increase in vehicle trips would have a corresponding increase in air pollutant emissions. In addition to vehicle trips from passengers, vehicle emissions associated with the new parking facilities also would occur.

Vehicle miles traveled were estimated for the roadway network based on roadway segment and expected passenger daily trips along each link for the 2032 conditions. The MOVES3 emission model was used to estimate pollutant specific emission factors for each segment based on expected vehicle speeds. Only the net change in emissions were estimated for the vehicles traveling to and from the Airport or parking in the new parking facilities. **Tables 3.4-6** and **3.4-7** summarize the operational emissions for vehicles traveling to and from the Airport and for vehicles in the new parking facilities, respectively.

TABLE 3.4-6
OPERATIONAL EMISSIONS INVENTORY OF THE ADDITIONAL GROUND ACCESS VEHICLES

Ground Access Vehicles	Relevant Criteria Pollutant Emissions (tons per year) /2/					
	CO	VOC/1/	NO_2 /1/	SO_2	PM_{10}	$PM_{2.5}$
2032 No Action Alternative	N/C	N/C	N/C	N/C	N/C	N/C
2032 Proposed Project	8.17	0.04	0.04	0.006	0.005	0.005
2032 Net Change (Proposed Project Compared to No Action Alternative)	**+8.17**	**+0.04**	**+0.04**	**+0.006**	**+0.005**	**+0.005**

Notes:
1. Following standard industry practice, ozone was evaluated by evaluating emissions of VOC and NO_x, which are precursors in the formation of ozone.
2. Operational emissions denote emissions associated with additional ground vehicles passenger trips. N/C denotes no change.
3. Proposed Project emissions represent additional ground access vehicle trips compared to the No Action Alternative.

Source: HMMH, AUS, January 2022

TABLE 3.4-7
OPERATIONAL EMISSIONS INVENTORY OF THE ADDITIONAL PARKING AREAS

New Parking Area Vehicles	Relevant Criteria Pollutant Emissions (tons per year) /2/					
	CO	VOC/1/	NO_2 /1/	SO_2	PM_{10}	$PM_{2.5}$
2032 No Action Alternative	N/C	N/C	N/C	N/C	N/C	N/C
2032 Proposed Project /3/	2.66	0.011	0.012	0.002	0.002	0.001
2032 Net Change (Proposed Project Compared to No Action Alternative)	**+2.66**	**+0.011**	**+0.012**	**+0.002**	**+0.002**	**+0.001**

Notes:
1. Following standard industry practice, ozone was evaluated by evaluating emissions of VOC and NO_x, which are precursors in the formation of ozone.
2. Operational emissions denote emissions associated with additional ground vehicles passenger trips. N/C denotes no change.
3. Proposed Project emissions represent additional vehicles associated with the new parking areas compared to the No Action.

Source: HMMH, AUS, January 2022

3.4.5.2.2.4 Total Operational Emissions

Table 3.4-8 presents the net change in operational emissions (aircraft operations, new central utility plant, vehicles, and new parking facilities) from the implementation of the Proposed Project compared to the No Action Alternative and compares those emissions changes to the appropriate *de minimis* thresholds for significance determination for 2027 and 2032. General Conformity is not triggered by the Proposed Project because Travis County is in "attainment" for all criteria air pollutants. Thus, the total net change in pollutants is disclosed for informational purposes only. As shown in **Table 3.4-8**, the net change in 2027 would be below *de minimis* thresholds for all pollutants. The net change in 2032 would be below *de*

minimis thresholds for all pollutants except NO_2. The increase in NO_2 of 106.7 tons per year represent about 0.8% of the NO_2 emitted on an annual basis within Travis County and about 0.4% of the NO_2 emitted on an annual basis within the Austin-Round Rock Metropolitan Statistical Area.

TABLE 3.4-8
NET OPERATIONAL EMISSION CHANGES COMPARED TO DE MINIMIS THRESHOLDS

	Relevant Criteria Pollutant Emissions (tons per year)					
	CO	***VOC***	***NO_2***	***SO_2***	***PM_{10}***	***$PM_{2.5}$***
2027						
Net Change in Aircraft Operational Emissions	0	0	0	0	0	0
Net Change in New Central Utility Plant Emissions	+1.23	+0.08	+0.73	+0.009	+0.11	+0.11
Total	**+1.23**	**+0.08**	**+0.73**	**+0.009**	**+0.11**	**+0.11**
EPA De Minimis Threshold	*100*	*100*	*100*	*100*	*100*	*100*
Emissions below* de minimis *thresholds?	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***
2032						
Net Change in Aircraft Operational Emissions	+86.7	+11.5	+105.9	+9.1	+1.4	+1.4
Net Change in New Central Utility Plant Emissions	+1.23	+0.08	+0.73	+0.009	+0.11	+0.11
Net Change in Vehicle Emissions	+8.20	+0.04	+0.04	+0.0069	+0.005	+0.005
Net Change in Parking Area Emissions	+2.66	+0.011	+0.012	+0.002	+0.002	+0.001
Total	**+98.9**	**+11.6**	**+106.7**	**+9.1**	**+1.5**	**+1.5**
EPA De Minimis Threshold	*100*	*100*	*100*	*100*	*100*	*100*
Emissions below* de minimis *thresholds?	***Yes***	***Yes***	***No***	***Yes***	***Yes***	***Yes***

Source: HMMH 2022, AUS 2022

3.4.6 Mitigation Measures

The Proposed Project does not exceed the applicable significance thresholds for any pollutants, except for NO_2. However, because Travis County is in "attainment" for all criteria air pollutants, General Conformity is not triggered, and no mitigation measures are required. However, air quality initiatives are being implemented at the Airport as outlined in the Austin-Round Rock 1997 Eight-Hour Ozone Flex Plan that was approved by the TCEQ on June 18, 2008. Measures being implemented at the Airport to reduce air pollutant emissions include, but are not limited to, a

shuttle bus fleet that uses alternative fuels, airline equipment electrification, preconditioned air and ground power units on each electric-powered jet bridge, public vehicle charging stations, Airport vehicle electrification, and the development of light rail from downtown Austin to the Airport.

3.5 BIOLOGICAL RESOURCES

This section describes the regulations, affected environment, significance threshold(s) pertaining to biological resources, and the methodologies used to determine potential effects. In addition, this section identifies the potential biological resource impacts of the No Action Alternative and Proposed Project, as well as mitigation measures, if needed.

3.5.1 Regulatory Setting

Appendix C lists the regulations associated with biological resources. In addition, the Texas Parks and Wildlife Department (TPWD) has provided a letter with general construction and design recommendations related to the project activities (see **Appendix E**).

3.5.2 Affected Environment

3.5.2.1 Observed Habitats and Conservation Areas

The vegetation within the Project Study Area is predominantly maintained grasslands dominated by Bermudagrass, KR bluestem, and Johnsongrass. Maintained grasslands within the Project Study Area additionally contain native wildflowers and grasses, including milkweed. In areas adjacent to the runways and taxiways (i.e., the airside portion of the Airport), vegetation is heavily disturbed and actively maintained at a short, mowed height. In landside areas (i.e., those areas not part of the airside), mature trees are scattered throughout grasslands and along riparian areas, and grasses are mowed less frequently than airside area but are dominated by invasive species. Wetland vegetation grows within several moist low-lying areas or areas along mesic corridors at the former golf course located on the eastern side of AUS property. The vegetation community in the northernmost Project Study Area (north of SH 71) is maintained within the fenced section of the parcel. Beyond the fence toward the Colorado River, a deciduous woodland is carved into steep-sided gullies by four spring-fed streams and multiple runoff channels. Wetland areas are particularly important to many wildlife species. Five observed wetland locations were identified in the Project Study Area (see **Section 3.14.1, Wetlands**).

Surface water within the majority of the Project Study Area flows to Onion Creek, an Ecologically Significant Stream Segment south of the Project Study Area[8], which flows to the Colorado River. The northernmost segment of the Project Study Area is adjacent to the Colorado River, also an Ecologically Significant Stream Segment. The remaining surface water flows to Carson Creek, a tributary of the Colorado River. For a discussion of surface waters, see **Section 3.14.3, Surface Waters**.

The Project Study Area is within the USFWS Bird Conservation Area 21, Oaks and Prairies[9]. This Conservation Area lists birds of conservation concern (BCC) that use habitat in the area.

In the General Study Area, there are 18 parks and natural areas. These areas provide varying amounts of wildlife habitat. One of these areas, Hornsby Bend Bird Observatory (HBBO), is located across the Colorado River from the Project Study Area and has a particular value to wildlife. HBBO is a wastewater management facility and sustainability research center, with publicly-accessible trails and birdwatching areas.

3.5.2.2 Species

Species of concern with potentially affected habitat, including federal- or state-listed species, are discussed within this section and summarized in **Table 3.5-1**.

U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC)[10] identified 14 federally listed or proposed threatened, endangered, or candidate species with the potential to occur in the General Study Area. The TPWD Rare, Threatened, and Endangered Species (RTEST) website identified 123 state listed Species of Greatest Conservation Need (SGCN), threatened, and endangered species with the potential to occur in Travis County.[11] Of those listed in RTEST, 24 species are listed as threatened or endangered (see **Appendix F** for the list of species). USFWS's IPaC did not identify critical habitats located within the Project Study Area.

TPWD tracks observations related to biological resources, including SGCN and threatened or endangered species. These observations are maintained within the Texas Natural Diversity Database (TxNDD) as Elements and are provided to project designers as Geographical Information System (GIS) data. An Element may be a

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8 Texas Parks and Wildlife. Ecologically Significant Stream Segments. Retrieved December 2021, from: https://tpwd.texas.gov/landwater/water/conservation/water_resources/water_quantity/sigsegs/

9 USFWS. Migratory Bird Program. Birds of Conservation Concern 2021. Retrieved online at https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php

10 USFWS. Information for Planning and Conservation (IPaC). Retrieved December 2021, from: https://ecos.fws.gov/ipac/.

11 Texas Parks and Wildlife. Rare, Threatened, and Endangered Species, Travis County. Retrieved December 2021, from: https://tpwd.texas.gov/gis/rtest/.

species, a native plant community, or an animal aggregation, such as a colonial waterbird rookery or a bat roost. The TXNDD record for any Element is known as an Element Occurrence (EO). An EO is an area of land or water with practical conservation value, where an Element is or was present. Each EO is based on recorded field observation(s) of an Element in the specified location; observations may be grouped into larger or smaller areas based on information such as the distance an individual may range within. Therefore, an EO represents the known population of an Element in a particular area[12]. Absence of information in the database does not suggest that a species is absent from the area. TxNDD observations within one and a half miles of the Project Study Area are shown on **Exhibit 3.5-1**.

Habitat for four federally listed species is within the General Study Area. Proposed critical habitat for the Texas Fatmucket (*Lampsilis bracteata*, proposed endangered) is present in Onion Creek, within the General Study Area. Other proposed-listed species, Texas Pimpleback (*Cyclonaias petrina*, proposed endangered) and Texas Fawnsfoot (*Truncilla macrodon*, proposed threatened), are listed within Travis County by TPWD and have potential habitat within the Colorado River. The Whooping Crane (*Grus americana*, endangered) has potential stopover habitat within the Project Study Area.

TABLE 3.5-1: WILDLIFE SPECIES HABITATS SUMMARY

Species	Species Status	Habitat Location	Listing Database
C - Candidate LE – Federal-Listed Endangered	PE – Proposed Endangered E – Endangered (State) PT –Proposed Threatened T – Threatened (State)		
Federal-listed Species			
Whooping crane (*Grus americana*)	LE	Stopover habitat in General Study Area	USFWS IPaC, TPWD RTEST
Texas pimpleback (*Cyclonaias petrina*)	PE	General Study Area	USFWS IPaC, TPWD RTEST
Texas fatmucket (*Lampsilis bracteata*)	PE	Proposed Critical Habitat and TxNDD EO in General Study Area	USFWS IPaC, TPWD RTEST
Texas Fawnsfoot (*Truncilla macrodon*)	PT	General Study Area	USFWS IPaC, TPWD RTEST
Monarch Butterfly (*Danaus plexippus*)	C	Project and General Study Areas	USFWS IPaC

[12] Texas Parks and Wildlife. Wildlife Diversity Program: Texas Natural Diversity Database: Methodology.

Species	Species Status	Habitat Location	Listing Database
State-listed Species			
Swallow-tailed kite (*Elanoides forficatus*)	T	Project and General Study Areas	TPWD RTEST
White-faced ibis (*Plegadis chihi*)	T	General Study Area	TPWD RTEST
Wood stork (*Mycteria americana*)	T	Stopover habitat in General Study Area	TPWD RTEST
Zone-tailed hawk (*Buteo albonotatus*)	T	Project and General Study Areas	TPWD RTEST
Species of Greatest Conservation Need			
Woodhouse's toad (*Anaxyrus woodhousii*)	SGCN	Project and General Study Areas	TCAP
Strecker's chorus frog (*Pseudacris streckeri*)	SGCN	General Study Area	TCAP
Western burrowing owl (*Athene cunicularia hypugaea*)	SGCN	Project and General Study Areas	TCAP
Bald eagle (*Haliaeetus leucocephalus*)	SGCN	General Study Area	TCAP
Mountain plover (*Charadrius montanus*)	SGCN	Project and General Study Areas; non-breeding habitat	TCAP, BCC 2021
Interior least tern (*Sternula antillarum athalassos*)	SGCN	General Study Area	TCAP, BCC 2021
Franklin's gull (*Leucophaeus pipixcan*)	SGCN	General Study Area	TCAP
Lark bunting (*Calamospiza melanocorys*)	SGCN	Project and General Study Areas	TCAP
Chestnut-collared longspur (*Calcarius ornatus*)	SGCN	Project and General Study Areas	TCAP
Guadalupe bass (*Micropterus treculii*)	SGCN	TxNDD EO in General Study Area	TCAP
A miner bee (*Andrena scotoptera*)	SGCN	Project and General Study Areas	TCAP
American bumblebee (*Bombus pensylvanicus*)	SGCN	Project and General Study Areas	TCAP
Variable Cuckoo Bumblebee (*Bombus variabilis*)	SGCN	Project and General Study Areas	TCAP

Species	Species Status	Habitat Location	Listing Database
Western hog-nosed skunk (*Conepatus leuconotus*)	SGCN	Project and General Study Areas	TCAP
Big brown bat (*Eptesicus fuscus*)	SGCN	General Study Area	TCAP
Eastern red bat (*Lasiurus borealis*)	SGCN	General Study Area	TCAP
Hoary bat (*Lasiurus cinereus*)	SGCN	Project and General Study Areas	TCAP
Long-tailed weasel (*Mustela frenata*)	SGCN	General Study Area	TCAP
Cave myotis bat (*Myotis velifer*)	SGCN	Project and General Study Areas	TCAP
Tricolored bat (*Perimyotis subflavus*)	SGCN	Project and General Study Areas	TCAP
Western spotted skunk (*Spilogale gracilis*)	SGCN	TxNDD EO in General Study Area	TCAP
Eastern spotted skunk (*Spilogale putorius*)	SGCN	Project and General Study Areas	TCAP
Swamp rabbit (*Sylvilagus aquaticus*)	SGCN	Project and General Study Areas	TCAP
High-hat cavesnail (*Phreatodrobia punctata*)	SGCN	General Study Area	TCAP
Barton Cavesnail (*Stygopyrgus bartonensis*)	SGCN	General Study Area	TCAP
Texas map turtle (*Graptemys versa*)	SGCN	General Study Area	TCAP
Plateau spot-tailed earless lizard (*Holbrookia lacerata*)	SGCN	Project and General Study Areas	TCAP
Slender glass lizard (*Ophisaurus attenuates*)	SGCN	Project and General Study Areas	TCAP
Eastern box turtle (*Terrapene carolina*)	SGCN	General Study Area	TCAP
Western box turtle (*Terrapene ornate*)	SGCN	Project and General Study Areas	TCAP
Texas garter snake (*Thamnophis sirtalis annectens*)	SGCN	Project and General Study Areas	TCAP
Texas milk vetch (*Astragalus reflexus*)	SGCN	Project and General Study Areas	TCAP

Species	Species Status	Habitat Location	Listing Database
Gravelbar brickellbush (*Brickellia dentata*)	SGCN	General Study Area	TCAP
Narrowleaf brickellbush (*Brickellia eupatorioides var. gracillima*)	SGCN	General Study Area	TCAP
Basin bellflower (*Campanula reverchonii*)	SGCN	General Study Area	TCAP
Tree dodder (*Cuscuta exaltata*)	SGCN	Project and General Study Areas	TCAP
Net-leaf bundleflower (*Desmanthus reticulatus*)	SGCN	Project and General Study Areas	TCAP
Low spurge (*Euphorbia peplidion*)	SGCN	Project and General Study Areas	TCAP
Texas fescue (*Festuca versuta*)	SGCN	General Study Area	TCAP
Stanfield's beebalm (*Monarda stanfieldii*)	SGCN	General Study Area	TCAP
Heller's marbleseed (*Onosmodium helleri*)	SGCN	General Study Area	TCAP
Correll's false dragon-head (*Physostegia correllii*)	SGCN	General Study Area	TCAP
Little Bluestem-indiangrass series	Priority Habitat	TxNDD EO in General Study Area	TCAP
USFWS Birds of Conservation Concern			
Sprague's Pipit (*Anthus spragueii*)	--	Project and General Study Areas; non-breeding habitat	BCC 2021
Chimney Swift (*Chaetura pelagica*)	--	Project and General Study Areas	BCC 2021
Little Blue Heron (*Egretta caerulea*)	--	Project and General Study Areas	BCC 2021
Loggerhead Shrike (*Lanius ludovicianus*)	--	Project and General Study Areas	BCC 2021
Red-headed Woodpecker (*Melanerpes erythrocephalus*)	--	Project and General Study Areas	BCC 2021
Long-billed Curlew (*Numenius americanus*)	--	Project and General Study Areas; non-breeding habitat	BCC 2021
Kentucky Warbler (*Geothlypis formosa)*	--	General Study Area	BCC 2021

Species	Species Status	Habitat Location	Listing Database
American Golden-plover (*Pluvialis dominica*)	--	Project and General Study Areas; non-breeding habitat	BCC 2021
Prothonotary Warbler (*Protonotaria citrea*)	--	General Study Area	BCC 2021
Lesser Yellowlegs (*Tringa flavipes*)	--	General Study Area; non-breeding habitat	BCC 2021

3.5.3 Significance Threshold

FAA Order 1050.1F, Exhibit 4-1, provides the FAA's significance threshold for biological resources. This order states that a significant impact would occur if "the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat." No significance threshold has been developed for non-listed species.

3.5.4 Methodology

To evaluate the presence of species of concern within the Project Study Area, a desktop analysis was performed using a Geographical Information System (GIS) and other readily available data. Spatial and other data reviewed included USFWS National Wetland Inventory, species habitat requirements, TxNDD occurrences, eBird occurrences,[13] and TPWD descriptions of Ecologically Significant Stream Segments.

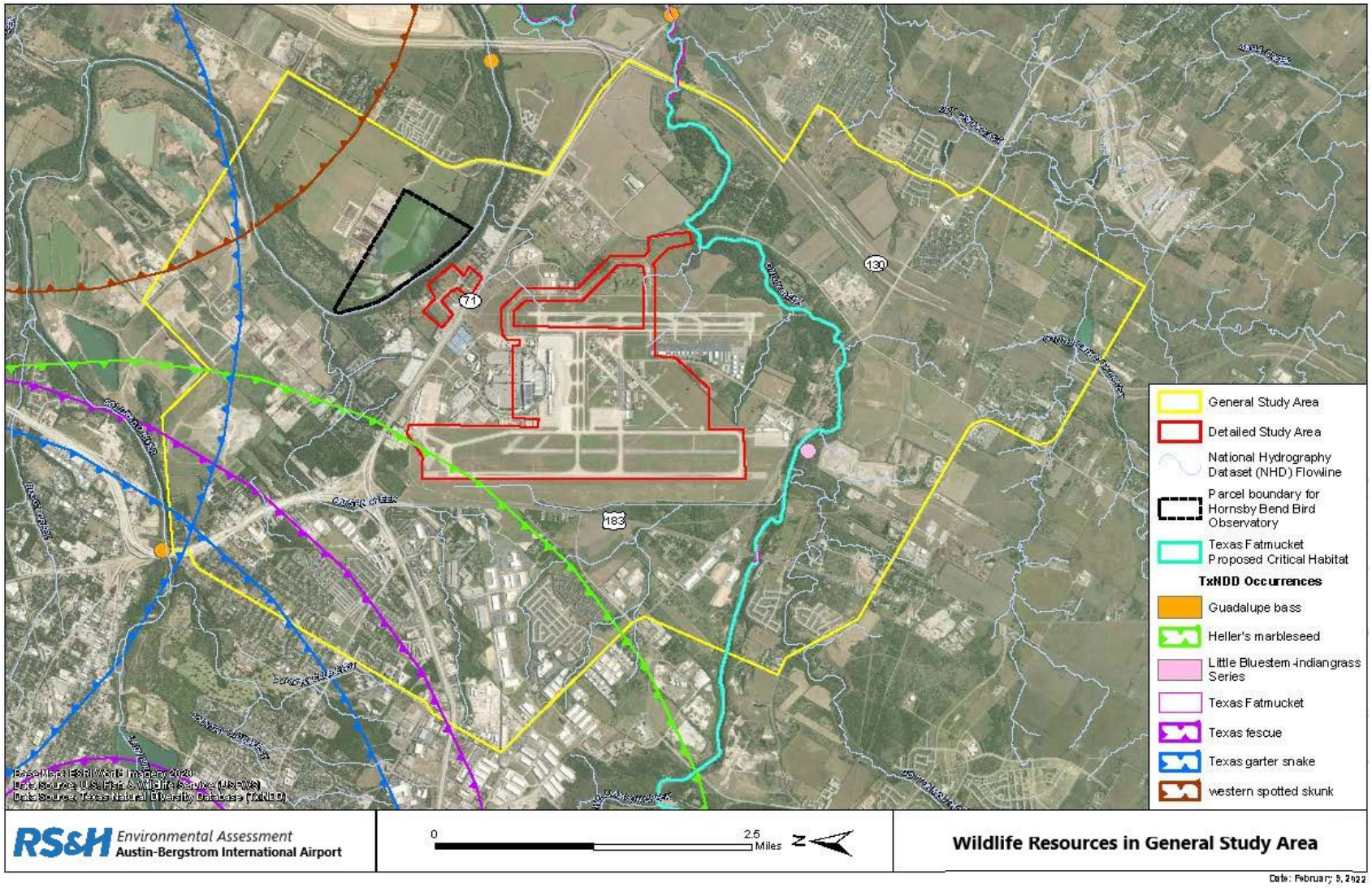
Wildlife biologists traveled to the site on August 31, September 1, and September 9, 2021, and recorded vegetation communities, sensitive environmental features, and additional habitat within the Project Study Area.

3.5.5 Environmental Consequences

This section describes the potential impacts to biological resources associated with implementation of the No Action Alternative and the Proposed Project.

[13] Cornell Lab of Ornithology. eBird. Retrieved December 2021, from: http://www.ebird.org.

EXHIBIT 3.5-1
WILDLIFE RESOURCES IN THE GENERAL STUDY AREA



3.5.5.1 No Action Alternative

Under the No Action Alternative, no physical changes to Airport buildings or infrastructure would occur. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under the No Action Alternative. Therefore, there would be no effect on biological resources.

3.5.5.2 Proposed Project

The Proposed Project would result in the loss of primarily non-native, mowed, and maintained grassland in both the airside and landside portions of the Project Study Area. This loss of vegetation would reduce habitat for species that inhabit grasslands.

Freshwater mussel species and Texas Fatmucket Critical Habitat would not be adversely affected by the Proposed Project. Impacts to surface waters within the General Study Area are discussed in detail in **Section 3.14.2, Surface Waters.** In summary, there would be no impacts to runoff quantity for Carson Creek, the Colorado River, or Onion Creek; peak flows would be maintained within the regulated levels. With no increases to peak flows, the Proposed Project would not result in additional scouring flows that would dislodge freshwater mussels beyond existing impacts. The quality of stormwater runoff would be maintained at current regulatory levels in accordance with state and local requirements. As a result, the Proposed Project would not jeopardize the continued existence of freshwater mussel species or result in the destruction or adverse modification of Ecologically Significant Stream Segments or Critical Habitat within the General Study Area.

The Whooping Crane, which is rarely seen using the area as stopover habitat, is not expected to be adversely affected by the Proposed Project. The vegetation and noise impacts discussed above are not expected to jeopardize the continued existence of the Whooping Crane.

The Monarch Butterfly uses flowering vegetation to feed adults and milkweed species to lay eggs and raise young. Removal of grassland vegetation for the Proposed Project would remove milkweed and would have an effect on Monarch Butterfly habitat, which could impede species behaviors such as feeding and reproduction. Grassland clearing activity has the potential to kill or harm butterflies or larvae using the habitat. Therefore, the Proposed Project may adversely affect the Monarch Butterfly. The Monarch Butterfly is a candidate species that is expected

to be proposed for listing in 2024,[14] and no consultation with USFWS is required at this time.

3.5.6 Mitigation Measures

TPWD has provided a letter with guidelines and best management practices (BMPs) related to the Proposed Project (see **Appendix E**). Implementation of these BMPs would reduce and avoid impacts to biological resources. Guidelines include discussion of general construction recommendations, impacts to vegetation/wildlife habitat, water resources, lighting, federal laws, state laws, and species of greatest conservation need. These landscaping recommendations would be incorporated into revegetation and maintenance plans where applicable in the Proposed Project.

3.6 CLIMATE

This section describes the regulations, affected environment, significance threshold(s) pertaining to climate, and the methodologies used to determine potential effects. In addition, this section identifies the potential climate impacts of the No Action Alternative and Proposed Project, as well as mitigation measures, if needed.

3.6.1 Regulatory Setting

Appendix C lists the regulations associated with climate.

3.6.2 Affected Environment

GHGs are gases that trap heat in the earth's atmosphere. GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), water vapor (H_2O) and other compounds. The burning of fossil fuels is a major source of these gases. Activities that require fuel or power are the primary stationary sources of GHGs at airports. Aircraft and ground access vehicles, which are not under the control of an airport, typically generate more GHG emissions than airport-controlled sources.

Global warming occurs when GHGs are trapped in the earth's atmosphere. In terms of U.S. contribution, the Government Accountability Office (GAO) reports that "domestic aviation contributes about ten percent of total carbon dioxide emissions, according to EPA data," compared with other industrial sources (23%), including the remainder of the transportation sector (19%) and power generation (25%). The

[14] State of Texas Depart of Transportation. "Guidance: Addressing the Monarch Butterfly in a TxDOT Species Analysis." 2021.

International Panel on Climate Change (IPCC) estimates that 3.5 percent of the total human made warming of the planet can be attributed to aviation.

3.6.3 Significance Threshold

While FAA 1050.1F does not provide a significance threshold for aviation related GHG emissions, the "Council of Environmental Quality (CEQ) specifically asks agencies to consider the potential effects of a proposed action on climate change as indicated by its GHG emissions and the implications of climate change for the environmental effects of a proposed action." The projected increase in GHG emissions from the Proposed Project is discussed in the context of national and global GHG emissions from all sources.

3.6.4 Methodology

The emissions were calculated using aviation and construction sector preferred models developed by the FAA, EPA, and Airports Council International – Europe. GHG emissions were calculated using the Airport Carbon and Emission Reporting Tool (ACERT), Aviation Environmental Design Tool (AEDT), and Motor Vehicle Emissions Simulator (MOVES).

3.6.5 Environmental Consequences

This section describes the potential climate effects associated with implementation of the No Action Alternative and the Proposed Project.

3.6.5.1 No Action Alternative

Under the No Action Alternative, no physical changes to Airport buildings or infrastructure would occur. The Airport would continue to operate and serve forecast aviation demands. This would result in an increase in emissions from aircraft operations, passenger and employee commuting, and ground service equipment, such as auxiliary power units, serving the remote gates. **Table 3.6-1** presents the GHG emissions anticipated to occur under the No Action Alternative. GHGs in **Table 3.6-1** have been converted to carbon dioxide equivalents (CO2e), which is a unit of measurement used to standardize the climate effects of various GHGs. The emissions are divided into three categories: emissions under the direct control of the Airport, aircraft operations, and construction.

TABLE 3.6-1
GHG EMISSIONS ASSOCIATED WITH AIRCRAFT OPERATIONS FOR THE NO ACTION ALTERNATIVE AND THE PROPOSED PROJECT

Year	Activity	Aircraft Fuel Usage (tons)	Greenhouse Gases (metric tons/year)			CO_2e (metric tons/year) /2/
			CO_2	CH_4	N_2O	
2027	No Action Alternative /1/	67,596	213,262	N/A	N/A	**193,468**
	Proposed Project /1/	67,596	213,262	N/A	N/A	**193,468**
2032	No Action Alternative /1/	70,338	221,197	N/A	N/A	**200,666**
	Proposed Project /1/	77,940	245,906	N/A	N/A	**223,082**

Notes:
1. GHG emissions are derived by AEDT for each condition.
2. Emissions are reported as metric tons of carbon dioxide equivalents to present a normalized unit of greenhouse gas emissions based on the global warming potential of each gas. CO_2e is a combination of CO2 emissions with the CO2-equivalent emissions of other greenhouse gases.
N/A Not applicable, AEDT does not estimate CH4 and N20 emissions.

Source: HMMH 2022

3.6.5.1 Proposed Project

Construction activities associated with the Proposed Project would result in a temporary increase in GHG emissions associated with construction equipment, delivery/haul truck trips, and construction worker commute trips. **Table 3.6-2** presents the GHG emissions associate with construction and demolition activities of the Proposed Project. The net change in emissions of GHGs associated with construction and demolition would be greater under the Proposed Project compared to the No Action Alternative; however, any GHG increase from construction and demolition associated with the Proposed Project would comprise a very small fraction of the GHG emissions in Travis County.

The GHG emissions from aircraft operations associated with the Proposed Project are presented in **Table 3.6-1**. The net change in emissions of GHGs associated with aircraft operations would be greater under the Proposed Project compared to the No Action Alternative; however, any GHG increase from aircraft operations associated with the Proposed Project would comprise a very small fraction of the GHG emissions in the Austin-Round Rock-San Marcos Metropolitan Statistical Area (MSA).

TABLE 3.6-2
GHG EMISSIONS ASSOCIATED WITH CONSTRUCTION AND DEMOLITION FOR THE PROPOSED PROJECT

Year	Greenhouse Gases (metric tons/year)			CO_2e (metric tons/year) /2/
	CO_2	CH_4	N_2O	
Construction and Demolition /1/				
2022	4,611	0.021	0.004	**4,613**
2023	17,900	0.083	0.017	**17,907**
2024	32,928	0.144	0.030	**32,940**
2025	20,689	0.143	0.032	**20,702**
2026	8,653	0.019	0.002	**8,654**
2027	7,055	0.051	0.013	**7,061**
2028	6,947	0.071	0.019	**6,955**
2029	4,046	0.057	0.014	**4,051**
2030	1,868	0.018	0.005	**1,870**

Notes:
1. Construction and demolition emissions derived from ACEIT and EPA MOVES3.
2. Emissions are reported as metric tons of carbon dioxide equivalents to present a normalized unit of greenhouse gas emissions based on the global warming potential of each gas. CO_2e is a combination of CO2 emissions with the CO2-equivalent emissions of other greenhouse gases.

Source: HMMH 2022

3.6.6 Mitigation Measures

Because the FAA has not established significant thresholds related to GHG emissions, no significant impact has been identified. In the absence of potentially significant impacts, no mitigation measures are proposed. However, to reduce emissions, adhering to the City's Climate Equity Plan[15] would reduce GHG emissions as identified in **Table 3.6-3**.

[15] City of Austin, *Austin Climate Equity Plan,* September 2021.

TABLE 3.6-3
CITY OF AUSTIN CLIMATE EQUITY PLAN PROVISIONS RELATED TO THE AIRPORT

GHG Reduction Program	Year Initiated	Program / Project Overview	Supported by Proposed Project
Green Building Program	2012	The airport currently has 9 buildings with green building certifications through the United States Green Building Council or Austin Energy Green Building.	Yes
Natural Gas Avoidance Projects	2017	Two new buildings with over 100,000 square feet eliminated natural gas usage.	Yes
GreenChoice Fuel	2012	All City-owned facilities at the Airport are powered by carbon neutral wind power from west Texas. The City-owned facilities have no scope 2 carbon emissions and all electric vehicles and equipment are carbon neutral.	Yes
Renewable Natural Gas	2020	Renewable natural gas is used in the Airport's shuttle bus fleet creating carbon neutral operations.	Yes
Transportation Bio-fuels	2010	Biodiesel and ethanol (E85) fuels used in the fleet vehicles and equipment.	Yes
Airline Equipment Electrification	2015	Airlines have voluntarily electrified 20% of their aircraft support vehicles.	Yes
On-site Renewable Energy Projects	2012	Projects incorporating on-site solar to reduce local grid demand.	Yes
International Carbon Management Protocols	2017	The Airport follows international aviation protocols to map, reduce, and off-set carbon emissions from airport operations. The Airport achieved Carbon Neutrality for 2019 emissions in 2021. AUS is only the 4th North American airport to reach this milestone.	Yes
Certified Carbon Off-sets	2018	The Airport started purchasing verified carbon off-sets for scope 1 emissions	Yes
Public Charging Infrastructure	2015	The Airport and parking providers install publicly accessible charger infrastructure to support customer fuel switching.	Yes
DOA Vehicle Electrification	2018	Electric vehicles are incorporated into the fleet when older vehicles are replaced.	Yes
Light Rail	Planning Phase	Project Connect Blue Line will connect downtown with the Airport.	Yes

Source: HMMH 2022

3.7 DEPARTMENT OF TRANSPORTATION SECTION 4(F)

This section describes the regulations, affected environment, significance threshold(s) pertaining to Department of Transportation Section 4(f) resources, and the methodologies used to determine potential effects. In addition, this section identifies the potential Section 4(f) impacts of the No Action Alternative and Proposed, as well as mitigation measures, if needed.

Section 4(f) provides protection for publicly owned parks, recreational areas, wildlife and waterfowl refuges, and public and private historic sites. A proposed action can "use" a Section 4(f) physically, or constructively. As stated in FAA Order 1050.1F, a "physical use" would occur "if the proposed action or alternative(s) would involve an actual physical taking of 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 or facilities on the property."[16]

A "constructive use" would occur in the event that a proposed action does not physically impact a Section 4(f) resource, but impacts it by means of noise, air pollution, water pollution, or other impacts with the potential to dissipate its aesthetic value, harm its wildlife, restrict its access, and takes it in every practical sense. As stated in FAA Order 1050.1F, a constructive use occurs "when the impacts of a project on a Section 4(f) property are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the Section 4(f) property that contribute to its significance or enjoyment are substantially diminished. This means that the value of the Section 4(f) property, in terms of its prior significance and enjoyment, is substantially reduced or lost. For example, noise would need to be at levels high enough to have negative consequences of a substantial nature that amount to a taking of a park or portion of a park for transportation purposes."

3.7.1 Regulatory Setting

Appendix C identifies the regulations associated with Section 4(f) resources.

3.7.2 Affected Environment

No publicly owned and accessible parks, recreation areas, wildlife and waterfowl refuges, or historic sites are located within the Project Study Area. Known Section 4(f) resources located in the General Study Area include two National

[16] Federal Aviation Administration. (2015). Order 1050.1F, Section B-2.2.1. Retrieved December 2021, from Federal Aviation Administration: https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050_1F.pdf.

Register of Historic Places (NRHP) eligible historic resources, two public parks, and one wildlife sanctuary (see **Exhibit 3.7-1**).

The nearest known NRHP-eligible historic site in the General Study Area, the Martin Family Cemetery and Colorado School, is located within the current Airport property boundaries but is more than 1,800 feet northwest of the boundaries of the Project Study Area. The next-nearest NRHP-eligible historic resource in the General Study Area, the Moore's Crossing Historic District, is located outside of Airport property boundaries, more than 5,500 feet southeast of the boundaries of the Project Study Area.

Public parks in the General Study Area include Civitan Park at Vargas Road and US Highway 183, approximately 1.25 miles northwest of the boundaries of the Project Study Area, and Richard Moya Park, located along Burleson Road less than 1,000 feet south of the boundaries of the Project Study Area.

The only wildlife management area within the General Study Area is the City's Center for Environmental Research at Hornsby Bend (CERHB), located approximately 1,000 feet north of the boundaries of the Project Study Area, along the north bank of the Colorado River.

3.7.3 Significance Threshold

FAA Order 1050.1F, Exhibit 4-1, provides the FAA's significance threshold for Section 4(f), which states that a significant impact would occur if "the 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."

3.7.4 Methodology

FAA Order 1050.1F Desk Reference, Chapter 5, Section 3 provides guidance specific to airport projects to determine project use of a Section 4(f) resource. Methods used to determine land use compatibility under 14 CFR Part 150 (Noise Compatibility Planning) are helpful in determining if aircraft noise would cause a constructive use of Section 4(f) resources. The General Study Area was reviewed for any publicly owned parks, recreational areas, wildlife or waterfowl refuges, or historic sites. As described in **Section 3.7.2**, five Section 4(f) resources were identified within the General Study Area: two parks, two properties eligible for listing on the NRHP, and one wildlife management area. An analysis of whether any components of the No Action Alternative and Proposed Project would have a physical or constructive use of the Section 4(f) was conducted.

3.7.5 Environmental Consequences

This section describes the potential effects to Section 4(f) properties associated with the implementation of the No Action Alternative and the Proposed Project.

3.7.5.1 No Action Alternative

With no Section 4(f) properties in the Project Study Area, the No Action Alternative would not have a direct use of a Section 4(f)-protected resource.[17] Within the General Study Area, none of the Section 4(f) properties would experience a significant noise impact under the No Action Alternative (see **Section 3.12**), so no constructive use of any Section 4(f) property would occur.

3.7.5.2 Proposed Project

With no Section 4(f) properties in the Project Study Area, the No Action Alternative would not have a direct use of a Section 4(f)-protected resource.[18] As shown in **Table 3.7-1**, none of the Section 4(f) properties within the General Study Area would experience a significant noise impact under the Proposed Project compared to the No Action Alternative (see **Section 3.13**), so no constructive use of any Section 4(f) property would occur.

3.7.6 Mitigation Measures

The Proposed Project would not result in the physical or constructive use of a Section 4(f) resource for either study year. Because there would be no physical or constructive use of a Section 4(f) resource, and because no significance threshold defined in FAA Order 1050.1F is met, mitigation measures for Section 4(f) resources are not proposed.

3.8 HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

This section describes the regulations, affected environment, significance threshold(s) pertaining to hazardous materials, solid waste, and pollution prevention. This section also describes methodologies used to determine potential effects and identifies the potential hazardous material, solid waste, and pollution prevention impacts of the No Action Alternative and Proposed Project, as well as mitigation measures, if needed.

[17] US Department of Transportation, Federal Highways Administration. Environmental Review Toolkit: Section 4(f) Tutorial, Section 4(f) Properties. Published online 2021 as Section 4(f) Properties (dot.gov).
[18] Ibid.

EXHIBIT 3.7-1
SECTION 4(F) PROPERTIES IN THE GENERAL STUDY AREA

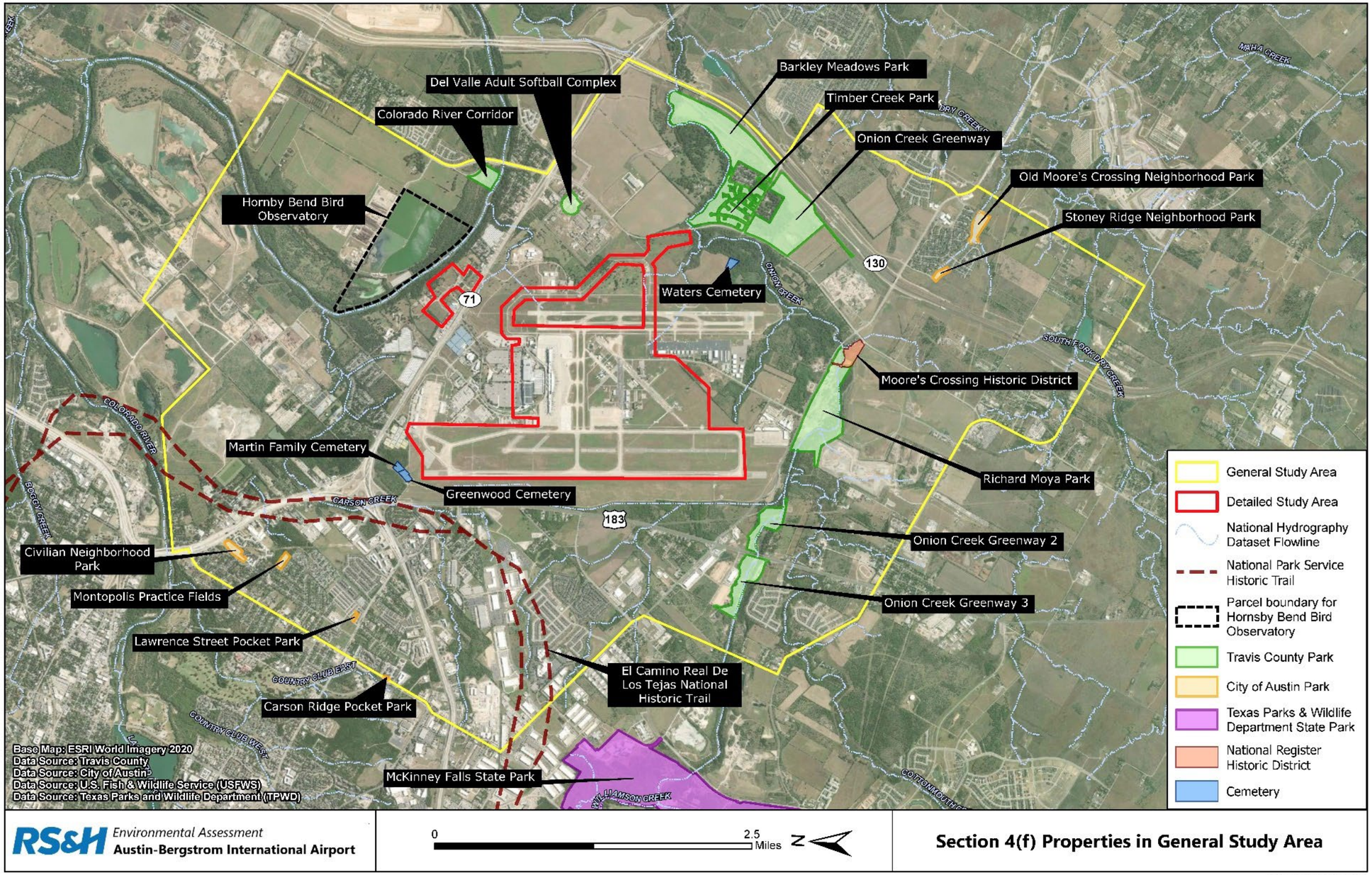


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TABLE 3.7-1
CHANGE IN NOISE FOR SECTION 4(F) PROPERTIES IN GENERAL STUDY AREA

Type of Resources	Site Name	Area (acres)	Latitude	Longitude	dB			
					2019	2032 /a/		
						No Action Alternative	Proposed Project	Change
City Park	Civitan Neighborhood Park	6.9	-97.690160	30.237725	54.0	51.1	55.6	0.4
City Park	Montopolis Practice Fields	4.1	-97.691361	30.232186	53.4	54.4	54.8	0.4
City Park	Carson Ridge Pocket Park	0.5	-97.706355	30.220007	46.3	47.4	47.8	0.4
City Park	Stoney Ridge Neighborhood Park	3.9	-97.651316	30.157817	61.6	62.4	62.9	0.5
City Park	Old Moore's Crossing Neighborhood Park	11.9	-97.645021	30.153686	57.4	58.3	58.7	0.4
City Park	Lawrence Street Pocket Park	1.0	-97.698521	30.223805	49.8	50.9	51.4	0.5
City Park	Hornsby Bend Bird Observatory	281.2	-97.650096	30.219504	58.2	59.0	59.4	0.4
County Park	Barkley Meadows Park	123.2	-97.633624	30.183189	49.4	50.4	50.8	0.4
County Park	Colorado River Corridor	15.3	-97.640196	30.210079	51.7	52.7	53.2	0.5
County Park	Del Valle Adult Softball Complex	11.7	-97.643447	30.200361	54.0	54.9	55.4	0.5
County Park	Onion Creek Greenway 1	120.7	-97.644758	30.175463	57.4	58.4	58.8	0.4
County Park	Onion Creek Greenway 2	28.7	-97.684791	30.176956	62.8	63.8	64.2	0.4
County Park	Onion Creek Greenway 3	38.1	-97.692493	30.179414	55.7	56.7	57.2	0.5
County Park	Richard Moya Park	114.4	-97.669752	30.170780	59.2	60.3	60.7	0.4
County Park	Timber Creek Park	69.0	-97.643073	30.182138	55.7	56.7	57.1	0.4
Historic Site	Moores Crossing NRHP District	13.2	-97.662204	30.167789	62.7	63.6	64.0	0.4
Historic Site	Martin Family Cemetery and Colorado School	2.7	-97.678694	30.219290	70.1	71.2	71.6	0.4
Historic Site	El Camino Real National Historic Trail	N / A	-97.684341	30.215802	64.4	65.4	65.9	0.5
Cemetery	Greenwood Cemetery	3.6	-97.679733	30.218447	71.6	72.7	73.2	0.5
Cemetery	Waters Cemetery	3.2	-97.650708	30.181779	64.1	64.9	65.4	0.5

/a/ This analysis is for 2032. No analysis conducted for 2027 because the noise contours for the No Action Alternative and the Proposed Project are the same in 2027. See **Section 3.12, Noise**.

3.8.1 Regulatory Setting

Appendix C identifies the regulations associated with hazardous materials, solid waste, and pollution prevention.

3.8.2 Affected Environment

3.8.2.1 Hazardous Materials

According to the USEPA Facility Registry Service (FRS), the former Bergstrom Air Force Base (BAFB) is listed as a hazardous material site. When BAFB was closed in the early 1990s, an Environmental Basewide Survey (EBS) was performed to catalog all hazardous materials stored and used on the base at the time of closure along with documenting all contaminated areas and appropriate remedial actions. During the transfer of BAFB to the City of and the construction of AUS, remediation was conducted by the Air Force and several areas were deeded to the City after remediation had been completed. At present, there is only one area at AUS that has not achieved regulatory closure from former Air Force activities, known as Solid Waste Management Unit (SWMU) 76. SWMU 76 is located primarily in the northern portion of the long-term parking lots and is bordered to the west by Spirit of Texas Drive, to the north by Highway 71, to the east by Hotel Drive, and to the south by the edge of Parking Lot C. SWMU 76 consists of the former sanitary sewer system of BAFB and contained trichloroethylene (TCE) plumes discovered during base closure investigations of the sewer system in November 1995 and January 1997. The plumes were determined to be the result of former aircraft maintenance activities that occurred from 1942, when BAFB opened, to 1993 when base operations ended. On-going monitoring is performed by the Air Force. In addition, there are some deed restricted areas in Parcel 7 that require any action that would have soil disturbing activities to be accomplished using standard methods for handling contaminated soils.

Given the age of some buildings proposed to be demolished as part of the Proposed Project, the City of Austin completed a hazardous materials survey and abatement plan for any asbestos found in the affected buildings. A report for asbestos surveys and abatement activities is included in **Appendix G**.

In addition, AUS contains seven (7) landfills that were created by the Air Force during base operations. These landfills are split between two different parts of the Airport, with Landfills 1 and 2 located near the cargo apron and Taxiway Victor and Landfills 3 through 7 located in the southeast portion of the Airport between Golf Course Road, the East Perimeter Road, and FM 973.

Commercial passenger aircraft at AUS are currently fueled with fuel trucks, managed by Menzies, with trucks going between the apron at the BJT and the AUS

fuel farm. In addition, Menzies manages the fueling storage tanks used by ground surface equipment (GSE) at AUS. In 2019, GSE unleaded gasoline usage was 109,469 gallons and diesel usage was 158,889 gallons.

3.8.2.2 Solid Waste

Airport waste is managed at the Texas Disposal Systems (TDS) landfill in Creedmoor, Texas, which has 11 million tons remaining of permitted capacity. The TDS facility can be expanded within its current land holdings. The Austin-Round Rock Metropolitan Statistical Area includes several other landfills that have more than 47 million tons remaining of permitted capacity.[19] In 2019, the total trash generated at AUS was 3,564 tons. Through recycling and composting, 38% of this amount (1,356 tons) was diverted from the landfill. As part of City's commitment to sustainability, the Airport is continuously expanding existing programs, such as pour out stations, food donation programs, terminal composting, and exploring new initiatives.

3.8.3 Significance Threshold

The FAA has not established a significance threshold for hazardous materials, solid waste, or pollution prevention. However, FAA Order 1050.1F does provide a number of factors to consider in evaluating the context and intensity of potential environmental impacts. These include when the action would have the potential to:

- Violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management;
- Involve a contaminated site (including but not limited to a site listed on the National Priorities List);
- Produce an appreciably different quantity or type of hazardous waste;
- Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or
- Adversely affect human health and the environment.

3.8.4 Methodology

This EA analyzes the potential increase in hazardous materials and waste at the Airport under the Proposed Project, including construction and operation activities. This EA also analyzes how those materials and waste would be handled and stored at the Airport.

[19] Texas Commission on Environmental Quality, *2020 Municipal Solid Waste in Texas: A Year in Review*, 2020.

3.8.5 Environmental Consequences

This section describes the potential effects to hazardous materials, solid waste, and pollution prevention associated with the implementation of the No Action Alternative and the Proposed Project.

3.8.5.1 No Action Alternative

The No Action Alternative does not require any disruption of land or soil. Therefore, it would not affect the hazardous materials that exist at AUS. The increase in aircraft operations would result in a commensurate increase in the use of aviation fuel at AUS. An increase in the volume of solid waste would occur as a result of the increase in passengers at AUS. Given the capacity of the Texas Disposal Systems Landfill, this increase in solid waste would not be a significant impact.

3.8.5.2 Proposed Project

The Proposed Project would demolish several buildings in the south campus of the Airport (see Project D-2 on **Exhibit 1-8**). The City of Austin has completed a hazardous materials survey and an abatement plan for the removal of asbestos found in these buildings. The abatement would be completed in accordance with TCEQ standards and guidelines.

The Proposed Project would not disturb any areas that are known to contain hazardous materials and no use or removal of known hazardous materials would occur. Some construction activities have the potential to generate hazardous wastes, and some construction materials (fuel, oil, lubricants, paints, etc.) may consist of hazardous substances. The construction contractor would be required to implement proper practices to minimize or prevent the release of hazardous substances into the environment during construction activities. Any hazardous materials that may be encountered during construction would be managed and disposed of in compliance with federal, state, and local hazardous materials management guidelines.

If the Proposed Project would occur in any deed restricted areas, information would be shared with the design and construction teams to ensure workers are protected and, if in the event any materials are disturbed, the materials would be handled and disposed of in an approved manner, consistent with the restrictions outlined in the deeds and agreements with the TCEQ.

The Proposed Project would result in a slightly greater increase in the number of annual aircraft operations compared to the No Action Alternative. This increase in aircraft operations would result in an increase in the amount of aviation fuel used at

AUS. All fueling operations would be in compliance with federal, state, and local hazardous materials guidelines and would not be considered a significant impact.

The Proposed Project also would result in a slightly greater increase in the amount of solid waste generated at AUS because the increase in passengers under the Proposed Project is slightly greater than that of the No Action Alternative. Given the capacity of the Texas Disposal Systems Landfill, this increase in solid waste would not be a significant impact.

3.8.6 Mitigation Measures

As the Proposed Project would not generate hazardous materials or create hazardous waste, no mitigation is necessary. AUS implements BMPs to address pollution prevention initiatives. These initiatives consist of spill reporting procedures, maintaining and updating site-specific spill prevention control and countermeasure plans (SPCCs), maintaining and updating stormwater management plans for both industrial and construction stormwater, and following proper techniques for the handling and storage of hazardous materials.

No significant impacts related to solid waste are expected, as impacts related to construction waste are temporary. One of AUS' initiatives is to reduce solid waste sent to landfills as part of a Sustainability Management Plan via recycling and reuse initiatives that would help reduce temporary construction impacts to solid waste.

3.9 HISTORICAL, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

This section describes the regulations, affected environment, significance threshold(s) pertaining to historical, architectural, archeological, and cultural resources. This section also describes methodologies used to determine potential effects and identifies the potential historical, architectural, archaeological, and cultural resource impacts of the No Action Alternative and Proposed Project, as well as mitigation measures, if needed.

3.9.1 Regulatory Setting

Appendix C lists the regulations associated with historical, architectural, archeological, and cultural resources.

3.9.2 Affected Environment

An historic cultural resource is defined by FAA as an historical, architectural, archeological, or cultural resource listed or eligible for listing on the NRHP. Historic

cultural resources discussed in this section may include prehistoric and historic districts, sites, buildings, structures, or objects listed on or eligible for listing on the NRHP.

As required by Section 106 of the National Historic Preservation Act (NHPA), the FAA and Texas State Historic Preservation Officer (SHPO) have consulted to identify areas of direct and indirect effect according to the nature and extent of the Proposed Project. The direct Area of Potential Effect (APE) is the same as the Project Study Area. The indirect APEs considered for the Proposed Project include two zones surrounding the direct APE: the Visual APE (½ mile beyond the direct APE) and the Noise APE (within the projected 65 DNL noise contour for the Proposed Project).[20]

The following discussion describes historic (NRHP-listed or eligible) cultural resources that are recorded in the direct and indirect APEs defined by FAA and Texas SHPO for the Proposed Project. Additional historic cultural resources that may be present within the direct APE, but which have not yet been recorded, are also discussed.

No historic cultural resources are currently recorded within the direct APE. One Official Texas Historical Marker is present within the direct APE. It describes the project area's history as the Del Valle Army Air Base (Bergstrom Air Force Base) prior to its closure and transfer to the City in 1993.

The Bergstrom Air Force Base (BAFB) served as the headquarters for the U.S. Air Force's 12th Air Force, including both Strategic Air Command (SAC) and Tactical Air Command (TAC) operations. Multiple phases of Airport development since 1993 have replaced more than 90% of the original and Cold War-era BAFB building inventory and made widespread changes to the airfield runway and road systems. With the extensive loss of BAFB's building inventory, including its original air control tower, and conversion of the former 12th Air Force Headquarters building to a hotel, the surviving array of former BAFB buildings and infrastructure elements were found to lack sufficient historical significance and integrity to qualify for NRHP listing individually or collectively.[21] FAA consultation with Texas SHPO resulted in their concurrence under Section 106 that no above-ground historic architectural resources would be affected by the Proposed Project.[22]

One recorded archeological site (41TV1641) is located within the direct APE. According to the Texas Historical Commission's (THC) Archeological Sites Atlas (Atlas), 41TV1641 has not been evaluated for listing on the NRHP. This site was not

[20] Baer Engineering and Environmental Consulting, Inc., August 24, 2021.
[21] Ibid.
[22] Texas Historical Commission, September 22, 2021.

detected during ongoing archeological investigations and is presumed to have been destroyed during previous phases of Airport development. Initial consultation between FAA and Texas SHPO led to a Texas SHPO determination that the direct APE has a high probability for impacts to archeological resources due to a number of factors, including the high number of previously recorded sites within the indirect APE, the local topographic and geologic formations within the direct APE, and the record of historic occupation of the area before it was converted to a U.S. military airbase.[23]

Based on their consideration of the Project Study Area's archeological potential, as described above, FAA and Texas SHPO concurred that an intensive archeological survey would be required to identify possible unrecorded archeological resources within the direct APE.[24] Specific archeological survey locations and methods were recommended by FAA in an archeological Scope of Work that was approved by the Texas SHPO's archeological review staff.[25] No archeological resources have been recorded during the archeological surveys completed to date. Interim reports summarizing the findings of the completed survey investigations have been approved by the FAA and the Texas SHPO. Due to ongoing Airport operations in the West Runway area, Texas SHPO has approved a construction monitoring strategy for that safety-restricted area. Any archeological resources discovered during construction will be reported to the FAA and Texas SHPO, evaluated for NRHP-eligibility, and assessed for possible effects under Section 106.[26] FAA and Texas SHPO will determine whether each NRHP-eligible archeological site warrants preservation in place under Section 4(f) of the DOT Act.[27]

3.9.3 Significance Threshold

FAA Order 1050.1F has not established a significance threshold for historical, architectural, archeological, or cultural resources. Instead, the FAA is required to consider the impact of any action that would result in a finding of Adverse Effect through the Section 106 process. Section 106 allows for mitigation of impacts to achieve a No Adverse Effects determination by FAA and Texas SHPO. Section 4(f) of the DOT Act establishes a higher threshold for NRHP-eligible archeological sites that also warrant preservation in place.

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[23] Ibid.
[24] Ibid.
[25] Baer Engineering and Environmental Consulting, September 22, 2021, Scope of Work
[26] Code of Federal Regulations, Title 36, Chapter VIII, Part 800, Subpart B, Section 800.13 Post-Review Discoveries. Published online 2021 by the National Archives as eCFR :: 36 CFR 800.13 -- Post-review discoveries.
[27] US Department of Transportation, Federal Highways Administration. Environmental Review Toolkit: Section 4(f) Tutorial, Section 4(f) Use. Published online 2021 as Section 4(f) Use (dot.gov).

3.9.4 Methodology

The Section 106 process requires FAA, in consultation with the Texas SHPO, to consider project-related impacts to NRHP-listed and NRHP-eligible historical, architectural, archeological, and cultural resources. Official records, websites, maps, and information obtained through the public involvement process have identified no NRHP-listed and NRHP-eligible historical, architectural, archeological, or cultural resources in the direct APE. Archeological investigations to date have discovered no archeological sites within the direct APE. Archeological monitoring of the West Runway will be conducted during construction.

In the event that archeological resources are discovered during construction, FAA and Texas SHPO will treat each discovery as a post-review discovery under Section 106 and, if necessary, as a late discovery under Section 4(f) of the DOT Act. FAA and Texas SHPO consultation will determine each site's NRHP eligibility according to the National Parks Service's guidelines for evaluating NRHP eligibility. If the discovered archeological site(s) are determined to be eligible for NRHP listing, FAA and Texas SHPO will consult regarding the effect of the project on the NRHP-qualifying characteristics of the discovered site(s).

As defined by the Advisory Council on Historic Preservation's Section 106 regulations, an adverse effect occurs when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.[28] Section 106 allows for mitigation of project-related impacts to achieve a No Adverse Effects determination by FAA and Texas SHPO.

3.9.5 Environmental Consequences

This section describes the potential effects to historical, architectural, archeological, and cultural resources associated with implementation of the No Action Alternative and the Proposed Project.

3.9.5.1 No Action Alternative

As described in **Section 3.9.2**, there are no NRHP-listed historical, architectural, archeological, or cultural resources within the direct APE. The No Action Alternative would not result in any development at the Airport and, therefore, would not adversely affect NRHP-listed or eligible resources.

[28] Code of Federal Regulations, Title 36, Chapter VIII, Part 800, Subpart B, Section 800.5 Assessment of adverse effects. Published online 2021 by the National Archives as eCFR :: 36 CFR 800.5 -- Assessment of adverse effects.

3.9.5.2 Proposed Project

As described in **Section 3.9.2**, there are no NRHP-listed historical, architectural, archeological, or cultural resources within or near the Project Study Area. FAA and Texas SHPO concurred that no above-ground historic architectural resources are present within the direct or indirect APEs.[29] Therefore, the Proposed Project alternative would not adversely affect known NRHP-listed or eligible architectural resources.

Archeological investigations conducted to date indicate that one previously recorded archeological site was likely destroyed during prior phases of Airport development and is no longer present in the direct APE. Archeological investigations to date also indicate that no archeological sites are present within the surveyed portions of the direct APE. Construction monitoring of the West Runway may yet discover archeological sites that are NRHP-eligible within the direct APE. If archeological sites are discovered during those investigations, the FAA and Texas SHPO would consult to determine whether the discovered site(s) are NRHP-eligible using the National Parks Service's guidelines for evaluating NRHP eligibility[30] and whether the Proposed Project would cause adverse effects to newly recorded NRHP-eligible site(s).

3.9.6 Mitigation Measures

The Proposed Project would not result in any adverse effects to known historic cultural resources within the direct or indirect APEs. Therefore, mitigation measures and BMPs are not proposed. In the event that archeological material is discovered during construction, construction activities would stop immediately and the archeological investigator would contact the City. The City would coordinate the post-review discovery with the FAA and Texas SHPO in accordance with Section 106 and, if necessary, FAA will implement late discoveries procedures under Section 4(f) of the DOT Act.

3.10 LAND USE

This section describes regulations, affected environment, the significance threshold(s) pertaining to land use, the methodologies used to determine potential effects, and identifies the potential effects of the No Action Alternative and Proposed Project on compatible land use, as well as mitigation measures, if needed.

[29] Baer Engineering and Environmental Consulting, Inc., August 24, 2021.
[30] U.S. Department of the Interior, National Parks Service, Cultural Resources. National Register Bulletin 15. Published online 2021 as How to Apply the National Register Criteria for Evaluation (nps.gov).

3.10.1 Regulatory Setting

Appendix C lists the regulations associated with land use.

3.10.2 Affected Environment

The Airport is located in the City of Austin and is entirely within Travis County. The entire Airport, including the Project Study Area, is a special purpose area zoned as Aviation Services with a land use designation defined as "Transportation/Utilities."[31] Land uses within the General Study Area include industrial use, single family residential, multi-family residential, mobile home, mixed use, public use, commercial use, recreational/open space, transportation/utilities, and vacant/undefined (see **Exhibit 3.10-1**). Compatible land uses surrounding the Airport are defined by three Airport Overlay Zones that restrict certain land uses within each zone (see **Exhibit 3.10-2**). The three Airport Overlay Zones are defined as Airport overlay zone one (AO-1), which consists of a land use area that has a yearly day-night average sound level of between 70 and 75 decibels, Airport overlay zone two (AO-2), which consists of a land use area that has a yearly day-night average sound level of between 65 and 70 decibels, and Airport overlay zone 3 (AO-3), which consists of a land use area that has a yearly day-night average sound level of less than 65 decibels and areas located within one-half mile of the 65 decibel contour.[32] Certain land use restrictions within each airport overlay zone are defined in **Table 3.10-1**.

3.10.3 Significance Threshold

According to FAA Order 1050.1F, there are no established significance thresholds or specific independent factors to consider for land use impacts. However, the Order does state that "*the determination of significant impacts exist in the Land Use impact category is normally dependent on the significance of other impacts*."[33] Any conflict with state and/or locally designated land uses, and zoning may not individually result in a significant impact. Potential effects related to noise and noise-compatible land use, socioeconomics, environmental justice, and children's environmental health and safety risks could also result in significant land use impacts. These are discussed in **Section 3.13**.

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[31] City of Austin. Property Profile. Zoning Layers. Retrieved January 2022, from: https://www.austintexas.gov/GIS/PropertyProfile/.

[32] City of Austin. The Code of the City of Austin, Texas. Chapter 25-13. – Airport Hazard and Compatible Land Use Regulations. Article 3. – Compatible Land Uses. § 25-13-41 – Airport Overlay Zones. Retrieved January 2022, from: https://library.municode.com/tx/austin/codes/land_development_code?nodeId=TIT25LADE_CH25-13AIHACOLAUSRE.

[33] FAA. (2015). Order 1050.1F, Environmental Impacts: Policies and Procedures, July 2015.

EXHIBIT 3.10-1
EXISTING LAND USE

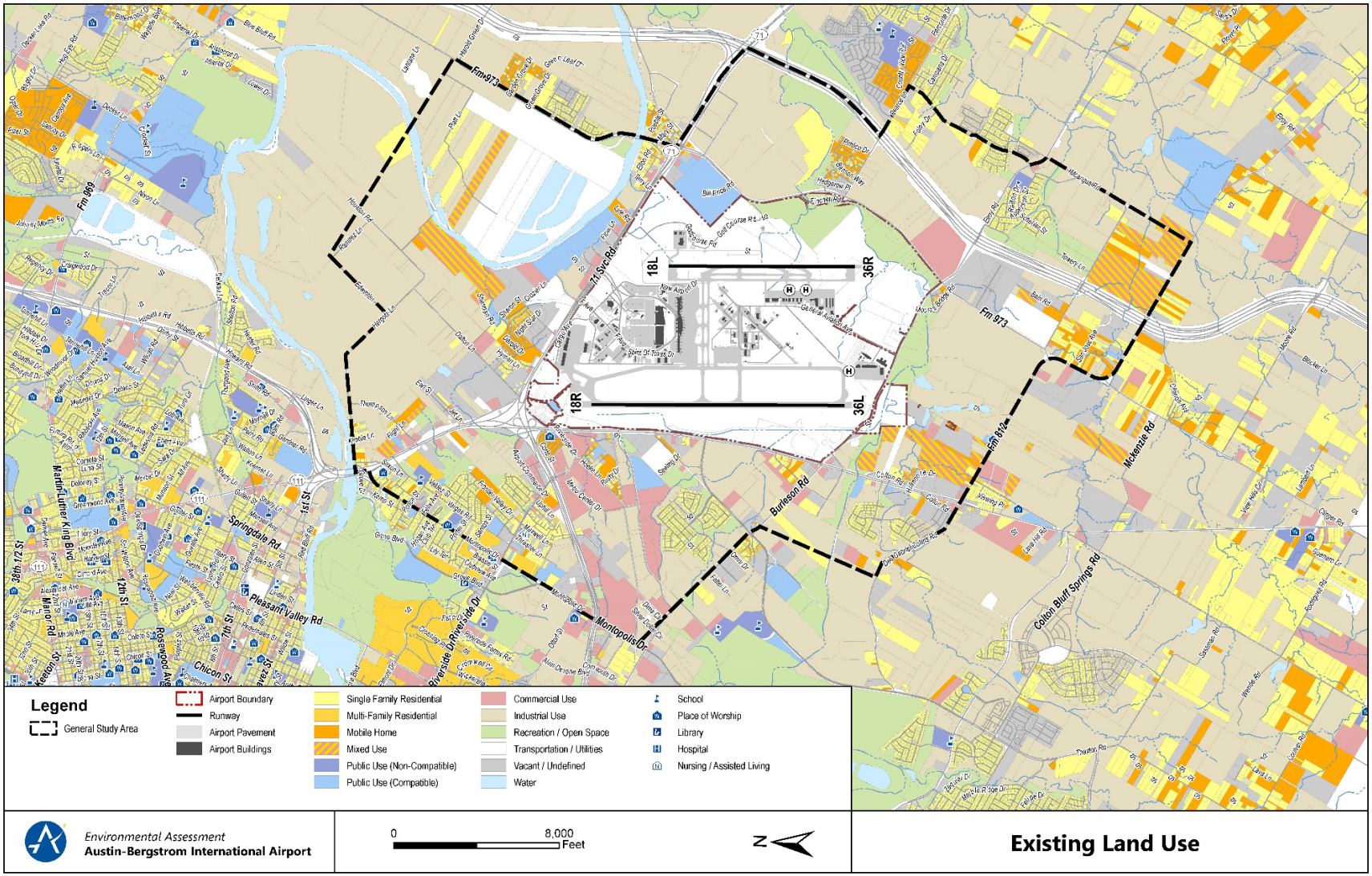


EXHIBIT 3.10-2
AIRPORT OVERLAY ZONES

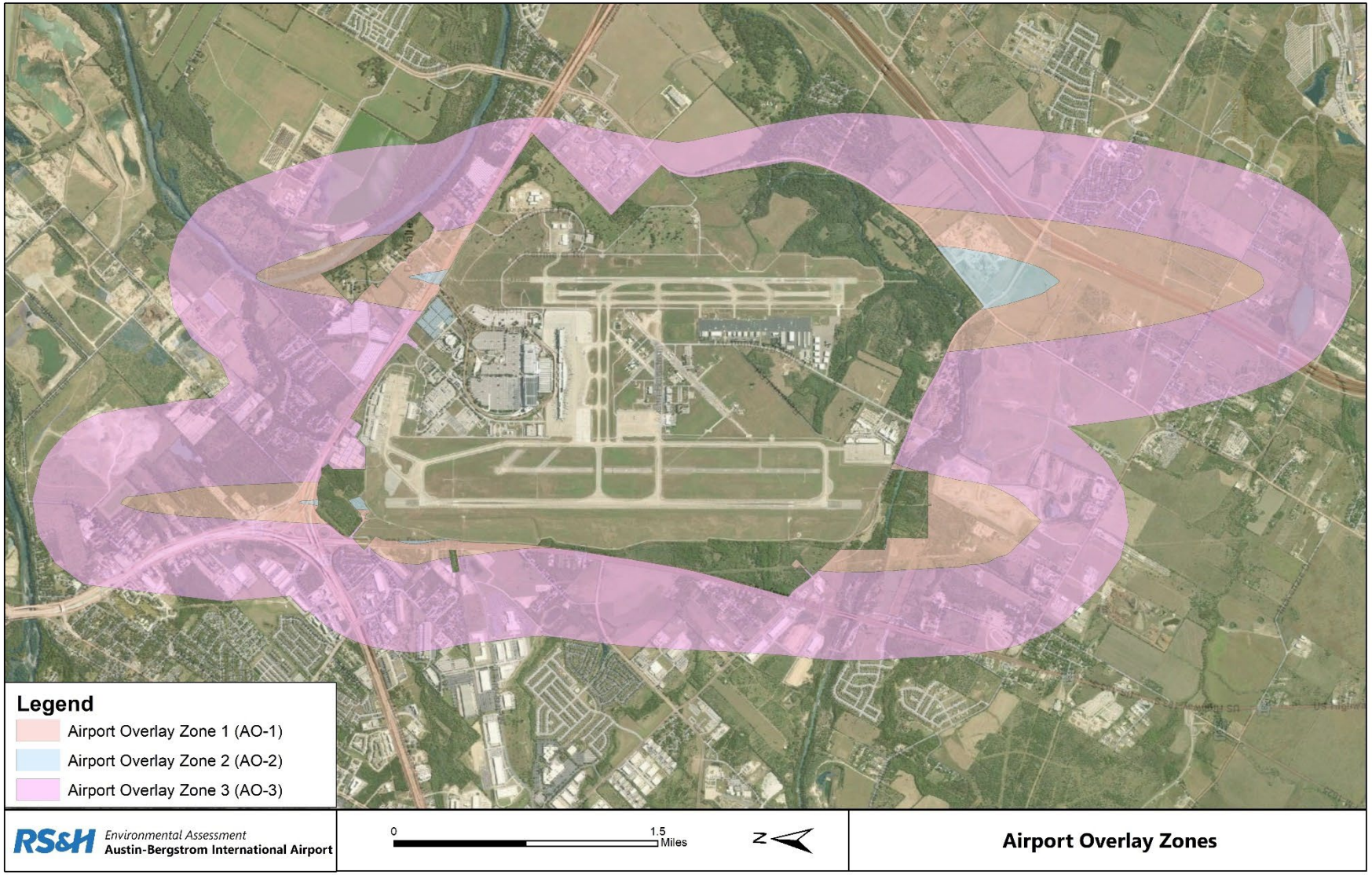


TABLE 3.10-1
AIRPORT OVERLAY ZONE LAND USE RESTRICTIONS

Land Uses	AO-1	AO-2	AO-3
Residential Uses			
All residential	X	X	R
Public Uses			
Schools	X	X	R
Hospitals and nursing homes	P-30db	P-30db	P-25db
Churches, auditoriums, and concert halls	P-30db	P-30db	P-25db
Government services	P-25db	P	P
Transportation	P-25db certain areas	P	P
Parking	P-25db certain areas	P	P
Commercial Uses			
Hotel or motel	P-30db	P-25db	P-25db
Offices, business and professional	P-25db	P	P
Wholesale and retail - building materials, hardware, and farm equipment	P-25db certain areas	P	P
Retail trade - general	P-25db	P	P
Utilities	P-25db certain areas	P	P
Communication	P-25db	P	P
Manufacturing and Production Uses			
Manufacturing, general	P-25db certain areas	P	P
Photographic and optical	P-25db	P	P
Farming, ranching, and forestry	P-30db residential	P-25db residential	P-25db residential
Mining and fishing, resource production and extraction	P	P	P
Recreational Uses			
Outdoor sports arenas and spectator sports	P-sound system	P-sound system	P-sound system
Outdoor music shells, amphitheaters	X	X	X
Nature exhibits and zoos	X	P	P
Amusements, parks, resorts, and camps	P	P	P
Golf courses, riding stables, and water recreation	P-25db	P	P

Source: The Code of the City of Austin, Texas § 25-13-44 Airport Overlay Land Use Table
P: The land use and related structures are permitted.
P-25db The land use and related structures are permitted, but measures to achieve a minimum outdoor-to-indoor noise level reduction of 25 decibels are required for a structure.
P-30db: The land use and related structures are permitted, but measures to achieve a minimum outdoor-to-indoor noise level reduction of 30 decibels are required for a structure.
P-25db certain areas: The land use and related structures are permitted, but measures to achieve a minimum outdoor-to-indoor noise level reduction of 25 decibels are required for a portion of a building that is a public reception area, an office, a noise sensitive area, or an area where the normal noise level is low.
P-sound system: The land use and related structures are permitted, but a special sound reinforcement system is required.
P-25db residential: The land use and related structures are permitted, but measures to achieve a minimum outdoor-to-indoor noise level reduction of 25 decibels are required for a residential building.

P-30db residential: The land use and related structures are permitted, but measures to achieve a minimum outdoor-to-indoor noise level reduction of 30 decibels are required for a residential building.
R: The land use and related structures are restricted by Section 25-13-45 (Residential And School Uses In Airport Overlay Zone Three).
X: The land use and related structures are prohibited.

3.10.4 Methodology

The compatibility of existing and planned land uses with an aviation or aerospace proposal is usually associated with noise impacts, as described in FAA 1050.1F Desk Reference, Chapter 11 *Noise and Noise Compatible Land Use*. The most current land use designations within Travis County were obtained for the General Study Area. The land use analysis considered the existing land uses within the General Study Area and evaluated the Proposed Project to determine whether it would be compatible with land use guidelines as well as local noise ordinances within Travis County. An adverse impact or incompatible land use would occur if the Proposed Project does not comply with current land use designations.

3.10.5 Environmental Consequences

This section describes the potential impacts to land uses associated with implementation of the No Action Alternative and the Proposed Project.

3.10.5.1 No Action Alternative

Under the No Action Alternative, no physical changes to Airport buildings or infrastructure would occur. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under NEPA and is not assumed under the No Action Alternative. Therefore, there would be no effect on land use.

3.10.5.2 Proposed Project

The construction of the Proposed Project would occur entirely on Airport property and would be compatible with the existing Airport environment. As described in **Section 3.10.2**, the current land use designation is "Transportation/Utilities" and has an aviation services district designation.[34] This designation allows for "airport-related uses" that are "compatible with or supports airport aviation and services."

As described in **Section 3.12 Noise and Noise-Compatible Land Use**, the change to the noise contour would not affect noise-sensitive land uses. In addition,

[34] City of Austin. The Code of the City of Austin, Texas. Chapter 25-2. – Zoning Uses, Districts, and Map; District Designations. Article 2. – Zoning Districts. § 25-2-142 – Aviation Services (AV) District Designation. Retrieved January 2022, from: https://library.municode.com/tx/austin/codes/land_development_code?nodeId=TIT25LADE_CH25-2ZO_SUBCHAPTER_A._ZONING_USES_DISTRICTS_MAP_DISTRICT_DESIGNATIONS_ART2ZODI_DIV5SPPUBADI_S25-2-142AVSEAVDIDE.

the Proposed Project would not change the land use at the Airport or be incompatible with land uses in the General Study Area. Therefore, the Proposed Project would have no impact to land uses.

3.10.6 Mitigation Measures

Construction and operation of the Proposed Project would not affect land use. Therefore, no mitigation or BMPs are proposed.

3.11 NATURAL RESOURCES AND ENERGY SUPPLY

This section describes the regulations, affected environment, significance threshold(s) pertaining to natural resources and energy supply. This section also describes the methodologies used to determine potential effects and identifies the potential natural resource and energy supply impacts of the No Action Alternative and Proposed Project, as well as mitigation measures, if needed.

3.11.1 Regulatory Setting

Appendix C lists the regulations associated with this natural resources and energy supply.

3.11.2 Affected Environment

The Airport requires the use of consumable materials to maintain various airside facilities and services. Those materials may include asphalt, concrete, aggregate for sub-base materials, various metals associated with such maintenance, as well as fuel associated with the operation of aircraft and vehicles. Electrical power is necessary to keep the airfield operational and safe. Lighting within the Project Study Area consists of airfield navigational aids and runway and taxiway edge lighting. Austin Energy supplies the Airport with electricity.

3.11.3 Significance Threshold

FAA Order 1050.1F provides policy and procedures related to airport actions implemented under NEPA but does not establish a significance threshold for the use of natural resources and energy supply. The Order does identify a factor to consider when evaluating the context and intensity of potential environmental impacts related to natural resources and energy supply (see Exhibit 4-1 of FAA Order 1050.1F).[35] As indicated in this exhibit, the Proposed Project may result in a

[35] FAA. (2015). Order 1050.1F, Environmental Impacts: Policies and Procedures, July 2015.

significant impact if it could cause demand to exceed current or future supplies of a natural resource or an energy supply.

3.11.4 Methodology

This EA evaluates the potential effects of the Proposed Project related to the use of natural resources and energy supplies in terms of construction activity, aircraft operations, and building efficiency. Energy usage calculations are based on annual electricity consumption data for commercial building space provided by the U.S. Department of Energy.[36] In addition, the U.S. Department of Energy's *Commercial Building Energy Consumption Survey* was referenced for variances in the electricity demand of the Proposed Project and No Action Alternative. The following industry information related to sustainable design and sustainable practices was reviewed to determine whether mitigation measures would be necessary to reduce the potential demands on natural resources and energy supplies:

- Airport Cooperative Research Program Synthesis 10, *Airport Sustainability Practices*, and
- Sustainable Aviation Guidance Alliance Database.

3.11.5 Environmental Consequences

This section describes the potential impacts to natural resources and energy supply associated with implementation of the No Action Alternative and the Proposed Project.

3.11.5.1 No Action Alternative

Under the No Action Alternative, the Airport would not implement the Proposed Action. The Airport would continue to operate, perform maintenance, and serve the passengers, which would increase the demand on natural resources.

No facilities or lighting requiring electricity would be constructed under the No Action Alternative. However, electricity usage for the Airport would increase as a result of the forecast growth in aircraft operations and passenger enplanements. Current energy suppliers could accommodate the increased demand for electricity at the Airport.

Fuel demand at the Airport is based on several factors related to aircraft operations, including taxi time, taxi distance, and the fuel required for aircraft to reach various destinations. No new facilities would be constructed under the No Action

[36] U.S. Energy Information Agency. (2012). Commercial Buildings Energy Consumption Survey, Consumption & Efficiency, 2012 CBECS Survey Data. Retried January 2022, from U.S. Energy Information Agency: https://www.eia.gov/consumption/commercial/data/2003/index.php?view+consumption#c1a

Alternative. However, fuel consumption would increase over time as a result of forecast growth in aircraft operations and passenger enplanements at the Airport. Additionally, GSE fuel requirements would grow proportionally with forecast increases in aircraft operations. This growth is within the current capacity of the existing fuel suppliers.

The No Action Alternative would not construct any new facilities. Therefore, the No Action Alternative would not require the use of natural resources typically used during construction, such as asphalt, water, plastic, stone, metals, and wood, other than the materials necessary for general maintenance purposes.

3.11.5.2 Proposed Project

The Proposed Project would increase the demand for electricity by about 8 megawatts (MWs). Project components U-1 (new central utility plant), U-2 (new Austin Energy substation), and U-3 (new electrical lines) are included as part of the Proposed Project to ensure that there is adequate capacity for providing the needed electricity to operate the Proposed Project. As a result, the electricity demand of the Proposed Project would be accommodated by the construction and operation of these project components.

The Proposed Project is expected to increase the demand for diesel fuel for construction vehicles. However, any temporary increase in fuel demand is expected to be minimal and would not exceed existing and future fuel supplies.

In 2032, fuel consumption under the Proposed Project would be slightly greater than that of the No Action Alternative because of the slightly greater number of aircraft operations. The fuel demands of the Proposed Project would not exceed the availability of fuel in the region when compared to the No Action Alternative.

Construction of the Proposed Project would temporarily increase the use of natural resources at the Airport. These resources, which could include building components, aggregate, soils, sub-base materials, and oils, are not rare or in short supply, and the quantity required for the Proposed Project would not place an undue strain on supplies when compared to the No Action Alternative.

3.11.6 Mitigation Measures

The Proposed Project would not cause demand to exceed current or future supplies of natural resources or energy supplies. Because the Proposed Project would not exceed this factor identified in FAA Order 1050.1F, no mitigation measures are required. However, the City would incorporate energy efficiency and sustainability measures wherever possible to further reduce energy consumption as a result of the Proposed Project.

3.12 NOISE AND NOISE-COMPATIBLE LAND USE

This section describes the regulations, affected environment, significance threshold(s) pertaining to noise and noise-compatible land use, the methodologies used to determine potential noise effects, and identifies potential noise impacts of the No Action Alternative and Proposed Project, as well as mitigation measures, if needed.

3.12.1 Regulatory Setting

Appendix C lists the regulations associated with noise.

3.12.2 Affected Environment

Exhibit 3.12-1 shows the 65 – 75 dB DNL noise contours for the 2019 Existing Conditions in the General Study Area. **Exhibit 3.12-1** also shows land uses and individual noise sensitive locations such as schools and places of worship. The FAA's guidelines for land use compatibility presented in Appendix A of 14 CFR Part 150 state that all land uses are generally compatible with aircraft noise below 65 dB DNL. The 65 dB DNL noise contour for Runway 18R-36L extends into mostly vacant land to the north and south. The 65 dB DNL noise contour for Runway 18L-36R extends to the north and south into commercial, industrial, recreation, and public land uses.

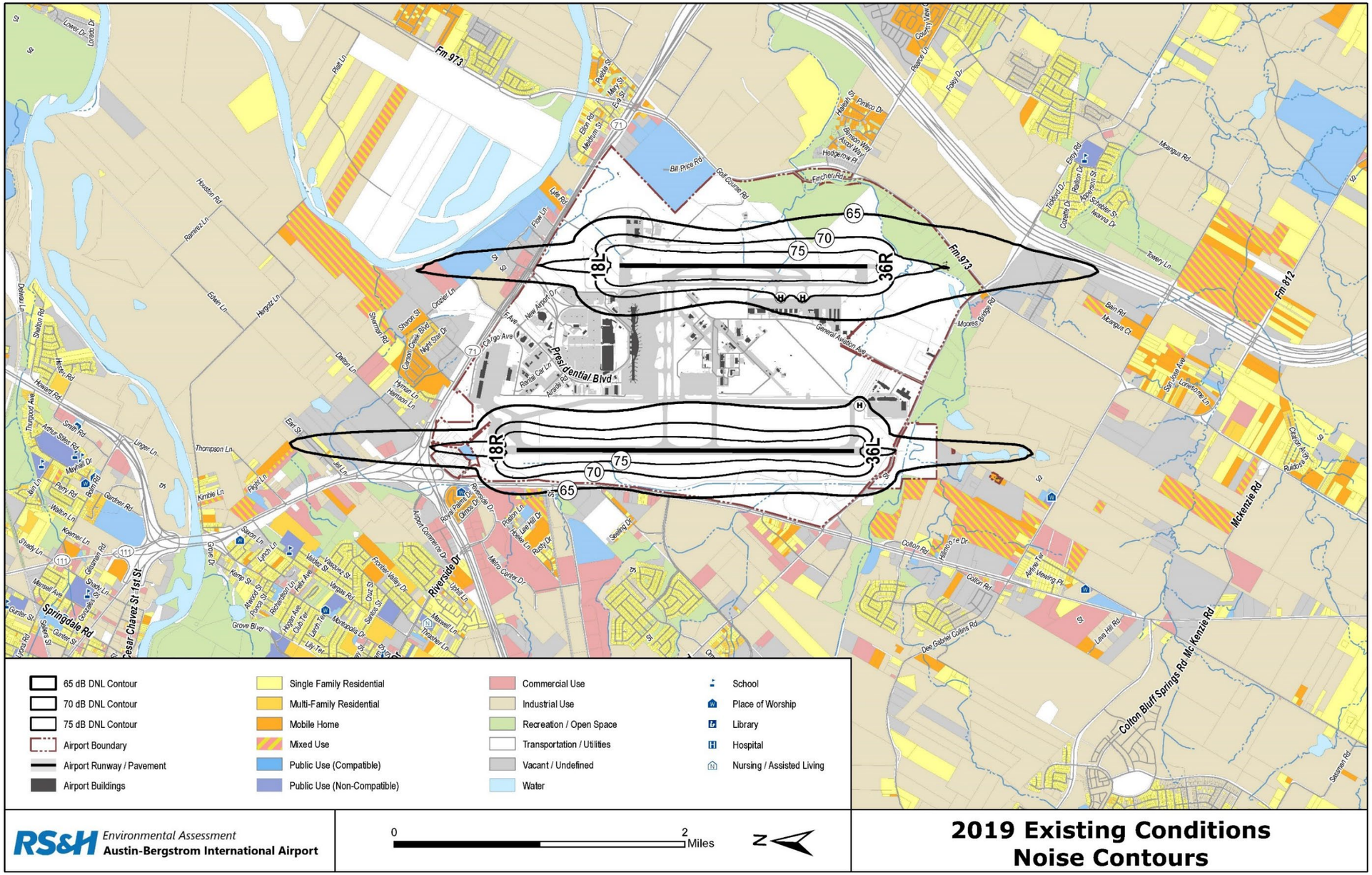
Table 3.12-1 provides the population exposure, housing unit count, and contour areas for the 2019 DNL noise contours. The 65+ dB DNL noise contour, which covers 2,655.73 acres, contains 30 residents and 7 housing units. In addition, no individual noise sensitive locations, such as schools or houses of worship are within the 2019 65+ dB DNL noise contour.

TABLE 3.12-1
2019 EXISTING CONDITIONS NOISE CONTOURS POPULATION, HOUSING, AND AREA

DNL (dB) Noise Contour	Population	Housing Units	Area (acres)
65 - 70	30	7	1,573.96
70 - 75	0	0	561.56
> 75	0	0	520.21
Total	30	7	2,655.73

Sources: HMMH, 2022; U.S. Census Bureau, 2020.Page Break

EXHIBIT 3.12-1
2019 EXISTING CONDITIONS NOISE CONTOURS



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3.12.3 Significance Threshold

FAA Order 1050.1F identifies the threshold of "significant impact" based on the yearly DNL and compatible land-use standards found at Table 1 in Appendix A of 14 CFR Part 150, *Airport Noise Compatibility Planning* (see **Table 3.12-2**). FAA Order 1050.1F, Exhibit 4-1 states that there is a significant noise impact with respect to aircraft noise if a location fulfills all three of the following conditions:

- Has an incompatible land use as identified in 14 CFR Part 150, Appendix A (see **Table 3.12-2**).
- Experiences a project-related noise level increase of 1.5 dB DNL or more.
- Is located within the 65 dB DNL noise contour upon implementation of the action.

For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB. The determination of significance must be obtained using noise contours and/or grid point analysis along with local land use information and general guidance contained in Appendix A of 14 CFR Part 150.

In addition to defining significant impacts, FAA Order 1050.1F includes additional reporting requirements, including:

- The location and number of noise sensitive uses at or above 65 dB DNL;
- The disclosure of potentially newly non-compatible land use regardless of whether there is a significant noise impact; and
- Maps reporting the number of residences or people residing at or above DNL 65 dB for at least the 65-, 70-, and 75-dB exposure levels.

FAA Order 1050.1F states, "Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within Section 4(f) properties (including, but not limited to, noise sensitive areas within national parks; national wildlife and waterfowl refuges; and historic sites, including traditional cultural properties) where the land use compatibility guidelines in 14 CFR Part 150 are not relevant to the value, significance, and enjoyment of the area in question." For example, the DNL 65 dB threshold does not adequately address the impacts of noise on visitors to areas within a national park or national wildlife and waterfowl refuge where other noise is very low and a quiet setting is a generally recognized purpose and attribute. Levels of changes for noise sensitive locations include:

TABLE 3.12-2
PART 150 NOISE / LAND USE COMPATIBILITY GUIDELINES

Land Use	Yearly Day-Night Average Sound Level, DNL, in Decibels (Key and notes on following page)						
		<65	65-70	70-75	75-80	80-85	>85
Residential Use							
Residential other than mobile homes and transient lodgings		Y	N(1)	N(1)	N	N	N
Mobile home park		Y	N	N	N	N	N
Transient lodgings		Y	N(1)	N(1)	N(1)	N	N
Public Use							
Schools		Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes		Y	25	30	N	N	N
Churches, auditoriums, and concert halls		Y	25	30	N	N	N
Governmental services		Y	Y	25	30	N	N
Transportation		Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking		Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use							
Offices, business and professional		Y	Y	25	30	N	N
Wholesale and retail--building materials, hardware and farm equipment		Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade--general		Y	Y	Y(2)	Y(3)	Y(4)	N
Utilities		Y	Y	Y(2)	Y(3)	Y(4)	N
Communication		Y	Y	25	30	N	N
Manufacturing and Production Use							
Manufacturing general		Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical		Y	Y	25	30	N	N
Agriculture (except livestock) and forestry		Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding		Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction		Y	Y	Y	Y	Y	Y
Recreational Use							
Outdoor sports arenas and spectator sports		Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters		Y	N	N	N	N	N
Nature exhibits and zoos		Y	Y	N	N	N	N
Amusements, parks, resorts and camps		Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation		Y	Y	25	30	N	N

Key SLUCM: Standard Land Use Coding Manual. Y (Yes): Land use and related structures compatible without restrictions. N (No): Land use and related structures are not compatible and should be prohibited. NLR: Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure. 25, 30, or 35: Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dBA must be incorporated into design and construction of structure.
Notes: The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses. (1)Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dBA and 30 dBA should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dBA, thus, the reduction requirements are often started as 5, 10, or 15 dBA over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems. (2)Measures to achieve NLR of 25 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low. (3)Measures to achieve NLR of 30 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low. (4)Measures to achieve NLR of 35 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low. (5)Land use compatible provided special sound reinforcement systems are installed. (6)Residential buildings require an NLR of 25. (7)Residential buildings require an NLR of 30 (8)Residential buildings not permitted.

Source: Title 14 CFR Part 150, Appendix A, Table 1

- Significant noise impact: DNL increase of 1.5 dB or more in areas of 65 dB DNL and higher
- Reportable changes:
  - DNL increase of 3 dB or more in areas between 60 and 65 dB DNL
  - DNL increase of 5 dB or more in areas between 45 and 60 dB DNL

3.12.4 Methodology

The potential noise effects associated with the Proposed Project were evaluated using the FAA's approved noise model, Aviation Environmental Design Tool (AEDT). AEDT uses airport geometry, descriptions of aircraft operations, and an internal database of noise and performance characteristics to compute the noise of individual flights. The software then adds the noise of individual flights together to compute the cumulative noise levels at a grid of points. These results can be reported at each point or presented as a set of contours of equal noise exposure. **Appendix D** discusses the inputs and methods used to specify the data used in the modeling and provides a detailed description of the processes used to create the model tracks and their use in noise modeling.

The analysis for this EA compared four future scenarios, the No Action Alternative and the Proposed Project in 2027 (opening year for the Proposed Project) and the No Action Alternative and the Proposed Project in 2032 (five years after opening year).

3.12.5 Environmental Consequences

This section describes the potential noise effects associated with the implementation of the No Action Alternative or the Proposed Project.

3.12.5.1 No Action Alternative

Under the 2027 No Action Alternative, the Airport would not implement the Proposed Action but would continue to operate and serve forecast aviation demands.

Exhibit 3.12-2 shows the 65+ DNL contours for the 2027 No Action Alternative, including individual noise sensitive locations such as schools and places of worship. The 65 dB DNL noise contour for Runway 18R-36L extends into mostly vacant land to the north and south. The 65 DNL noise contour for Runway 18L-36R extends to the north and south into commercial, industrial, recreation, and public land uses.

Table 3.12-3 provides the population exposure, housing unit count, and contour areas for the 2027 No Action Alternative. A total of 90 residents and 19 housing units would be within the 65+ dB DNL noise contours in 2027, which is an increase of 60 residents and 12 housing units compared to 2019 conditions. The total area of the 65+ DNL noise contours under the 2027 No Action Alternative is 3,083.85 acres, which is an increase of 428.12 acres. No individual noise sensitive locations such as schools or house of worship would be within the 65+ dB DNL noise contours for the 2027 No Action Alternative.

Under the 2032 No Action Alternative, the Airport would not implement the Proposed Action and would accommodate a portion of the forecast aviation demand.

Exhibit 3.12-3 shows the 65+ DNL contours for the 2032 No Action Alternative, including individual noise sensitive locations such as schools and places of worship. The 65 dB DNL noise contour for Runway 18R-36L extends into mostly vacant land to the north and south. The 65 DNL noise contour for Runway 18L-36R extends to the north and south into commercial, industrial, recreation, and public land uses.

EXHIBIT 3.12-2
2027 NO ACTION ALTERNATIVE NOISE CONTOURS

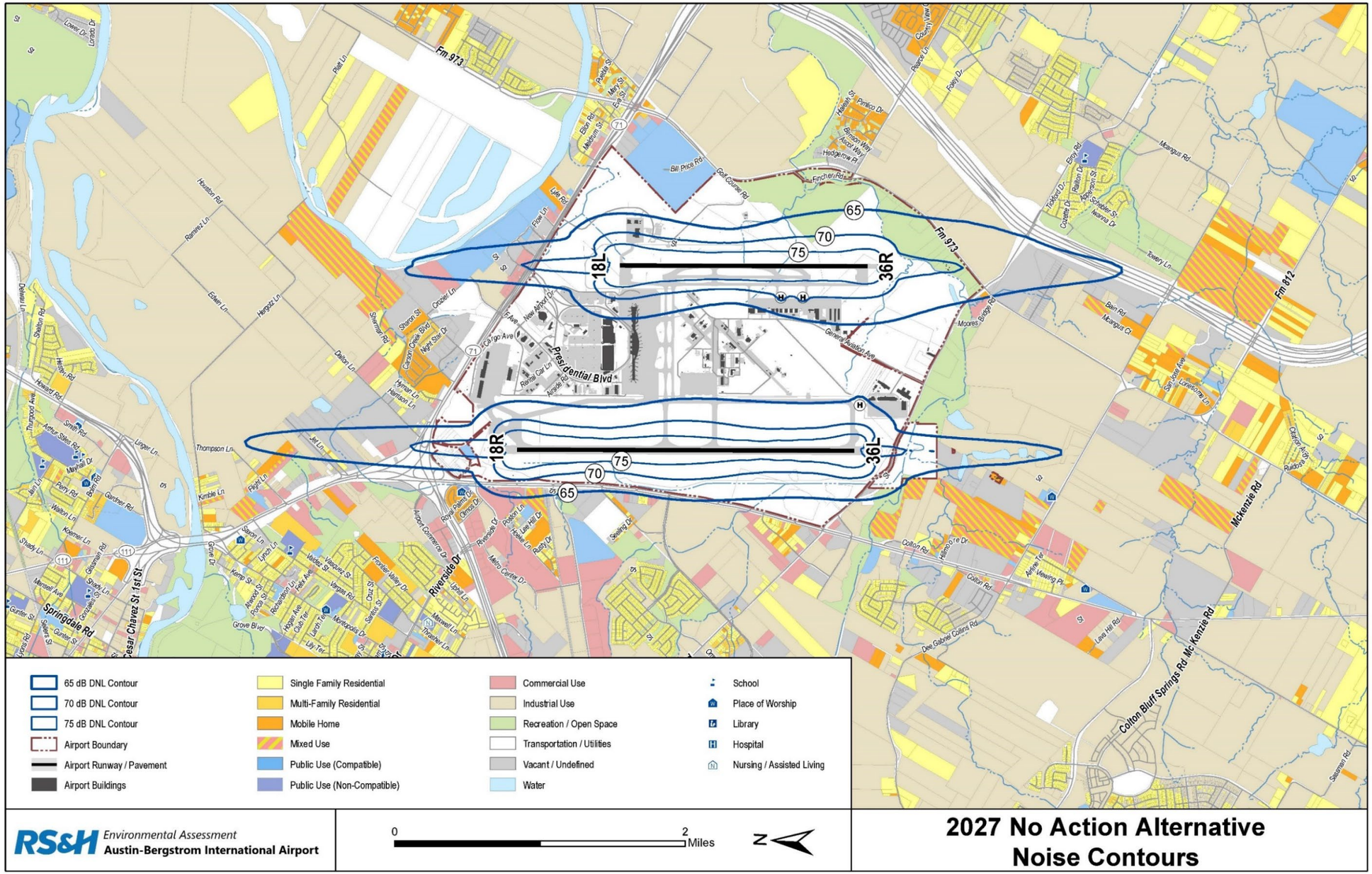


EXHIBIT 3.12-3
2032 NO ACTION ALTERNATIVE NOISE CONTOURS

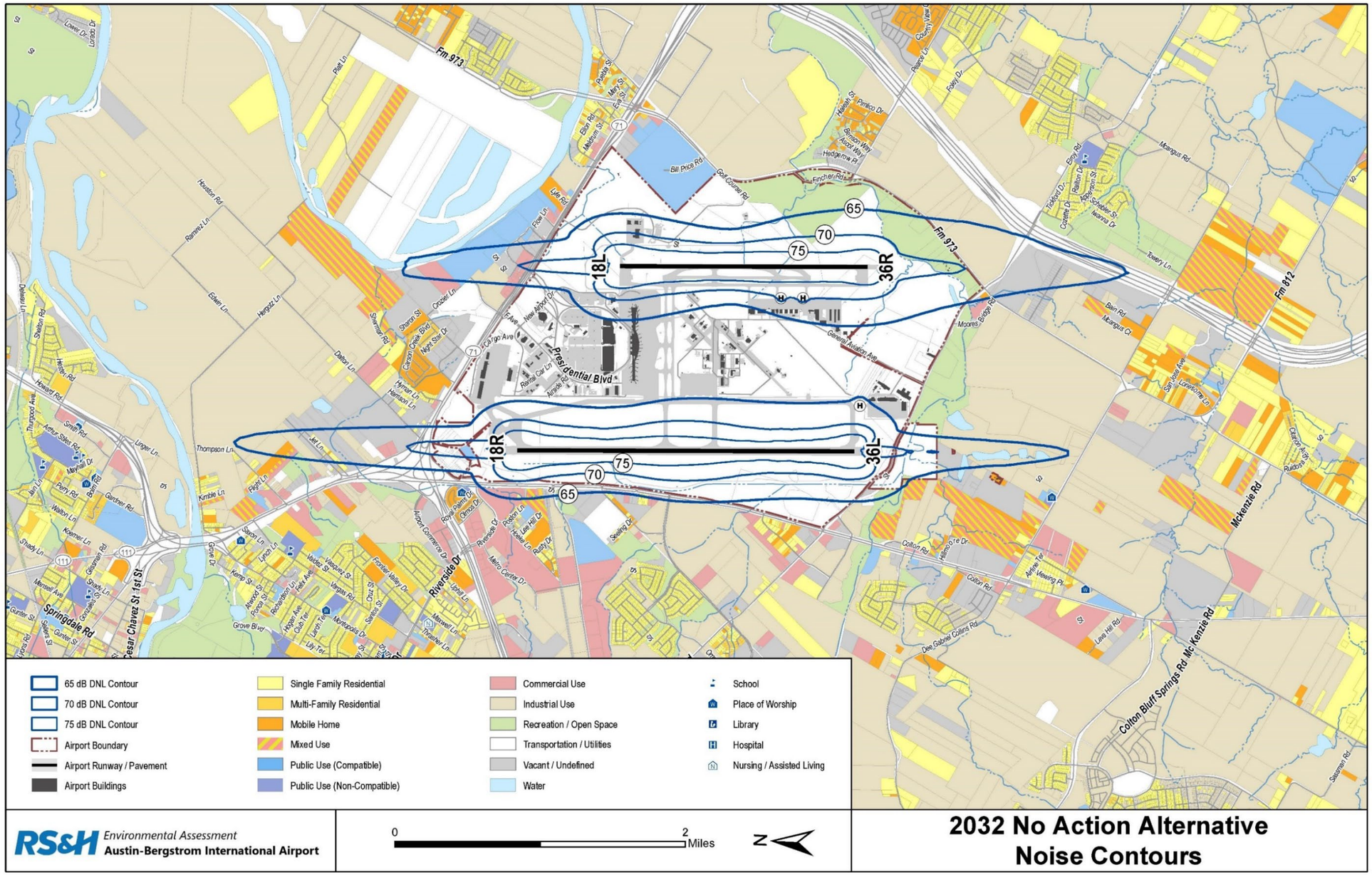


TABLE 3.12-3
2027 NO ACTION ALTERNATIVE NOISE CONTOURS POPULATION, HOUSING, AND AREA

DNL (dB) Noise Contour	Population	Housing Units	Area (acres)
65 - 70	90	19	1,886.23
70 - 75	0	0	654.33
> 75	0	0	543.29
Total	90	19	3,083.85

Sources: HMMH, 2022; U.S. Census Bureau, 2020.

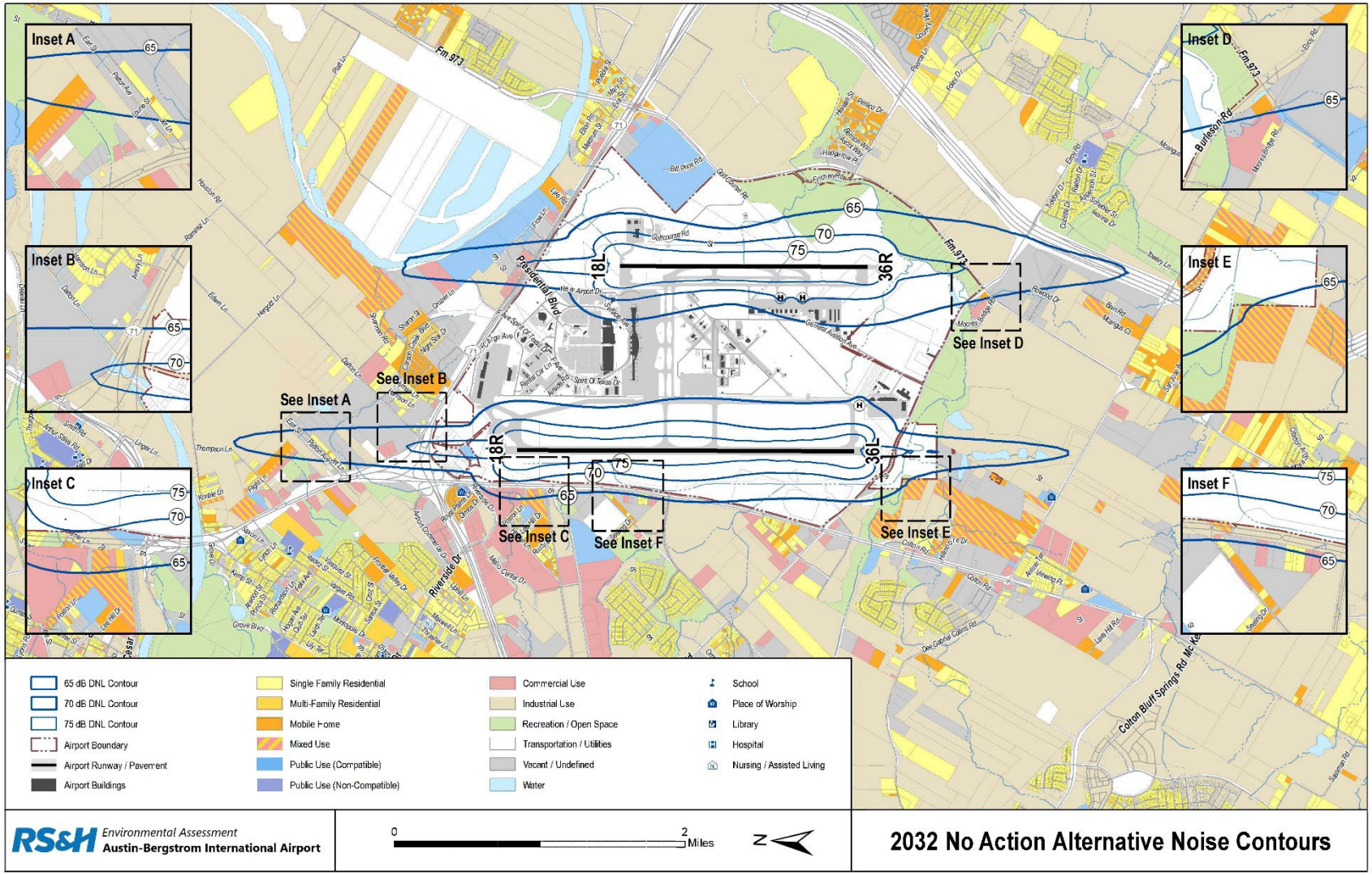
Table 3.12-4 provides the population exposure, housing unit count, and contour areas for the 2032 No Action Alternative. **Exhibit 3.12-4** shows the areas where residential land uses would be in the 65+ dB DNL noise contour under the No Action Alternative in 2032. A total of 100 residents and 21 housing units would be within the 65+ dB DNL noise contours in 2032, which is an increase of 10 residents and 2 housing units compared to the 2027 No Action Alternative. The total area of the 65+ DNL noise contours under the 2032 No Action Alternative is 3,162.81 acres, which is an increase of 78.96 acres compared to the 2027 No Action Alternative. No individual noise sensitive locations such as schools or house of worship would be within the 65+ dB DNL noise contours for the 2027 No Action Alternative.

TABLE 3.12-4
2032 NO ACTION ALTERNATIVE NOISE CONTOURS POPULATION, HOUSING, AND AREA

DNL (dB) Noise Contour	Population	Housing Units	Area (acres)
65 - 70	100	21	1,935.21
70 - 75	0	0	671.62
> 75	0	0	555.98
Total	100	21	3,162.81

Sources: HMMH, 2022; U.S. Census Bureau, 2020.

EXHIBIT 3.12-4
RESIDENTIAL LAND USES IN 65+ NOISE CONTOUR UNDER NO ACTION ALTERNATIVE IN 2032



3.12.5.1 Proposed Project

The year 2027 represents the opening year for the Proposed Project. Given that the Proposed Project would accommodate the same number of enplanements and aircraft operations as the No Action Alternative in 2027, the noise contours associated with the 2027 Proposed Project would be the same as those presented in **Exhibit 3.12-1** for the 2027 No Action Alternative. Similarly, the population exposure, housing unit count, and acreage associated with 65+ dB DNL noise contours for the 2027 Proposed Project would be the same as those presented in **Table 3.12-3** for the 2027 No Action Alternative. No individual noise sensitive locations such as schools or houses of worship are within the 65+ dB DNL noise contours for the 2027 Proposed Project.

The year 2032 represents five years after opening year for the Proposed Project. **Exhibit 3.12-5** shows the 2032 Proposed Project noise contours. The 65 dB DNL noise contour for Runway 18R-36L extends into mostly vacant land to the north and south. The 65 dB DNL noise contour for Runway 18L-36R extends to the north and south into commercial, industrial, recreation, and public land uses. No individual noise sensitive locations such as schools or houses of worship lie within the 65+ dB DNL noise contours for the 2032 Proposed Project.

Exhibit 3.12-6 shows the modeling results for the 2032 Proposed Project compared to the No Action Alternative. With the implementation of the 2032 Proposed Project, there are no locations that experience a significant (greater than 1.5 dB increase) noise impact. The analysis also shows less than reportable levels of change in DNL as a result of the 2032 Proposed Project compared to the No Action Alternative.

Table 3.12-5 provides the population exposure, housing unit count, and acreage associated with 65+ dB DNL noise contours for the 2032 Proposed Project. **Exhibit 3.12-7** shows the areas where residential land uses would be in the 65+ dB DNL noise contour under the Proposed Project in 2032. A total of 126 residents and 30 housing units would be within the 65+ dB DNL noise contours in 2032 as a result of the Proposed Project, which is an increase of 26 residents and 9 housing units compared to the 2032 No Action Alternative. The total area for the 2032 Proposed Project DNL noise contours is 3,434.57 acres, which is 271.76 acres greater than the area for the 2032 No Action Alternative DNL noise contours. As with the 2032 No Action Alternative, no individual noise sensitive locations such as schools or houses of worship lie within the 65+ dB DNL noise contours for the 2032 Proposed Project.

TABLE 3.12-5
2032 PROPOSED PROJECT NOISE CONTOURS POPULATION, HOUSING, AND AREA

DNL (dB) Noise Contour	2020 Population Census	Housing Units	Area (acres)
65 - 70	126	30	2,115.57
70 - 75	0	0	731.79
> 75	0	0	587.21
Total	126	30	3,434.57

Sources: HMMH, 2022; U.S. Census Bureau, 2020.

3.12.6 Mitigation Measures

The Proposed Project would not result in a DNL 1.5 dB increase over any noise sensitive sites; therefore, there would be no significant noise impact on the surrounding community and no mitigation is required. However, the City Department of Aviation would continue to evaluate aircraft noise in the Airport vicinity which could include pursuing the preparation of an update to its Noise Compatibility Plan in accordance with 14 CFR Part 150, if appropriate.

3.13 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

This section describes the regulations, affected environment, and significance threshold(s) pertaining to socioeconomics, surface traffic, environmental justice, and children's environmental health and safety risks. This section also describes methodologies used to determine potential effects and identifies the potential socioeconomic effects of the No Action Alternative and Proposed Project, as well as mitigation measures, if needed.

3.13.1 Socioeconomics

3.13.1.1 Regulatory Setting

Appendix C lists the regulations associated with socioeconomics.

3.13.1.2 Affected Environment

3.13.1.2.1 Population and Housing

The Project Study Area is within two census tracts: Census Tract 9800 and Census Tract 23.10 Block Group 1 (see **Exhibit 3.13-1**). The General Study area is made up of multiple Census Tract Block Groups: Census Tract 24.35 Block Group 2, Census Tract 24.31 Block Group 2, Census Tract 24.32 Block Group 1, Census Tract23.12 Block Group 3, Census Tract 23.12 Block Group 2, Census Tract 23.10

EXHIBIT 3.12-5
2032 PROPOSED PROJECT NOISE CONTOURS

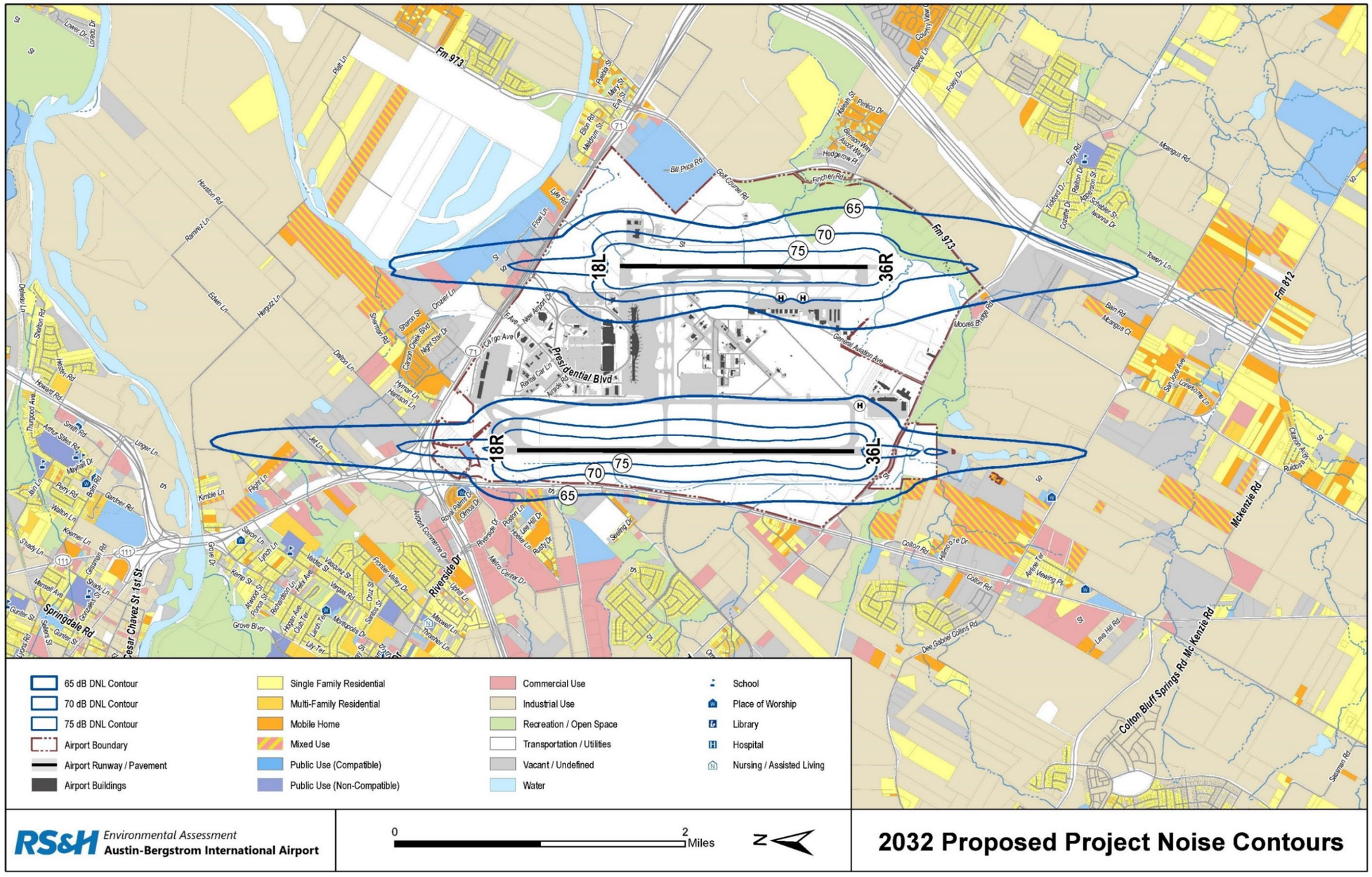


EXHIBIT 3.12-6
2032 PROPOSED PROJECT NOISE CONTOURS COMPARED TO 2032 NO ACTION ALTERNATIVE NOISE CONTOURS

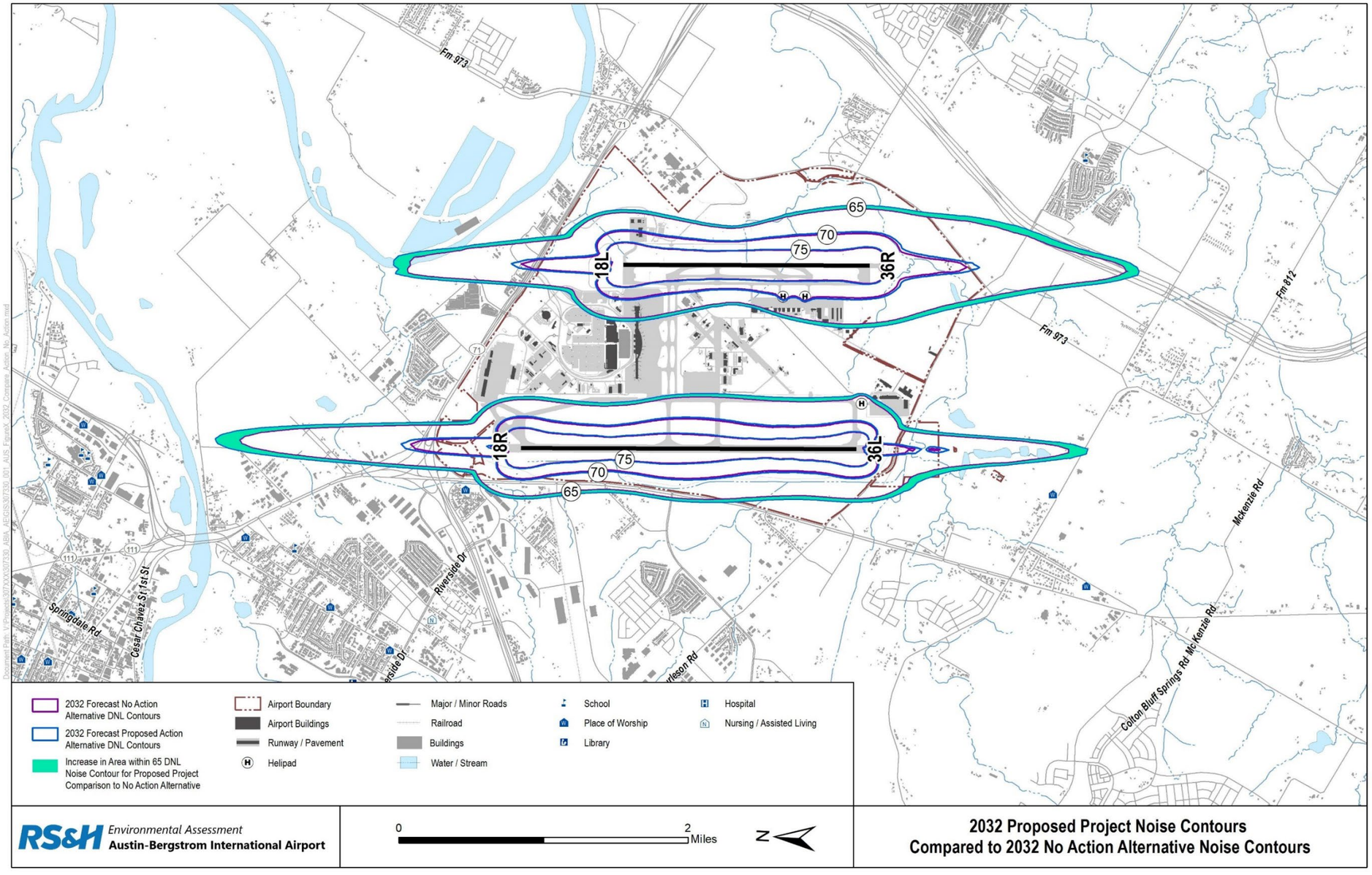


EXHIBIT 3.12-7
RESIDENTIAL LAND USES IN 65+ NOISE CONTOUR UNDER PROPOSED PROJECT IN 2032

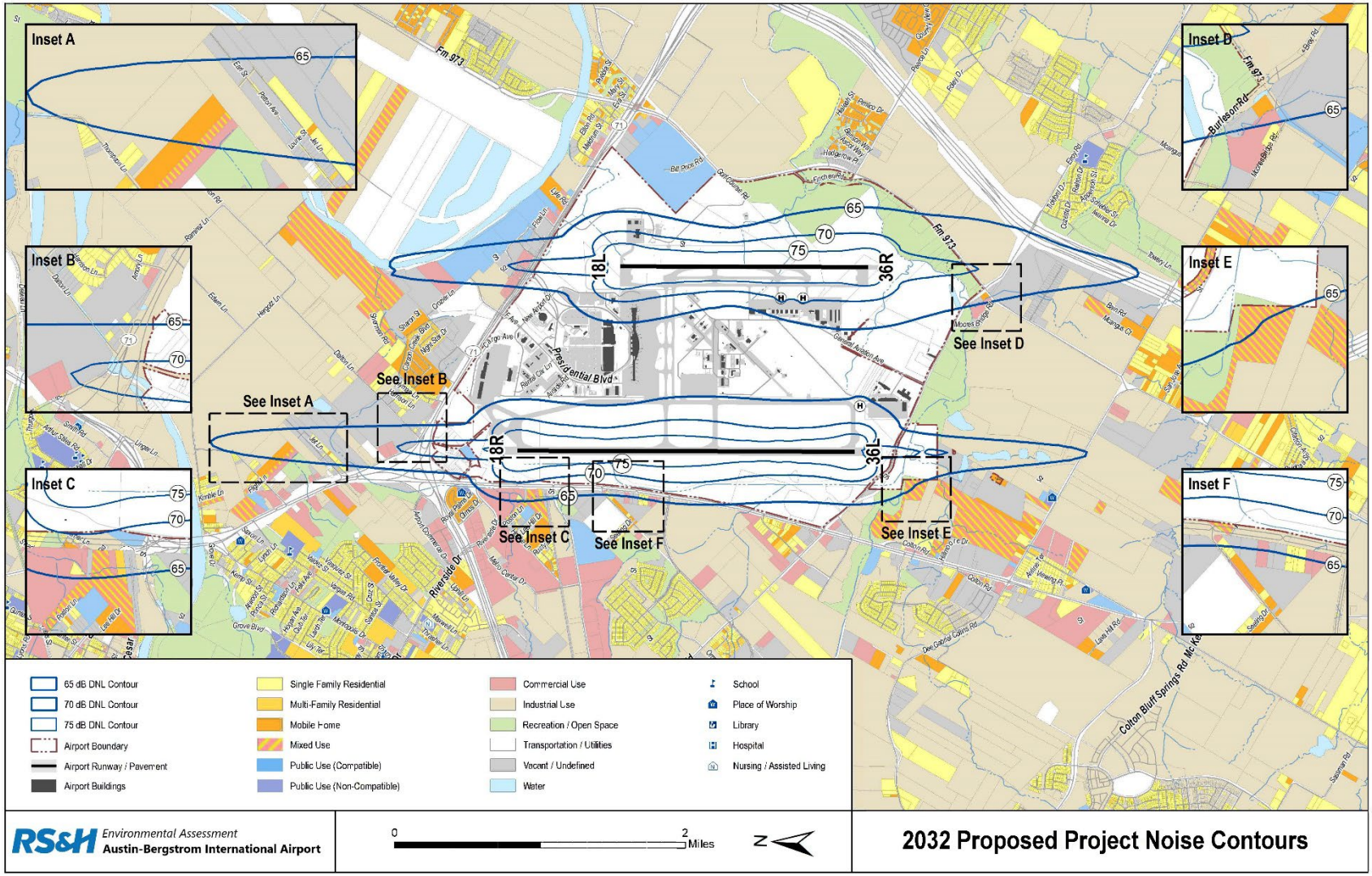
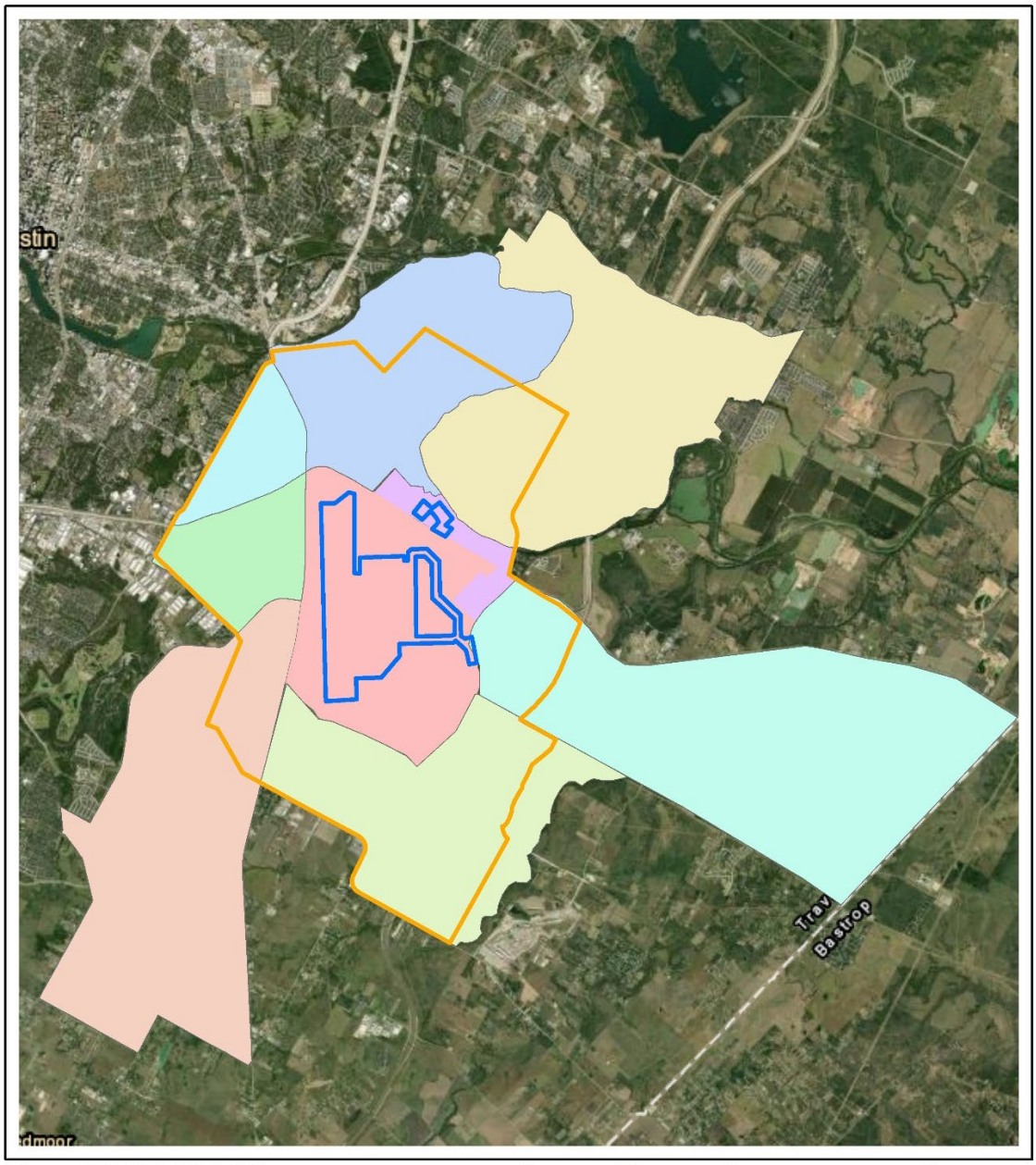


EXHIBIT 3.13-1
CENSUS TRACTS IN PROJECT STUDY AREA AND GENERAL STUDY AREA



Sources: ESRI, 2021; RS&H, 2021.

0 1.5 3 6 Miles

N

Legend

- General Study Area
- Detailed Study Area
- Census Tract 24.35 Block Group 2
- Census Tract 24.31 Block Group 2
- Census Tract 23.12 Block Group 2 and 3
- Census Tract 23.10 Block Group 2
- Census Tract 22.07 Block Group 2
- Census Tract 24.33 Block Group 1 and 2
- Census Tract 9800
- Census Tract 23.10 Blk Group 1
- Census Tract 24.32 Block Group 1

RS&H

Census Tracts

Block Group 2, Census Tract 22.07 Block Group 2, Census Tract 24.33 Block Group 2, Census Tract 24.33 Block Group 1.[37]

Table 3.13-1 shows the population and housing data for the census tracts that are within the Project Study Area and the General Study Area[38]. Data from these census tracts, the City of Austin, and Travis County were included for comparison purposes. The Project Study Area does not contain a high-density residential area. The General Study Area does contain some high-density residential areas located to the southeast and southwest of the Airport. A total of about 21,000 people live in these census tracts, which is less than two percent of the total population of Travis County. According to the US Census Bureau, 95 percent of the housing within these census tracts are occupied.[39]

TABLE 3.13-1
POPULATION AND HOUSING CHARACTERISTICS IN PROJECT STUDY AREA AND GENERAL STUDY AREA

Population and Housing Characteristics	Census Tracts within the Project Study Area	Census Tracts within the General Study Area	Travis County
Total Population	2,890	18,786	1,226,805
Total Households	833	12,652	472,361
Average Persons per Household	3.47	3.92	2.54
Percent Housing Occupied	100%	95%	100%

Source: U.S. Census Bureau, 2019; RS&H, 2021.

3.13.1.2.2 Employment

Table 3.13-2 shows that the Project Study Area has an unemployment rate of 1.2 percent and the General Study Area has an unemployment rate of 3.4 percent. This is compared to a 2.8 percent unemployment rate in Travis County and a 3.3 percent unemployment rate in the State of Texas.[40]

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[37] It should be noted that not all block groups within a census tract were included in the analysis. Only if all or a portion of a block group was within the General Study Area was it then included in the analysis. It should also be noted that census tract and block group boundaries are determined by the U.S. Census Bureau and cannot be changed to exactly fit the General Study Area. Therefore, analysis presented in this EA includes the two census tracts in the Project Study Area and the nine census tracts in the General Study Area.

[38] U.S. Census Bureau. 2019 ACS 5-Year Estimates, Population and Households. Retrieved October 2021, From: https://data.census.gov/cedsci/map?q=%20households&g=0400000US48_0500000US48453_1400000US48453980000_1500000US484530023101,484539800001&tid=ACSDP5Y2019.DP02&mode=thematic&layer=VT_2019_150_00_PY_D1&cid=DP02_0001E

[39] U.S. Census Bureau. 2019 ACS 5-Year Estimates, Population and Households. Retrieved October 2021, From: https://data.census.gov/cedsci/table?q=housing&g=1400000US48453002207,48453002310,48453002312,48453002431,48453002432,48453002433,48453980000_1500000US484530022072,484530023101,484530023102,484530023122,484530023123,484530023191,484530024312,484530024321,484530024331,484530024332,484530024352,484539800001&tid=ACSST5Y2019.S1101

[40] U.S. Census Bureau. 2019 ACS 5-Year Estimates Employment Status. Retrieved October 2021. From: https://data.census.gov/cedsci/table?q=unemployment&g=0400000US48_0500000US48453_1400000US48453002310,48453980000_1500000US484530023101,484539800001&tid=ACSDP5Y2019.DP03

TABLE 3.13-2
UNEMPLOYMENT RATE IN PROJECT STUDY AREA, GENERAL STUDY AREA, TRAVIS COUNTY, AND STATE OF TEXAS

	Project Study Area	General Study Area	Travis County	Texas
Percent Unemployed	1.2%	3.4%	2.8%	3.3%

Source: U.S. Census Bureau, 2019; RS&H, 2021.

3.13.1.3 Significance Threshold

There is no formal significance threshold provided by FAA Order 1050.1F regarding socioeconomic impacts. However, the consequences of the Proposed Project can be evaluated using the following actors, if the Proposed Project would:

- Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing a project in an undeveloped area;
- Cause extensive relocation when sufficient replacement housing is unavailable;
- Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities; or
- Produce a substantial change in the community tax base.

3.13.1.4 Methodology

This section examines consequences of the No Action Alternative and the Proposed Project to move people from their homes in the Project Study Area, move businesses in the Project Study Area, or create a notable change in employment in the Project Study Area.

3.13.1.5 Environmental Consequences

This section describes the potential impact on socioeconomics associated with implementation of the No Action Alternative and the Proposed Project.

3.13.1.5.1 No Action Alternative

Under the No Action Alternative, the City would not implement the Proposed Project. The City would continue to operate the Airport, perform maintenance and serve forecast aviation demands.

3.13.1.5.1.1 Population and Housing

Under the No Action Alternative, no development would occur. Therefore, no impacts to population or housing would occur.

3.13.1.5.1.2 Employment

Under the No Action Alternative, no development would occur. No temporary construction-related employment opportunities would be created as a result of the No Action Alternative. However, employment could be increased at the Airport commensurate with the increase in passenger enplanements. Therefore, any change in employment opportunities within the Project Study Area would be beneficial to the employment community.

3.13.1.5.2 Proposed Project

Under the Proposed Project, the City would construct and operate the Proposed Project.

3.13.1.5.2.1 Population and Housing

The Proposed Project would not relocate residents, housing units, or businesses within the General Study Area. The Proposed Project would create a temporary increase in construction-related employment and would create a permanent increase in employment to serve the increase in passengers at the Airport. The demand for housing posed by both temporary construction-related employment and permanent employment could be accommodated by existing available or projected housing units in the General Study Area and City of Austin. These employment opportunity increases are minimal and would likely be filled by existing residents in the greater Austin metropolitan area. As a result, no change in population would occur as a result of the Proposed Project compared to the No Action Alternative.

3.13.1.5.2.2 Employment

The Proposed Project would positively affect employment by creating a temporary demand for construction employment and a permanent demand to serve the increase in passengers at the Airport. Both temporary and permanent employment would likely be filled by existing residents in the greater Austin metropolitan area.

3.13.1.6 Mitigation Measures

The Proposed Project would not result in significant impacts to socioeconomics. Therefore, no mitigation measures are proposed.

3.13.2 Surface Traffic

3.13.2.1 Regulatory Setting

Appendix C lists the regulations associated with surface traffic.

3.13.2.2 Affected Environment

State Highway (SH) 71 is a principal east-west arterial as designated by the Texas Department of Transportation (TxDOT) on the north side of the Airport. SH 71 eastbound and westbound frontage roads each have a signalized intersection with Presidential Boulevard, which is the primary roadway providing access to the Barbara Jordan Terminal (BJT) at AUS. Spirit of Texas Drive also provides connections from SH 71 to the cell phone lot, cargo facilities, surface parking lots, and rental car facilities, as well as provides an indirect route to the BJT.

For purposes of this traffic analysis, the following intersections were studied:

- SH 71 Westbound Frontage Road (WBFR) and Spirit of Texas Drive
- SH 71 Eastbound Frontage Road (EBFR) and Spirit of Texas Drive
- SH 71 Westbound Frontage Road (WBFR) and Presidential Boulevard
- SH 71 Eastbound Frontage Road (EBFR) and Presidential Boulevard
- Burleson Road and Emma Browning Avenue

Table 3.13-3 presents the 2019 measures of effectiveness for these five intersections.

3.13.2.1 Significance Threshold

There is no formal significance threshold provided by FAA Order 1050.1F regarding socioeconomic impacts. However, the consequences of the Proposed Project can be evaluated using the following actors, if the Proposed Project would:

- Disrupt local traffic patterns and substantially reduce the levels of service of roads service an airport and its surrounding communities.

TABLE 3.13-3
EXISTING (2019) MEASURES OF EFFECTIVENESS

	Midday LOS (Delay)	Afternoon LOS (Delay)
SH 71 WBFR and Spirit of Texas Drive	- (-)	- (-)
SH 71 EBFR and Spirit of Texas Drive	- (-)	- (-)
SH 71 WBFR and Presidential Boulevard	D (46.7)	F (87.2)
SH 71 EBFR & Presidential Boulevard	F (185.5)	F (171.8)
Burleson Road and Emma Browning Avenue	E (72.0)	A (6.6)

Source: *Synchro 11* Analysis Results

3.13.2.2 Methodology

Traffic volumes for future years were developed using FAA Terminal Area Forecast (TAF) data. Traffic counts were completed in 2017 for the intersection of Burleson Road and Emma Browning Avenue, as part of the AUS Master Plan effort, and in 2019 for the intersections of the SH 71 eastbound and westbound frontage roads with both Spirit of Texas Drive and Presidential Boulevard. Traffic volume data was increased using two scenarios dependent on whether a traffic movement was determined to be airport-related or background traffic related. For airport-related traffic, it was determined that traffic would grow at a similar rate as that of the TAF. Thus, growth rates for traffic movements of airport-related traffic were based on a comparison of existing AUS passenger data with 2019 collected traffic volume data. Growth rates for the remaining background traffic related movements were based on a comparison of existing background traffic. For the intersection of Burleson Road and Emma Browning Avenue an additional step was required to normalize traffic counts from 2017 to 2019. In 2017, the intersection was serving as a construction access site for multiple projects within AUS. Due to the unique operations of the south terminal at AUS, traffic was not grown using passenger data from 2017 to 2019. Instead, the background traffic factor was used to bring the traffic volumes to 2019 which is the base year for the study. Once all intersections were using 2019 data, the methodology for developing traffic growth was followed. The applicable growth factors were then applied to future year TAF data to develop traffic volumes at the study intersections.

Weekday peak period traffic turning movement counts were collected at the study intersections on typical weekdays during December 2019. These counts can be found in **Appendix H**. The data collected identified two peak periods – one at midday (11:30am – 12:30pm) and one in the afternoon (2:30pm – 3:30pm).

The future 2027 and 2032 scenarios included the following changes to existing SH 71 and Spirit of Texas Drive intersection.

- Signalization of intersection
- Bridge bypass for westbound through traffic
- Ramp modifications

The No Action Alternative included the continued use of the south terminal in 2027 and 2032. However, the Proposed Project assumed that the south terminal would be closed and all passengers would use the BJT and Concourse B.

Most traffic traveling to and from the Airport travels east/west on the SH 71 corridor. The traffic volume data indicates that the airport-related traffic would continue to use the existing traffic patterns in the regional study area, except for

some changes based on the SH 71 TxDOT project mentioned above. Because of the SH 71 eastbound bypass, Spirit of Texas Drive would see less thru traffic; however, trips accessing other non-airport land uses from Spirit of Texas would be unaffected by the TxDOT improvements. No changes would be made to traffic patterns at Presidential Boulevard since the TxDOT improvements would not affect the operation of this intersection.

All future traffic analyses was conducted using Synchro. The detailed Synchro reports are presented in **Appendix H**.

3.13.2.3 Environmental Consequences

This section describes the potential effects to surface traffic associated with implementation of the Proposed Project compared to the No Action Alternative.

3.13.2.3.1 No Action Alternative

Tables 3.13-4 and **3.13-5** presents the measures of effectiveness for 2027 and 2032, respectively. Three intersections would operate at Level of Service (LOS) F during the midday peak hour in 2027 (SH 71 WBFR and Presidential Boulevard, SH 71 EBFR and Presidential Boulevard, and Burleson Road and Emma Browning Avenue). For the afternoon peak hour in 2027, three intersections would operate at LOS F (SH 71 WBFR and Spirit of Texas Drive, SH 71 WBFR and Presidential Boulevard, and SH 71 EBFR and Presidential Boulevard).

TABLE 3.13-4
2027 MEASURES OF EFFECTIVENESS

	No Action Alternative Midday LOS (Delay)	Proposed Project Midday LOS (Delay)	No Action Alternative Afternoon LOS (Delay)	Proposed Project Afternoon LOS (Delay)
SH 71 WBFR and Spirit of Texas Drive	C (31.1)	C (31.8)	F (122.2)	F (122.7)
SH 71 EBFR and Spirit of Texas Drive	B (15.3)	B (15.7)	C (20.8)	C (20.6)
SH 71 WBFR and Presidential Boulevard	F (194.7)	F (205.0)	F (243.0)	F (250.7)
SH 71 EBFR and Presidential Boulevard	F (328.6)	F (339.5)	F (308.0)	F (323.9)
Burleson Road and Emma Browning Avenue	F (778.2)	F (306.5)	E (70.0)	E (58.8)

Source: *Synchro 11* Analysis Results

TABLE 3.13-5
2032 MEASURES OF EFFECTIVENESS

	No Action Alternative Midday LOS (Delay)	Proposed Project Midday LOS (Delay)	No Action Alternative Afternoon LOS (Delay)	Proposed Project Afternoon LOS (Delay)
SH 71 WBFR and Spirit of Texas Drive	E (55.7)	E (68.4)	F (465.0)	F (502.3)
SH 71 EBFR and Spirit of Texas Drive	B (18.6)	C (20.3)	C (23.3)	C (25.3)
SH 71 WBFR and Presidential Boulevard	F (483.8)	F (517.8)	F (506.8)	F (550.4)
SH 71 EBFR and Presidential Boulevard	F (478.4)	F (540.3)	F (493.6)	F (572.2)
Burleson Road and Emma Browning Avenue	F (812.7)	F (502.8)	F (408.7)	F (387.5)

Source: *Synchro 11* Analysis Results

Three intersections would operate at Level of Service (LOS) F during the midday peak hour in 2032 (SH 71 WBFR and Presidential Boulevard, SH 71 EBFR and Presidential Boulevard, and Burleson Road and Emma Browning Avenue). For the afternoon peak hour in 2032, four intersections would operate at LOS F (SH 71 WBFR and Spirit of Texas Drive, SH 71 WBFR and Presidential Boulevard, SH 71 EBFR and Presidential Boulevard, and Burleson Road and Emma Browning Avenue).

3.13.2.3.2 Proposed Project

In both 2027 and 2032, the Proposed Project would result in a slight degradation of delay compared to the No Action Alternative at the SH 71 WBFR and Presidential Boulevard intersection and the SH 71 EBFR and Presidential Boulevard intersection for both the midday and the afternoon peak hours. The SR 71 WBFR and Spirit of Texas Drive intersection would experience a slight degradation of delay under the Proposed Project compared to the No Action Alternative in the afternoon peak hour in both 2027 and 2032. The Burleson Road and Emma Browning Avenue intersection would be significant improved under the Proposed Project compared to the No Action Alternative in both the midday and afternoon peak hours in both 2027 and 2032.

3.13.2.4 Mitigation Measures

The FAA has not established any significance thresholds for surface traffic impacts. As a result, no significant impacts would occur under the Proposed Project compared to the No Action Alternative. However, it is envisioned that surface traffic would improve based on the Airport working with the City of Austin and TxDOT to identify future roadway and/or signalization improvements at the SH 71

intersections with Spirit of Texas Drive and Presidential Boulevard and the provision of light rail to the Airport, which was approved by City of Austin voters and is currently undergoing environmental evaluation.

3.13.3 Environmental Justice

3.13.3.1 Regulatory Setting

Appendix C lists the regulations associated with environmental justice.

3.13.3.2 Affected Environment

Table 3.13-6 shows the total minority presence[41] and the population living in poverty[42] [43] in the Project Study Area, the General Study Area, the City of Austin, and Travis County, based on the U.S. Census Bureau 2012-2016 American Community Survey 5-Year Estimates. The General Study Area, City of Austin, and Travis County are predominantly white with the highest minority population, 51 percent, located in the two census tracts that are within the Project Study Area. **Table 3.13-6** also shows that the Project Study Area has the highest percent of the population living below the poverty line (36.3 percent) when compared to the General Study Area (25.7 percent), City of Austin (13.2 percent) and Travis County (10.2 percent).

TABLE 3.13-6
ENVIRONMENTAL JUSTICE POPULATIONS IN PROJECT STUDY AREA, GENERAL STUDY AREA, CITY OF AUSTIN, AND TRAVIS COUNTY

Environmental Justice Characteristics	Project Study Area	General Study Area	City of Austin	Travis County
Percent Minority	51%	43%	24%	24%
Percent Living Below Poverty Line	36.3%	25.7%	13.2%	10.2%

Source: U.S. Census Bureau, 2018; RS&H, 2021.

[41] U.S. Census Bureau. 2019: ACS 5-Year Estimates, Race. Retrieved October 2021. From: https://data.census.gov/cedsci/table?q=race&g=0400000US48_0500000US48453_1400000US48453002310,48453980000_1500000US484530023101,484539800001_312M500US124204805000&tid=ACSDT5Y2019.B02001 and https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&g=1400000US48453002433%241500000_1500000US484530022072,484530023102,484530023122,484530023123,484530024312,484530024321,484530024352,484539800001&d=ACS%205-Year%20Estimates%20Detailed%20Tables&tid=ACSDT5Y2019.B02001

[42] U.S. Census Bureau. 2019: ACS 5-Year Estimates, Poverty. Retrieved October 2021. From: https://data.census.gov/cedsci/table?q=poverty&g=0400000US48_0500000US48453_1400000US48453002310,48453980000_1500000US484530023101,484539800001_312M500US124204805000&tid=ACSST5Y2019.S1701 and https://data.census.gov/cedsci/table?q=poverty&g=1400000US48453002433%241500000_1500000US484530022072,484530023102,484530023122,484530023123,484530024312,484530024321,484530024352,484539800001&d=ACS%205-Year%20Estimates%20Detailed%20Tables

[43] U.S. Census Bureau. 2019. ArcGIS Mapper. Low income Census Tracts. From: https://www.arcgis.com/home/item.html?id=92e085b0953348a2857d3d3dac930337

3.13.3.3 Significance Threshold

FAA Order 1050.1F provides guidance for the preparation of environmental justice analysis. Although the FAA does not provide a significance threshold for environmental justice, factors that indicate a significant impact may occur if the action would have the potential to lead to a disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations due to:

- Significant impacts in other environmental impact categories; and
- 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.

Disproportionately high and adverse human health or environmental effect on minority and low-income populations means an adverse effect that:

- Is predominately borne by a minority population and/or a low-income population; or
- Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

3.13.3.4 Methodology

Based on a review of the direct and indirect effects and the population characteristics of the area around the Airport, the resource categories were analyzed to determine if environmental justice populations would endure a disproportionately high and adverse human health and environmental effect of significant impacts. For purposes of assessing potential environmental justice impacts related to significant impacts, the following criteria were used to identify census block groups where minority and low-income population will be counted[44]:

- Census tracts that have a population of 50 percent or more exceeding the poverty guideline
- Census tracts that have a population of 50 percent or more exceeding the minority guideline

[44] U.S. EPA. (2016 June). *Technical Guidance for Assessing Environmental Justice in Regulatory Analysis*.

3.13.3.5 Environmental Consequences

This section describes the potential impact on environmental justice populations associated with implementation of the No Action Alternative and the Proposed Project.

3.13.3.5.1 No Action Alternative

Under the No Action Alternative, the City would not implement the Proposed Project. The City would continue to operate the Airport, perform maintenance, and serve forecast aviation demands. Because no development would occur, no impacts to environmental justice populations would occur.

3.13.3.5.2 Proposed Project

The Proposed Project would not result in the acquisition of land, relocation of residences or businesses, involve off-airport construction, or cause significant environmental impacts that would affect minority and/or low-income populations. Because no significant impacts would occur as a result of the Proposed Project compared to the No Action Alternative, there are no disproportionately high and adverse effects to environmental justice populations.

3.13.3.6 Mitigation Measures

The Proposed Project would not result in significant environmental justice impacts. No mitigation measures are proposed.

3.13.4 Children's Environmental Health and Safety Risks

3.13.4.1 Regulatory Setting

Appendix C lists the regulations associated with children's environmental health and safety risks.

3.13.4.2 Affected Environment

Areas of particular concern for children's environmental health risks and safety include schools, day cares, children's health clinics, and child friendly recreational facilities. There are two schools within the General Study Area: Allison Elementary School and Popham Elementary School. Additionally, Smith Elementary School is located about 0.5 miles west of the General Study Area, and Del Valle Elementary, Middle, and High Schools is located about 1.5 miles northeast of the General Study Area.

There are two day care facilities within the General Study Area, KinderCare at Bergstrom Tech and Extend-A-Care for Kids (at Popham Elementary School).

Additionally, there are five nearby day care facilities; Extend-A-Care for Kids, located 1.5 miles northwest of the General Study Area, Little Sprouts DayCare is located about 2.5 miles northeast of the General Study Area, Extend-A-Care for Kids (at Del Valle Middle School) and Child Inc./ Del Valle Child Development Center (at Del Valle High School) both located about 0.5 miles east of the General Study Area, and Seek & Say Daycare located about 3 miles north of the General Study Area.

There are three children's health clinics in the General Study Area: CommUnity Care - Del Valle Health Center, CommUnity Care - Southeast Health & Wellness Center & Walk in Clinic, and Megan Jane Grey, MD Pediatrics Practice. Additionally, Carousel Pediatrics-Riverside facility is located 1.75 miles northwest of the General Study Area.

There are six child friendly recreational facilities within the General Study Area: Montopolis Neighborhood Park, Old Moore's Crossing park, Colorado Crossing Park, Richard Moya Park, Stoney Ridge Neighborhood Park, and Hornsby Bend Bird Observatory Park.

3.13.4.3 Significance Threshold

There is no formal significance threshold provide by FAA Order 1050.1F regarding children's environmental health and safety risks. However, the consequences of the Proposed Project can be evaluated based on the potential creation of disproportionate environmental risks to children.

3.13.4.4 Methodology

This section examines consequences of the No Action Alternative and the Proposed Project, including potential to generate disproportionate environmental risks to the health or safety of children.

3.13.4.5 Environmental Consequences

This section describes the potential impact regarding children's environmental health and safety risks associated with implementation of the No Action Alternative and the Proposed Project.

3.13.4.5.1 No Action Alternative

Under the No Action Alternative, the City would not implement the Proposed Project. The City would continue to operate the Airport, perform maintenance, and serve forecast aviation demands. Because no development would occur, no impacts to children's environmental health and safety risks would occur.

3.13.4.5.2 Proposed Project

The Proposed Project would not result in the relocation, acquisition, or alteration of schools, residences, daycares, parks, or any other establishments associated with children or childcare. Construction of the Proposed Project would be temporary and would observe regulations regarding use, transportation, and disposal of hazardous waste and materials. Construction noise at the nearby schools would not affect children or disrupt learning activities because the closest school is far enough away that the noise level would be at or below 60 dB, which is considered compatible with educational land uses.

None of the locations where children are likely to congregate within the General Study Area would have a significant noise impact. Therefore, no disproportionate effect on children's environmental health and safety risks would occur. Therefore, the Proposed Project would not adversely affect children's environmental health and safety risks when compared to the No Action Alternative.

3.13.4.6 Mitigation Measures

The Proposed Project would not result in significant impacts to children's environmental health and safety risks. No mitigation measures are proposed.

3.14 WATER RESOURCES

This section describes the regulations, affected environment, significance threshold(s) pertaining to water resources, including wetlands, floodplains, surface water, and groundwater. This section also describes methodologies used to determine potential effects and identifies the potential water resource impacts of the No Action Alternative and Proposed Project, as well as mitigation measures, if needed.

3.14.1 Wetlands

This section describes regulations, affected environment, significance threshold(s), and methodologies used to determine potential effects, and identifies the impacts to wetlands from the Proposed Project and the No Action Alternative.

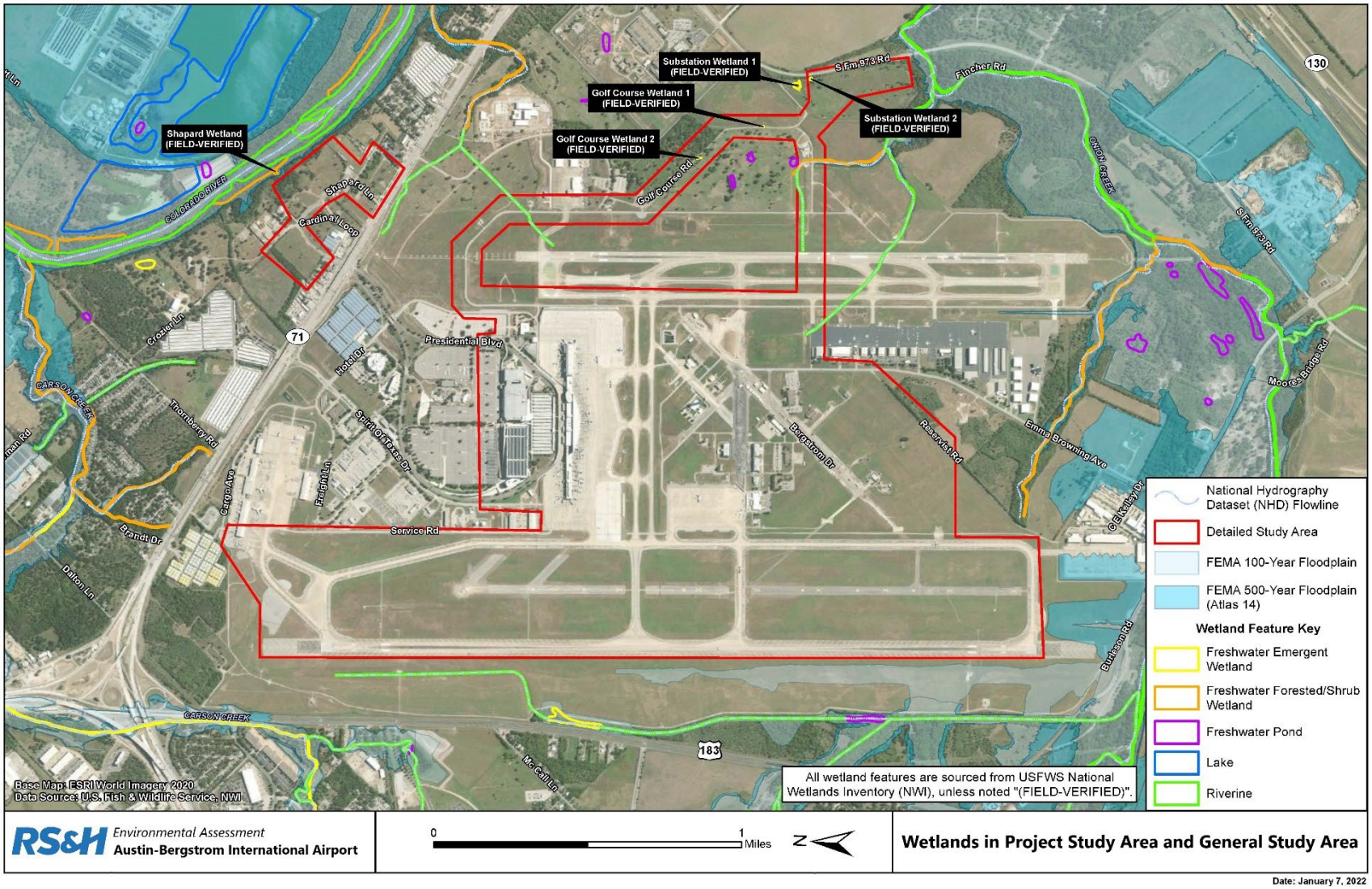
3.14.1.1 Regulatory Setting

Appendix C identifies the regulations associated with wetlands.

3.14.1.2 Affected Environment

The U.S Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapper shows that there are three riverine features (R4SBC) located on the east side of the Project Study Area and one Freshwater Forested/Shrub Wetland

FIGURE 3.14-1
WETLANDS IN PROJECT STUDY AREA AND GENERAL STUDY AREA



(PFO1A) located south of the radar station (see **Figure 3.14-1**).[45] During field surveys, the NWI features within the Project Study Area did not meet the U.S. Army Corps of Engineers (USACE) wetland definition based on vegetative cover Field surveys identified four assumed-non-jurisdictional wetlands and one assumed-jurisdictional wetland within or adjacent to the Project Study Area, described in the **Table 3.14-1** and shown in **Figure 3.14-1**.

3.14.1.3 Significance Threshold

FAA Order 1050.1F, Exhibit 4-1, defines the FAA's significance threshold for wetlands, which states that a significant impact would occur if "The action would:

- Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;
- Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;
- Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);
- Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;
- Promote development of secondary activities or services that would cause the circumstances listed above to occur; or
- Be inconsistent with applicable state wetland strategies."

3.14.1.4 Methodology

To evaluate the presence of potential wetlands within the Project Study Area, a desktop analysis was performed using a Geographical Information System (GIS). The GIS desktop analysis reviewed readily available spatial data that included USFWS NWI, Federal Emergency Management Agency (FEMA) floodplain maps, U.S. Geological Survey's (USGS) National Hydrography Dataset (NHD), USGS 7.5-minute topographic maps, City of Austin hydrology lines, and recent and past aerial imagery.

[45] USFWS. National Wetland Inventory. Retrieved December 2021, from: https://www.fws.gov/wetlands/data/mapper.HTML.

TABLE 3.14-1: FIELD IDENTIFIED WETLANDS

Name	Acreage	Description	Location	Jurisdictional Status
Shapard Wetland	0.081	Emergent/forested wetland: Comprises a concave area of predominantly taro (*Colocasia esculenta*), surrounded by bald cypress (*Taxodium distichum*) and saplings of green ash (*Fraxinus pennsylvanica*). Vegetation was along a spring-fed watercourse within the woodlands.	Within the General Study Area: Beyond fenceline at Shapard Lane laydown and parking lot area.	Jurisdictional
Golf Course Wetland 1	0.004	Emergent wetland: A patchy area of hydrophytic vegetation and dried algae was observed in a low area along the vehicle pathway. The area has been filled with cobble.	Within the Project Study Area: Along Golf Course Road on east side of Project Study Area.	Non-jurisdictional
Golf Course Wetland 2	0.010	Emergent wetland: A vegetated swale and ponded area were observed downstream of the culvert crossing with hydrophytic vegetation.	Within the Project Study Area: Along Golf Course Road northwest of Golf Course Wetland 1.	Non-jurisdictional
Substation Wetland 1	0.228	Emergent wetland: comprises a large concave area of predominantly flat spikerush (*Eleocharis compressa*) within the surrounding grassland.	Within the General Study Area: At the north end of the proposed Substation land parcel.	Non-jurisdictional
Substation Wetland 2	0.022	Emergent wetland: The wetland comprises a smaller concave area of predominantly flat spikerush, just west of the property fence and south of Substation Wetland 1.	Within the Project Study Area: At the east edge of the proposed Substation land parcel.	Non-jurisdictional

Source: Baer, 2022.

Following the desktop effort, field surveys were performed within the Project Study Area on August 31, September 1, and September 9, 2021. This effort followed guidance from the 1987 USACE Wetland Delineation Manual, Atlantic and Gulf Coast Plains Regional Supplement, and local regulatory guidance. Wetlands were identified based on vegetation presence; full wetland delineations were not performed.

3.14.1.5 Environmental Consequences

This section describes the potential effects of the Proposed Project on wetlands when compared to the No Action Alternative.

3.14.1.5.1 No Action Alternative

Under the No Action Alternative, the Airport would not implement the Proposed Project. The Airport would continue to operate and serve forecasted aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under the No Action Alternative. Therefore, there would be no effect on wetlands.

3.14.1.5.2 Proposed Project

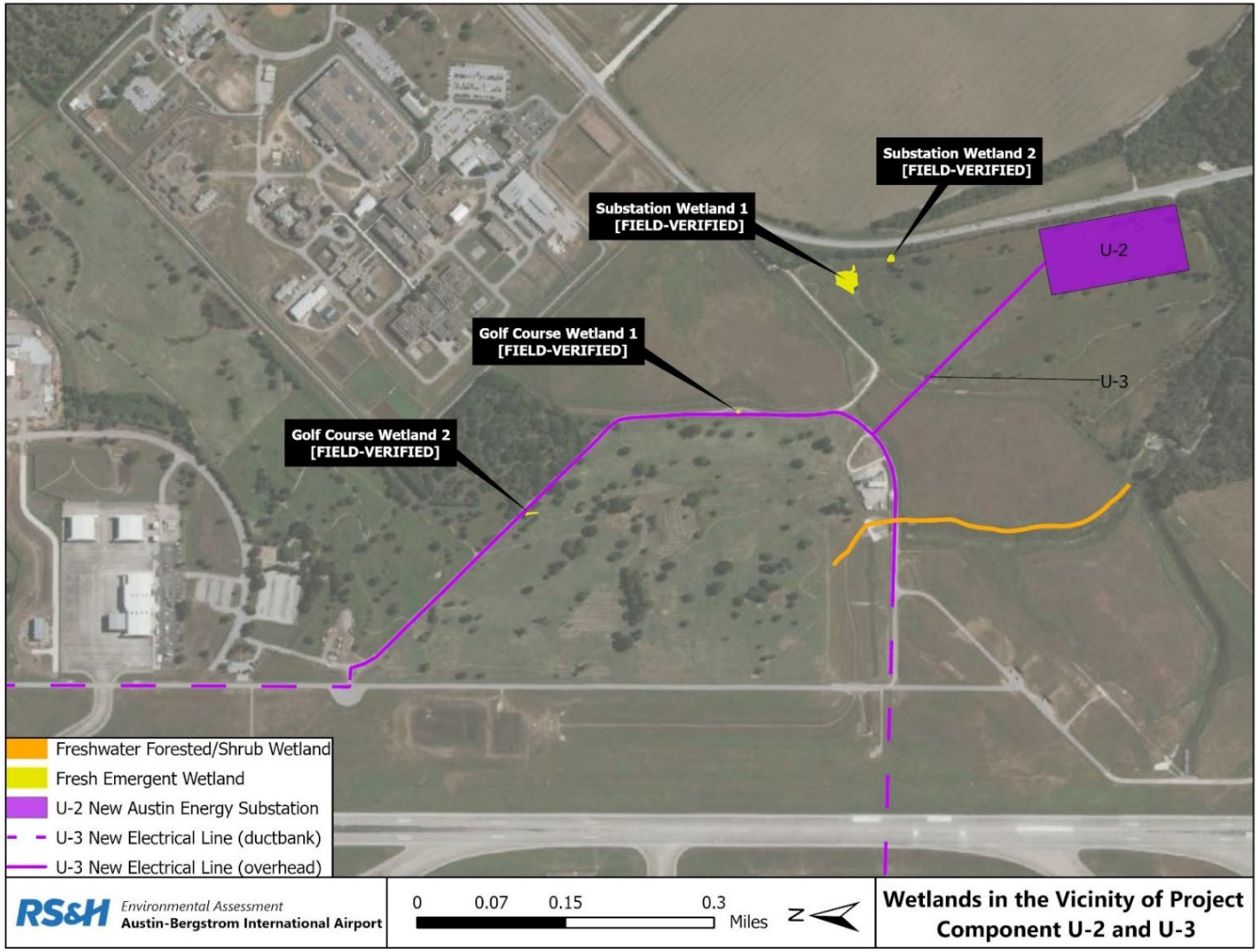
The alignment for the new electrical lines, including any utility poles, (Project U-3) on the east side of the Project Study Area would not affect the two Golf Course Wetlands and their buffer areas because the new electrical lines would be overhead (see **Exhibit 3.14-2**). No trenching would be required for installation of these new overhead electrical lines. The location for the construction of the new Austin Energy substation (Project U-2) was modified so that it would not affect the two Substation Wetlands and their buffer areas (see **Exhibit 3.14-2**). Construction of the new electrical ductbanks, which would be placed underground within the AOA to avoid any safety issues with aircraft operations, would occur in areas where no wetlands occur. Therefore, no impacts to wetlands would occur as a result of the Proposed Project.

The Proposed Project would have no direct impacts to the Shapard Wetland, which is assumed to be jurisdictional, or its buffer area. Indirect impacts from construction and development runoff into the Shapard Wetland could occur.

3.14.1.6 Mitigation Measures

All construction would avoid wetlands; therefore, the Proposed Project would result in no impacts to wetlands. No mitigation measures are proposed.

FIGURE 3.14-2
WETLANDS IN VICINITY OF PROJECT COMPONENTS U-2 AND U-3



3.14.2 Floodplains

This section describes regulations, affected environment, significance threshold(s), and methodologies used to determine potential effects, and identifies the impacts to floodplains from the Proposed Project and the No Action Alternative.

3.14.2.1 Regulatory Setting

Appendix C identifies the regulations associated with floodplains.

3.14.2.2 Affected Environment

The Airport property occupies portions of three local watersheds. The northern portion of the Project Study Area (north of State Highway [SH] 71) is in the Colorado River watershed, the northwestern portion of Project Study Area is in the Carson Creek watershed, and the balance of Airport property is in the Onion Creek watershed. **Exhibit 3.14-3** depicts the 100-year and 500-year floodplain in the Airport vicinity. There are FEMA-designated floodplains in the Airport vicinity, but no portion of the Project Study Area includes the 100-year floodplain or the 500-year floodplain.

The City of Austin operates a Regional Stormwater Management Program designed to address stormwater controls on a regional basis in the Onion Creek watershed. In 2011, using a detailed study as the basis for decision, the City of Austin Watershed Department approved the placement of up to 300 acres of impervious cover in the Onion Creek Watershed under the Regional Detention Program. This approval addresses both peak flow increases and the erosion potential of increase peak flow rates. Of the original 300 acres of impervious cover approved, 226 acres remain available for development.

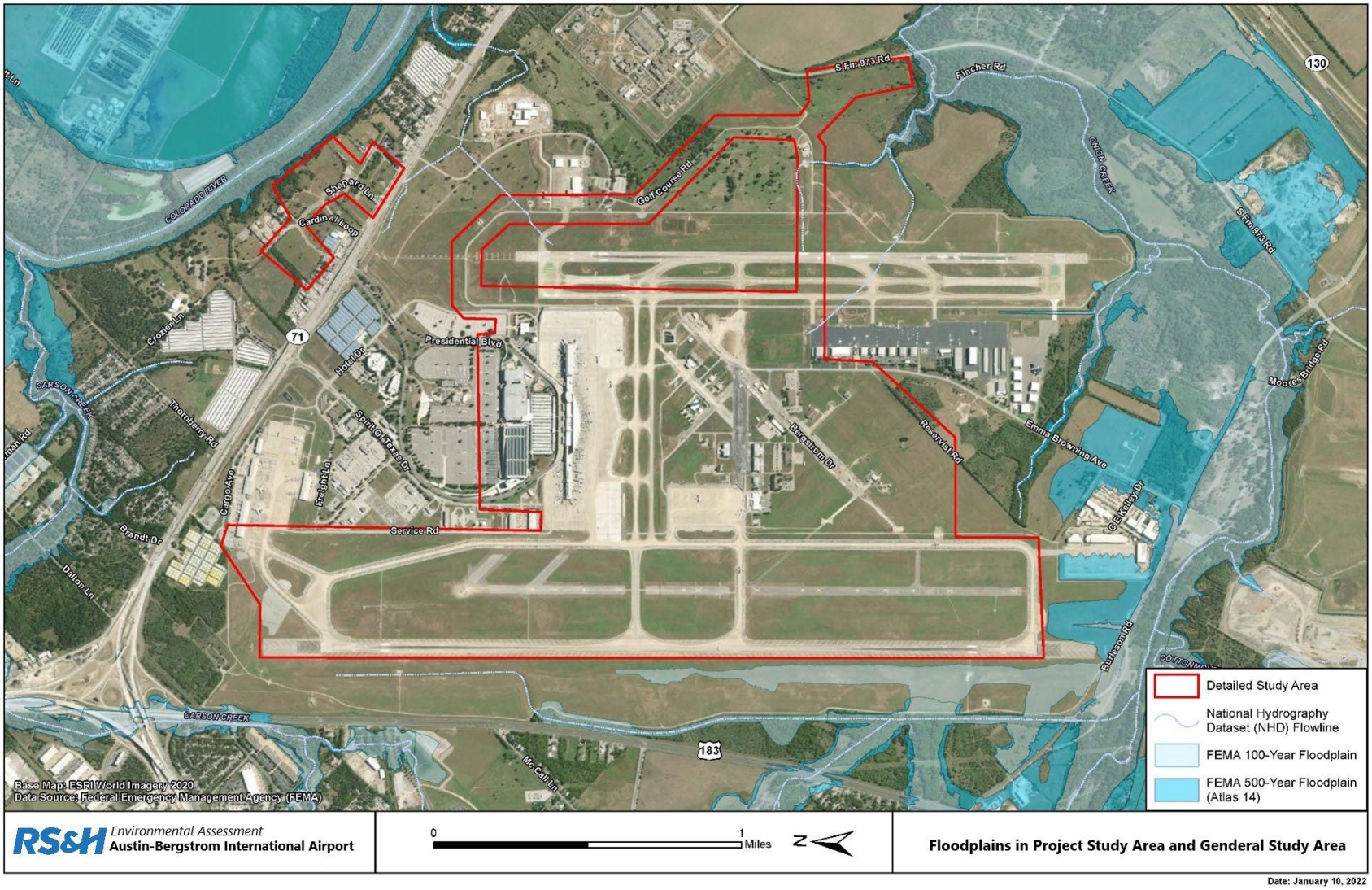
3.14.2.1 Significance Threshold

According to FAA Order 1050.1F, a significant impact to a floodplain would occur if "the action would cause notable adverse impacts on natural and beneficial floodplain values."

3.14.2.2 Methodology

The most recent floodplain delineations were gathered from the Federal Emergency Management Agency (FEMA) and compared with the Proposed Project's impacts to determine if any project component would occur with the 100-year floodplain and what impacts would occur within the 100-year floodplain.

FIGURE 3.14-3
FLOODPLAINS IN PROJECT STUDY AREA AND GENERAL STUDY AREA



3.14.2.1 Environmental Consequences

This section describes the potential effects to floodplains associated with implementation of the Proposed Project compared to the No Action Alternative.

3.14.2.1.1 No Action Alternative

Under the No Action Alternative, the project components identified in the AEDP would not be implemented. The City would continue to operate the Airport and serve forecast aviation demands. The No Action Alternative would not involve any construction and there would be no change to the existing floodplain in the Airport vicinity.

3.14.2.1.2 Proposed Project

None of the project components of the Proposed Project would occur within any existing floodplain. The Proposed Project would result in an increase of 104.3 acres of impervious surfaces and stormwater runoff would be conveyed to streams associated with floodplains in the Airport vicinity. This would include 28.4 acres in the Colorado River watershed and 75.9 acres in the Onion Creek watershed. The City of Austin, as the floodplain administrator, regulates both the 25- and 100-year floodplains in coordination with FEMA. City code describes locally regulated floodplains as commencing when a stream or channel serves a drainage area of more than 64 acres. This is an order of magnitude smaller than the area definition of FEMA floodplains (which typically start at a square mile). These City defined floodplains are generally situated within and adjacent to existing manmade channels and detention ponds and would be minimally affected by the Proposed Project.

An analysis of the Proposed Project using the AUS Stormwater Management Model (SWMM) has been completed. Individual project components of the Proposed Project were evaluated in SWMM, and the effects on Airport outfalls to off-Airport waterways were quantified. The SWMM shows no significant changes in peak outfall flows would occur for the 2-year and 100-year storm events. At some outfalls, there is an improvement (i.e., a decrease) in peak flow at the outfall due to a reduction in impervious surfaces. In addition, the Proposed Project is subject to City of Austin Land Development Code, which requires the Airport to mitigate increases in peak flows at the outfall to existing conditions.

Stormwater increases in the Onion Creek watershed would be managed through the City of Austin Regional Detention program. Stormwater runoff would be conveyed through the internal drainage systems to Onion Creek. Where required, internal infrastructure would be upgraded to accommodate additional impervious cover. On site conveyance channels have been analyzed and have been determined to be

resistant to erosion at the flow velocities and shear stresses expected in the two-year storm event, which is the local standard for erosion control.

There would be a slight increase (0.1 cubic feet per second) in the peak flow for the 100-year storm in the Carson Creek outfall. The stormwater increases in the Carson Creek watershed would be managed through the installation of on-site detention ponds to maintain peak discharge for the 2, 10, 25 and 100-year storm events at or below existing levels.

There would be a slight increase (0.5 cubic feet per second) in the peak flow for the 2-year storm in the Colorado River outfall. For the stormwater increases in the Colorado River watershed, increases in discharge would be managed on a regional approach similar to that used for the Onion Creek watershed.

With the management of the increase in stormwater runoff, the Proposed Project would not have a significant impact to floodplains.

3.14.2.2 Mitigation Measures

The Proposed Project would not result in any adverse effects to floodplains. Therefore, mitigation measures and BMPs are not proposed.

3.14.3 Surface Waters

This section describes regulations, affected environment, significance threshold(s), and methodologies used to determine potential effects, and identifies the impacts to surface waters from the Proposed Project and the No Action Alternative.

3.14.3.1 Regulatory Setting

Appendix C identifies the regulations associated with surface waters.

3.14.3.2 Affected Environment

Except for Onion Creek, none of the channels, ponds, stream and/or creeks on or immediately adjacent to the Airport property are considered perennial streams. Onion Creek Tributaries 1 and 2, which enter the site from the west under U.S. 183, are intermittent streams that contain water most of the year. The Airport property contains one small pond just inside the western boundary fence, five small manmade ponds located on the former golf course on the east side of the Airport property and a few small ponds located near Onion Creek to the south.

3.14.3.3 Significance Threshold

According to FAA Order 1050.1F, a significant impact to surface waters would occur if the action would:

- "Exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or
- Contaminate public drinking water supply such that public health may be adversely affect."

The Order also lists factors to consider that may result in a significant impact. The factors are if the project would:

- Adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values;
- Adversely affect surface waters such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or
- Present difficulties based on water quality impacts when obtaining a permit or authorization.

3.14.3.4 Methodology

Hydrologic analyses considered the changes in peak flows due to change in pre-development and post-development site conditions and also investigated water quality and mitigation requirements associated with the implementation of the Proposed Project. For water quantity, the Stormwater Management Model (SWMM) using new Atlas 14 rainfall rates was used.

3.14.3.5 Environmental Consequences

This section describes the potential effects to surface water associated with implementation of the Proposed Project compared to the No Action Alternative.

3.14.3.5.1 No Action Alternative

The No Action Alternative would result in no changes to surface waters at the Airport. Therefore, no impacts to surface waters would occur with the No Action Alternative.

3.14.3.5.2 Proposed Project

The Proposed Project would result in no changes to surface waters at the Airport. In addition, the Proposed Project would meet all applicable Federal, state, and local permits and requirements related to surface waters. Texas Pollution Discharge Elimination System (TPDES) permitting and the City's site development permit would require erosion and sedimentation controls (ESCs), including but not limited to, sediment traps, silt fence, inlet protection, rock berms, mulch socks, stabilized construction entrances, erosion control blankets, hydromulch, and restabilization. ESCs would be inspected regularly as required by TPDES and City regulations. Best

Management Practices (BMPs) would be defined in the Airport's Stormwater Pollution Prevention Plan (SWPPP) and implemented on construction sites. BMPs would include dust control measures (water trucks), good housekeeping, and proper management, handling and storage of materials and construction equipment (away from storm conveyances). Stormwater runoff from all proposed improvements would receive treatment, as mandated by the City's land development code, for total suspended solids (TSS) and other pollutant removal prior to the release to surface waters. Treatment approaches would include the use of vegetative filter strips, sedimentation/filtration basins and, potentially, rainwater gardens and rainwater harvesting. Runoff from areas used for deicing aircraft during cold weather will be directed to lined holding ponds which discharge effluent to a local wastewater treatment plant for processing.

3.14.3.6 Mitigation Measures

The Proposed Project would not result in any adverse effects to surface waters. Therefore, mitigation measures and BMPs are not proposed.

3.14.4 Groundwater

This section describes regulations, affected environment, significance threshold(s), and methodologies used to determine potential effects. In addition, this section identifies the groundwater impacts of the Proposed Project and the No Action Alternative, as well as mitigation measures, if needed.

3.14.4.1 Regulatory Setting

Appendix C identifies the regulations associated with groundwater.

3.14.4.2 Significance Threshold

According to FAA Order 1050.1F, a significant impact to groundwater would occur if the action would:

- "Exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or
- Contaminate an aquifer used for public water supply such that public health may be adversely affect."

Additionally, the FAA Order provides supplementary factors for consideration when evaluating the context and intensity of potential environmental impacts for groundwater. These supplementary factors are not considered thresholds, and any potential effects derived from applying these factors do not constitute a significant impact; rather, these factors provide a context for determining whether a significant impact could occur. The supplementary factors considered in this

analysis included, but are not limited to, whether the Proposed Project or No Action Alternative could:

- Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values;
- Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or
- Present difficulties based on water quality impacts when obtaining a permit or authorization.

3.14.4.3 Methodology

Maintaining groundwater impacts below the significance threshold includes analysis of groundwater conditions in the preliminary design phase of the Proposed Project to determine whether groundwater will be encountered, and incorporate management and treatment if needed during construction activities.

3.14.4.4 Affected Environment

Groundwater is between 20 and 30 feet below land surface on Airport property. Based on the historical operation of the Airport as an Air Force Base, areas with groundwater contamination are well defined on Airport property.

3.14.4.5 Environmental Consequences

This section describes the potential effects to groundwater associated with implementation of the Proposed Project compared to the No Action Alternative.

3.14.4.5.1 No Action Alternative

The No Action Alternative would result in no excavations in the saturated zone. Therefore, no impacts to groundwater would occur with the No Action Alternative.

3.14.4.5.2 Proposed Project

Various project components of the Proposed Project would likely encounter groundwater during construction activities. These project components include the construction of the deep piers for Concourse B (Project T-1), the construction of the connector to Concourse B (Project T-4), the depression of Emma Browning Road (Project R-3), and the construction of the South Campus stormwater infrastructure (Project U-4). The extent to which groundwater would be encountered would be determined during geotechnical investigation. In the event dewatering of contaminated groundwater is required, the Airport would discharge or dispose water in accordance with local, state and federal rules. Any discharge of the

groundwater to the "waters of the state" requires a TCEQ permit. The permit discharge limits would be based on surface water quality standards or those imposed by the local Publicly Owned Treatment Works operator. Smaller quantities of extracted contaminated groundwater may be containerized and disposed of off-site via a licensed hauler and industrial wastewater treatment facility. By obtaining any required permits associated with dewatering activities, no significant impacts to groundwater would occur as a result of the Proposed Project.

3.14.4.6 Mitigation Measures

The Proposed Project would not result in any adverse effects to groundwater. Therefore, mitigation measures and BMPs are not proposed.

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