EXECUTIVE SUMMARY

Draft Environmental Impact Statement

for T-7A Recapitalization at
Joint Base San Antonio, Texas

October
2021

Privacy Advisory

The Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (Title 40 Code of Federal Regulations [CFR] §§ 1500–1508), and 32 CFR § 989, *EIAP* [1]. The EIAP provides an opportunity for public input on Department of Air Force (DAF) decision making, allows the public to offer inputs on alternative ways for DAF to accomplish what it is proposing, and solicits comments on DAF's analysis of environmental effects.

Public commenting allows DAF to make better-informed decisions. Letters or other written or oral comments provided may be published in the EIS. As required by law, substantive comments provided will be addressed in the EIS and made available to the public. Providing personal information is voluntary. Private addresses will be compiled to develop a mailing list for those requesting copies of the EIS. However, only the names of the individuals making comments and specific comments will be disclosed. Personal information, home addresses, telephone numbers, and email addresses will not be published in the EIS.

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[1] This EIS was ongoing prior to the 14 September 2020 effective date of the CEQ's final rule updating its regulations for implementing the procedural provisions of NEPA. Accordingly, the revised CEQ regulations were not used for this action pursuant to 40 CFR § 1506.13.

Cover Photo Credit: Boeing T-7A Red Hawk Website, March 2020
https://www.boeing.com/defense/t-7a/#/gallery

ABBREVIATIONS AND ACRONYMS

AAF	Auxiliary Airfield
AETC	Air Education and Training Command
AFB	Air Force Base
AFI	Air Force Instruction
AGL	above ground level
AICUZ	Air Installations Compatible Use Zones
APE	area of potential effect
APZ	accident potential zone
AQCR	air-quality control region
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CO	carbon monoxide
CO_2e	carbon dioxide equivalents
DAF	Department of the Air Force
dB	decibel
dBA	A-weighted decibel
DNL	day-night average sound level
DoD	Department of Defense
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
FSRM	facilities sustainment, restoration, and modernization
ft^2	square feet
GBTS	Ground Based Training System
GHG	greenhouse gas
IFF	Introduction to Fighter Fundamentals
INRMP	Integrated Natural Resources Management Plan
IPaC	Information for Planning and Consultation
JBSA	Joint Base San Antonio
JLUS	Joint Land Use Study
L_{eq}	equivalent sound level
L_{max}	maximum sound level
MTR	Military Training Route
MTS	Maintenance Training System
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHLD	National Historic Landmark District
NHPA	National Historic Preservation Act
NLR	noise level reduction
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NRHP	National Register of Historic Places
O_3	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
PIT	Pilot Instructor Training
PM_{10}	particulate matter less than or equal to 10 microns
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns
ppb	parts per billion
PPE	personal protective equipment
ppm	parts per million
ROI	region of influence
RONA	record of non-applicability
SEL	sound exposure level
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	oxides of sulfur
SPCC	spill prevention, control and countermeasure
SUA	Special Use Airspace
tpy	tons per year
VOCs	volatile organic compounds

Executive Summary

DRAFT ENVIRONMENTAL IMPACT STATEMENT

FOR

T-7A RECAPITALIZATION

AT

JOINT BASE SAN ANTONIO, TEXAS

AIR EDUCATION AND TRAINING COMMAND

OCTOBER 2021

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Executive Summary

ES 1 Introduction

This Environmental Impact Statement (EIS) was prepared in compliance with the United States Department of the Air Force's (DAF) *Environmental Impact Analysis Process* (EIAP) for the Air Education and Training Command (AETC) proposal to recapitalize its flight training program with newer and more capable T-7A[2] Red Hawk aircraft at Joint Base San Antonio (JBSA)-Randolph, Texas. Recapitalization is the acquisition of the new generation T-7A aircraft and construction and upgrade of specific facilities to support the pilot training and, operations and maintenance of the T-7A aircraft. Current pilot training courses conducted at JBSA-Randolph (i.e., Pilot Instructor Training [PIT] and Introduction to Fighter Fundamentals [IFF]) would transition to the T-7A aircraft from currently used T-38C Talon aircraft. Subsequent T-7A recapitalization may occur at other T-38C training locations, but those are separate actions that will be analyzed in installation-specific NEPA documents and are not considered within the scope of this EIS, which covers T-7A recapitalization only at JBSA-Randolph.

In a Memorandum for Record dated February 16, 2018, the Secretary of the Air Force determined that JBSA-Randolph as the preferred alternative and Columbus, Laughlin, Sheppard, and Vance Air Force Bases as reasonable alternatives for the T-7A. The Air Force will recapitalize the AETC T-38C aircraft fleet with the T-7A aircraft. Air Force pilot training relies on a unique runway structure and special use airspace capable of supporting high volume pilot training, limiting the enterprise of potential bed-down installations to the five existing pilot training bases. The Air Force evaluated each base using criteria that included mission factors (weather and the ability to meet syllabus requirements), infrastructure capacity, as well as potential environmental constraints and costs.

This EIS analyzes the significance of the environmental impacts associated with the Proposed Action and its alternatives, including the No Action Alternative. The environmental documentation process associated with preparing this EIS was carried out in compliance with the National Environmental Policy Act (NEPA); the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (Title 40 Code of Federal Regulations [CFR] §§1500–1508[3]); and the DAF regulations for implementing NEPA (32 CFR § 989, as amended).

The T-38 is a twin-engine, high-altitude, supersonic jet used by DAF and other nations for pilot training. Training with the older T-38C aircraft fails to prepare pilots for the technological advancements of fourth and fifth generation aircraft including nighttime flight training. "Fourth generation aircraft" refers to those aircraft developed or manufactured with updated variants in

[2] The aircraft was referred to as "T-X" in the Notice of Intent and scoping materials. T-X was an interim designation used prior to the official T-7A model number being established.

[3] The EIAP for this EIS began with the Notice of Intent, which was published prior to the promulgation of CEQ's 16 July 2020 final rule updating the regulations implementing the procedural provisions of NEPA. As such, USAF will follow the previous CEQ rules throughout this EIAP in accordance with 40 CFR § 1506.13.

the later part of the 20th century such as the F-15E or the F-16. "Fifth generation aircraft" refers to modern aircraft with advanced avionics developed in the early part of the 21st century such as the F-22 and F-35.

DAF would recapitalize the T-38C aircraft fleet with the T-7A aircraft across all Specialized Undergraduate Pilot Training Bases. Program-wide, DAF would procure approximately 350 T-7A aircraft.

The focused Proposed Action analyzed in this EIS is T-7A recapitalization at JBSA-Randolph using 72 T-7A aircraft and sufficient operations to fully meet all T-7A training requirements. The T-7A aircraft would be assigned to JBSA-Randolph where primary flight operations would occur; secondary flight operations would occur at JBSA-Lackland and Seguin Auxiliary Airfield (AAF). Training operations within the airspace of all Special Use Airspace (SUA), ranges, alternative airfields, and Military Training Routes (MTRs) that are currently used by the T-38C aircraft would continue with the T-7A. JBSA-Randolph would be the initial base for T-7A recapitalization throughout the DAF. All current JBSA-Randolph T-38C aircraft would be transitioned out of the training programs and considered for retirement or repurposed for use at other locations.

ES 2 Purpose of and Need for Action

ES 2.1 Purpose of the Proposed Action

As noted in the Secretary of the Air Force Strategic Basing Decision Memorandum of February 16, 2018, the Air Force will recapitalize the Air Education and Training Command T-38C aircraft fleet with the T-7A aircraft at Specialized Undergraduate Pilot Training bases in order to support fifth generation fighter training requirements. The purpose of the Proposed Action of this EIS is to implement the T-7A recapitalization program at JBSA-Randolph to establish a source of T-7A instructor pilots as well as prepare pilots to operate the more technologically advanced aircraft.

ES 2.2 Need for the Proposed Action

The Proposed Action is needed because the current training practices with the older T-38C aircraft fail to prepare pilots for the technological advancements of fourth and fifth generation aircraft. By 2031, more than 60% of the Combat Air Force will be comprised of 5th generation aircraft, which requires a modern and capable training platform with capabilities beyond that currently available in the T-38C. Training systems provided with the newer T-7A aircraft allow for enhanced and improved flight and simulator training. The curriculum for T-7A training will initially remain consistent with current training for the T-38C with the addition of nighttime flying; however, may be modified as the training with the T-7A and knowledge of the aircraft capabilities and handling becomes more known. As a result, the T-7A recapitalization program will allow DAF to provide more efficient and effective instructor and pilot training for operating fourth and fifth generation aircraft. The T-7A recapitalization at JBSA-Randolph would allow DAF to establish a sustained cadre of T-7A pilot instructors and meet established DAF pilot training requirements. As noted in the attachments to the Secretary's Strategic Basing Decision Memorandum, "basing the first T-7A aircraft at JBSA-Randolph meets the AETC Commander's objectives of optimizing total T-7A training."

ES 3 Description of the Proposed Action and Alternatives (Draft EIS Chapter 2)

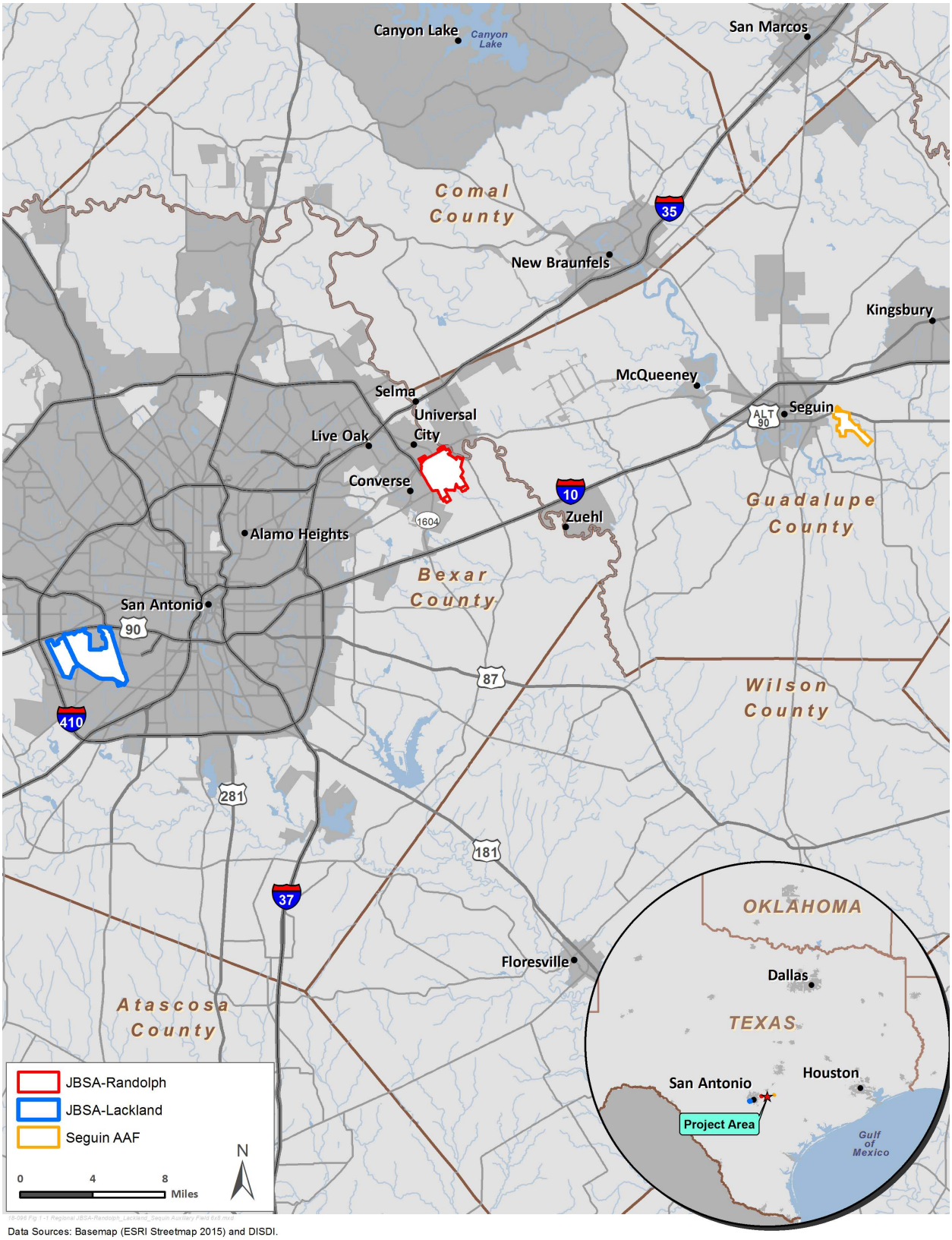
ES 3.1 Proposed Action

The Proposed Action is T-7A recapitalization at JBSA using 72 T-7A aircraft and sufficient operations to fully meet all T-7A training requirements. The T-7A aircraft would be assigned to JBSA-Randolph where primary flight operations would occur. Secondary flight operations would occur at JBSA-Lackland, Seguin AAF, and within the existing designated airspace where T-38C aircraft currently operate. The initial delivery and operation of T-7A aircraft would occur in 2023. T-7A aircraft operations would be phased in with both T-38C and T-7A operations occurring simultaneously through 2031. All flight operations would take place within existing airspace and no additions to, or alterations of airspace would occur under the Proposed Action. Facility construction and upgrades through six MILCON and 13 FSRM projects would be implemented and coordinated with T-7A aircraft arrival. Aircraft, aircraft operations, personnel, and facility requirements are described in detail in **Sections 2.1.1** through **2.1.4** in the Draft EIS. The JBSA installations affected by the Proposed Action and alternatives and locations are shown in **Figure 3-1**. T-7A replacing the T-38C aircraft stationed at JBSA-Randolph would use the same airspace in the south-Texas area to perform aircraft operations and supplement training in and around the airfields mentioned. This airspace includes SUA and MTRs that are approved by the FAA and designated on published aeronautical charts. **Figure 3-2** shows the designated airspace currently used for T-38C pilot training in the area.

ES 3.1.1 Aircraft

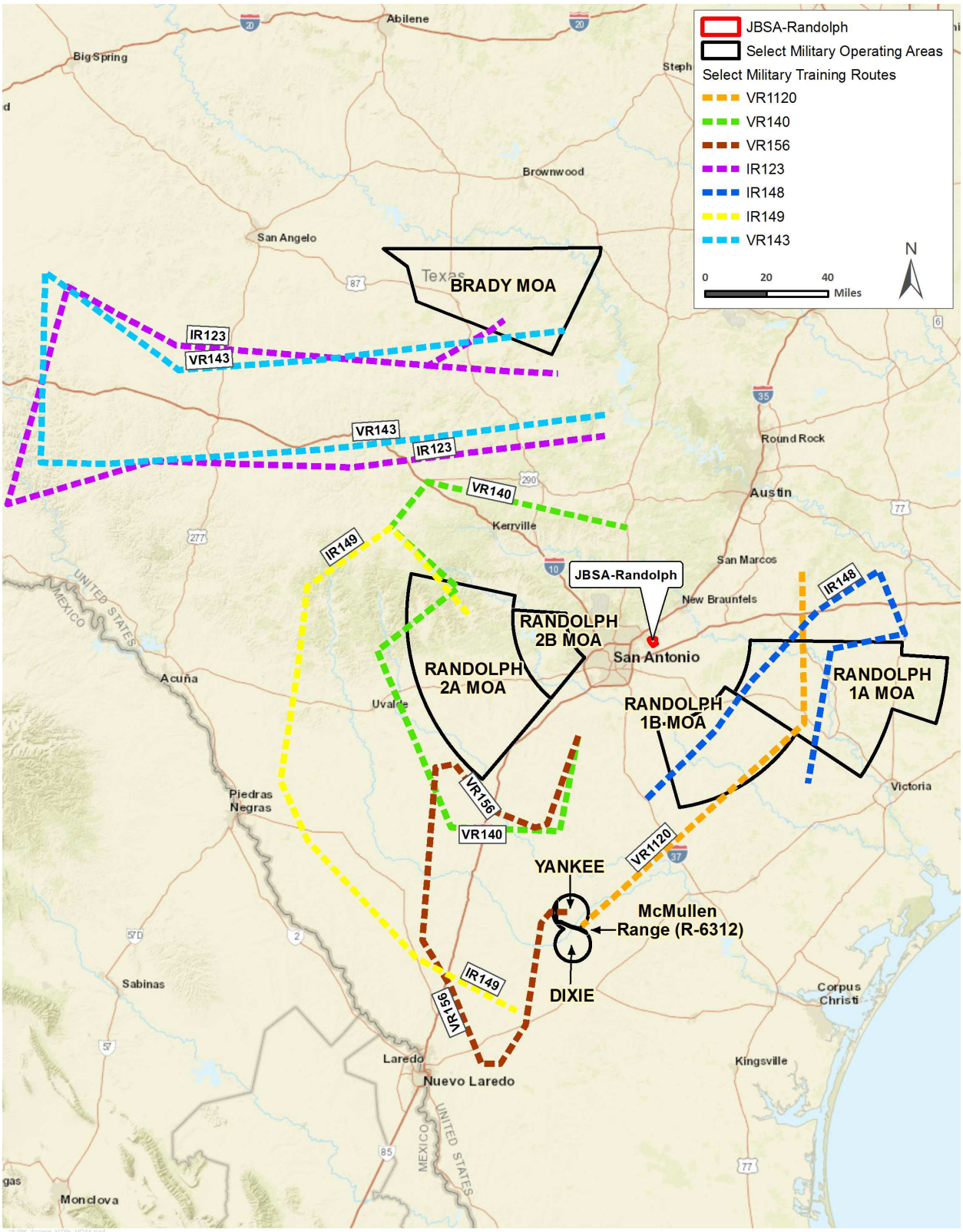
T-7A aircraft would be phased in over several years. When all T-7A deliveries are complete in 2028, 72 T-7A aircraft would be stationed at JBSA-Randolph. Currently, 91 T-38C aircraft are assigned to JBSA-Randolph; however, some of these aircraft are loaned out to other T-38C training bases and may return to JBSA-Randolph as shown with increasing T-38C aircraft numbers in years 2023 and 2024 in **Table 3-1**. The proposed aircraft implementation schedule is provided **Table 3-1**. As T-7A aircraft are incorporated into the training curriculum, the number of T-38C aircraft at JBSA-Randolph would be reduced. However, this will not occur at a one-for-one change in number of aircraft or operations. The change of aircraft would result in a larger number of total aircraft operating at JBSA-Randolph over the course of the T-38C to T-7A transition period. The increase in total aircraft operations during the transition is due to simultaneous T-38C and T-7A concurrent training for the existing PIT and IFF missions.

The T-38C aircraft currently operating at JBSA-Randolph would be phased out of the current pilot training program. Those removed from supporting the training program would be considered for retirement or repurposed for use at other locations. Any change to these plans resulting in the potential reuse and relocation of T-38C aircraft will be a separate DAF action and will be subject to separate environmental analysis.



Data Sources: Basemap (ESRI Streetmap 2015) and DISDI.

Figure 3-1. JBSA-Randolph, JBSA-Lackland, and Seguin AAF Locations



Data Sources: Basemap (ESRI Streetmap), FAA and DISDI.

Note: Width of MTRs not drawn to scale.

Figure 3-2. JBSA-Randolph T-38C Training Airspace in South Texas

Table 3-1. Cumulative Number of Aircraft and Operations under the Proposed Action

Aircraft	2017 Baseline	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032 and Later
Number of Aircraft Stationed at JBSA-Randolph											
T-38C	91	97	96	85	78	62	41	34	29	15	0
T-7A	0	8	18	25	39	58	72	72	72	72	72
Total	91	105	114	110	117	120	113	106	101	87	72
Operations at JBSA-Randolph											
Annual Aircraft Operations (Daytime)											
T-38C	97,000	131,100	131,100	113,333	103,517	79,406	55,936	46,691	35,718	18,845	0
T-7A	0	4,538	13,170	29,592	45,642	75,789	102,173	105,209	106,927	106,263	114,212
Total	97,000	135,638	144,270	142,925	149,159	155,195	158,109	151,900	142,645	125,108	114,212
Annual Aircraft Operations (Nighttime)[1]											
T-7A	0	320	184	1,912	3,072	4,400	5,520	5,712	5,664	5,664	5,664
Operations at JBSA-Lackland											
Annual Aircraft Operations (Daytime)											
T-38C	400	400	390	320	280	200	150	120	80	0	0
T-7A	0	40	64	296	480	680	792	864	888	896	928
Total	400	440	454	616	760	880	942	984	968	896	928
Annual Aircraft Operations (Nighttime)											
T-7A	0	20	16	96	160	224	256	280	288	288	288
Operations at Seguin AAF											
Annual Aircraft Operations (Daytime)											
T-38C	42,000	57,400	56,700	46,100	39,800	28,700	21,100	16,700	10,800	2,680	0
T-7A	0	645	2,880	13,200	21,200	30,320	35,280	38,560	39,440	39,920	41,200
Total	42,000	58,045	59,580	59,300	61,000	59,020	56,380	55,260	50,240	42,600	41,200
Operations within Airspace Training Areas (MOAs, Ranges, & MTRs)[2]											
Annual Aircraft Operations within the Training Airspace											
T-38C	13,641	18,436	18,436	15,938	14,558	11,166	7,866	6,566	5,023	2,650	0
T-7A	0	683	1,878	4,430	6,850	11,277	15,144	15,598	15,833	15,740	16,858
Total	13,641	19,119	20,314	20,368	21,408	22,443	23,010	22,164	20,856	18,390	16,858
Annual T-7A Aircraft Operations Below 3,000 feet AGL within the Training Airspace											
T-7A	0	237	651	1,535	2,373	3,906	5,246	5,403	5,484	5,516	5,903

Sources: LPES 2021, AFCEC/CZTQ 2021

Table 3-1 Notes:

1. Nighttime operations would only occur at JBSA-Randolph and JBSA-Lackland and only involve T-7A aircraft.
2. Operations for Airspace Training are a total number of aircraft operations. The various MOAs and MTRs will experience varying levels of operations within the total number of operations shown.

What is an Aircraft Operation?

In **Table 3-1** for the Proposed Action and corresponding tables for Alternatives 1, 2, and 3, the number of projected aircraft operations are provided as a means to analyze both the air quality and noise impacts from aircraft flights. For the purposes of these tables, an aircraft operation is defined as (1) a single takeoff; (2) a single landing; (3) the approach phase of a closed pattern; or (4) the takeoff phase of a closed pattern. Closed pattern operations often include a "touch-and-go" where the aircraft approaches the airfield, momentarily touches its wheels or flies close to the runway, and departs the airfield for additional flight maneuvers.

Often, aircraft operations are discussed using the term "sorties". A single aircraft sortie includes one takeoff and one landing, and may include closed patterns during flight. Aircraft operating from training installations such as JBSA-Randolph typically include multiple patterns flown with each sortie. In the case of the operations at JBSA-Randolph, an average of approximately 2.2 closed patterns (totaling 4.4 closed pattern operations) are conducted during each sortie. Actual sorties flown may include fewer closed patterns and some will include more than the average number used to calculate the total number of operations.

An example of how sortie information was used to calculate the number of operations presented for the Proposed Action and Alternatives follows: If 10,000 sorties were flown in any single year, the table would show a total number of 64,000 aircraft operations for that year (10,000 of the operations would be takeoffs, 10,000 would be landings, and the remaining 44,000 operations would be closed pattern operations [22,000 approach phase of closed pattern and 22,000 takeoff phase of a closed pattern]).

ES 3.1.2 Aircraft Operations

Aircraft operations would gradually shift from the T-38C to the T-7A in the PIT and IFF programs. Beginning in 2024, the current operations associated with T-38C would gradually decrease as T-7A are placed into service and would conclude at JBSA-Lackland by the end of 2030 and at JBSA-Randolph and Seguin AAF by the end of 2031. The annual number of aircraft operations for the T-38C and T-7A during the transition are provided in **Table 3-1**. DAF's program implementing plan calculated these annual operations as the baseline necessary for implementing the PIT and IFF training while simultaneously phasing out the T-38C aircraft and phasing in the T-7A aircraft. The proposed training syllabus for T-7A student pilots will remain the same as it currently is for T-38C students with the exception of the addition of nighttime flights due to the enhanced capabilities of the T-7A aircraft. The increase in total aircraft and operations during the transition is due to simultaneous T-38C and T-7A training for the PIT and IFF missions. T-7A annual operations would reach full capacity in 2032 and are projected to remain constant thereafter. Full capacity operations with the T-7A would exceed current baseline levels with the T-38C because of additional requirements in the training curriculum which can be attributed to nighttime operations and anticipated but unknown changes in curriculum once the capabilities of the T-7A are fully known. A proportionate change in training operations at JBSA-Lackland and Seguin AAF would also occur.

The posted hours of operation for JBSA-Randolph's airfield would not change. The airfield would remain open between 7:00 am and 7:00 pm, Monday through Friday, and between 1:00 pm and 4:00 pm on Sunday. The airfield would normally remain closed on Saturdays and federal holidays. However, with the enhanced capabilities and avionics of the T-7A aircraft, the Proposed Action includes the introduction of evening and nighttime operations with the T-7A. The evening operations would include operations that occur from dusk until 10:00 pm. Nighttime operations, by definition for aircraft noise modeling, occur between the hours of 10:00 pm and 7:00 am on normal training days. Therefore, T-7A operations could occur at any time during each 24-hour day. It is likely that as times of sunrise and sunset change throughout the seasons, the daily and hourly distribution of flight operations may vary to accommodate training curriculum requirements. At full implementation, up to 5,664 annual nighttime T-7A operations would occur at JBSA-Randolph and up to 288 annual nighttime T-7A operations would occur at JBSA-Lackland. No nighttime operations would occur at Seguin AAF.

The T-7A would operate within the same region as the T-38C and use the same airspace now used including SUA, ranges, MOAs, MTRs, and alternate airfields. Some of the airspace including VR143, IR123, IR148 and IR149 would not be immediately used by the T-7A; however, as the training curriculum for the new aircraft is updated these areas will likely be included for training. The current operating limits for the T-7A would be for flight at sub-sonic speeds only. (AFCEC/CZN 2021a). No changes to airspace configurations (i.e., size, shape, or location) are required for T-7A recapitalization.

ES 3.1.3 Personnel

During aircraft transition and at full T-7A implementation, there would be an overall increase in manpower at JBSA-Randolph due to operations and the implementation of a Maintenance Training System (MTS) which would host instructors and students to train maintainers program-

wide. The steady state manpower requirement is projected to be a 303 person increase with 576 dependents. No change in manpower requirements would occur at JBSA-Lackland or Seguin AAF.

ES 3.1.4 Facility Requirements

Potentially, six MILCON projects and 13 FSRM projects would occur at JBSA-Randolph to provide modern facilities and infrastructure to support the T-7A aircraft's maintenance, training, and operational requirements. No construction would occur at JBSA-Lackland or Seguin AAF.

ES 3.1.4.1 MILCON Projects

The six MILCON projects are described as follows. **Figure 3-3** shows the proposed locations of the MILCON projects.

MTS Facility, Ball Field, and Tennis Courts. Construct a 30,000-square foot (ft^2) high-bay aircraft MTS facility with administrative space, classroom space, tool crib, communications room, and spaces to accommodate eight trainers. A detailed description of this project is provided in Chapter 2 of the Draft EIS.

Ground Based Training System (GBTS) Facility. Construct a 33,000-ft^2 facility to hold a ground-based training simulator system facility, which consists of six weapon systems trainers, two operational flight trainers (both requiring eight large bays total), and two unit-training devices (requiring two smaller bays). The GBTS facility would be located adjacent to the proposed MTS facility on the existing ball field at the intersection of Fifth Street East and D Street East. Additional details are provided in Chapter 2 of the Draft EIS.

Hush House Pad. A hush house is an enclosed unit that contains noise suppressing and testing equipment to accommodate in-frame or out-of-frame aircraft engine testing. The proposed hush house pad would be constructed on the site of JBSA-Randolph's existing hush house pad on the airfield. Additional details are provided in Chapter 2 of the Draft EIS.

Fuel Cell Facility. Construct a 35,138-ft^2 T-7A Fuel Systems Maintenance Dock (i.e., Fuel Cell) facility. The facility would be a two-bay facility to support simultaneous maintenance of four aircraft. Additional details are provided in Chapter 2 of the Draft EIS.

T-7A Shelters. Construct 65 shelters (sunshades) on the existing aircraft parking apron to protect T-7A aircraft from adverse weather. Existing T-38C shelters would be removed. Additional details are provided in Chapter 2 of the Draft EIS.

Add/Alter T-7A Egress Facility. Add two rooms (total of 3,739 ft^2) to the southwest side of Building 38 for egress maintenance and egress storage rooms. The egress facility is limited in the amount of explosives and detonation cord that can be on hand in the maintenance area and storage. Additional details are provided in Chapter 2 of the Draft EIS.

Data Source: Imagery (ESRI 2015).

Figure 3-3. MILCON Project Locations

ES 3.1.4.2 FSRM Projects

The 13 FSRM projects that would occur at JBSA-Randolph to support the T-7A recapitalization are detailed in Table 3-4 of the Draft EIS and consist mainly of minor interior renovations.

ES 3.2 Alternatives including the Proposed Action

ES 3.2.1 Aircraft and Aircraft Operations Alternatives

ES 3.2.1.1 Alternatives

Alternative 1: Conduct T-7A Operations at a Lower Intensity than the Proposed Action with Fewer Aircraft to Comply with CAA Conformity Requirements. After the public scoping period ended and initial impact analysis began, DAF determined that emissions of an O_3 precursor from operations of the T-7A aircraft at the intensity of the Proposed Action would exceed the 100 tons per year (tpy) allowable limit for new sources in a nonattainment area in 2027 and later. To remedy this situation, DAF calculated the allowable number of T-7A aircraft and aircraft operations that would result in emissions less than the prescribed limit and allow the recapitalization efforts to be implemented at JBSA-Randolph. The number of aircraft and intensity of operations under this alternative, if selected, would be adequate to meet training and basing requirements until 2026. This timeframe allows for the transition of aircraft to begin at JBSA-Randolph and conduct training operations with O_3 percursor emissions below the 100 tpy limit within Bexar County. This timeline also aligns with planned re-evaluation of air quality in Bexar County for attainment/nonattainment categorization. In Section 3 of the Draft EIS, discussion of mitigation and adaptive management strategies are addressed as concurrent actions that may occur and further analyzed to define the allowable level of future T-7A operations beyond 2026. Training and basing requirements would need to be reassessed consistent with the general conformity requirements, as identified in 42 United States Code (USC) § 7606 (c) [CAA § 176(c)], that are applicable to Bexar County at the time of reassessment, if required. These additional concurrent actions are discussed as adaptive management measures and further defined in Section 3 of the Draft EIS.

Under Alternative 1, JBSA-Randolph would receive up to 56 T-7A aircraft with all aircraft arriving no later than 2028. T-7A operations would reach current maximum allowable number of operations in 2028 based on projected emissions and the current limit for O_3 precursors noted above T-38C operations would conclude in 2027. In addition to the proposed daytime flight operations, up to 4,065 annual nighttime T-7A operations would be performed at JBSA-Randolph and up to 225 annual nighttime T-7A operations would be performed at JBSA-Lackland. The conversion from T-38C to T-7A aircraft and the annual aircraft operations for JBSA-Randolph, JBSA-Lackland, and Seguin AAF under Alternative 1 are defined in **Table 3-2**.

Alternative 2: Perform T-7A Operations at an Intensity 15 Percent Greater than the Proposed Action. Like the Proposed Action, JBSA-Randolph would receive 72 T-7A aircraft with all aircraft arriving no later than 2028; T-7A operations would reach full capacity in 2032; and T-38C operations would conclude in 2031. However, under Alternative 2, beginning in 2024 T-7A aircraft would perform annual operations at JBSA-Randolph, JBSA-Lackland, and Seguin AAF at an intensity that is approximately 15 percent greater than the Proposed Action. Alternative 2 is intended to cover a potential scenario in which, for either broad strategic or

tactical operational reasons, DAF requires a surge or increase in pilot training operations above the program implementing plan and is represented by the 15 percent increase. T-7A nighttime operations would occur with up to 6,569 nighttime operations at JBSA-Randolph and up to 331 nighttime operations at JBSA-Lackland.

The conversion from T-38C to T-7A aircraft and the annual aircraft operations for JBSA-Randolph, JBSA-Lackland, and Seguin AAF under Alternative 2 are defined in **Table 3-3**.

Alternative 3: Perform T-7A Operations at an Intensity 25 Percent Greater than the Proposed Action. Like the Proposed Action, JBSA-Randolph would receive 72 T-7A aircraft with all aircraft arriving no later than 2028; T-7A operations would reach full capacity in 2032; and T-38C operations would conclude in 2031. However, Alternative 3 would further increase the surge or increase of T-7A operations to approximately 25 percent above the Proposed Action beginning in 2024. T-7A nighttime operations would occur with up to 7,140 nighttime operation at JBSA-Randolph and 360 nighttime operations at JBSA-Lackland. The conversion from T-38C to T-7A aircraft and the annual aircraft operations for JBSA-Randolph, JBSA-Lackland, and Seguin AAF under Alternative 3 are defined in **Table 3-4**.

For each of the three alternatives, the T-7A would perform the same types of operations within the training region of JBSA-Randolph, JBSA-Lackland, and Seguin AAF, as described for the Proposed Action.

ES 3.2.2 Facility Requirements Alternatives

MTS Facility. One alternative was considered for the MTS facility to convert Hangar 13 to an aircraft MTS facility. Conversion would require renovation of 30,000 ft^2 of hangar space for repairs or modifications. Because this alternative would interrupt and relocate existing activities at Hangar 13, it fails to avoid operational constraints and has been dismissed from further analysis in this EIS.

GBTS Facility. Two alternatives were considered for the GBTS facility. The first alternative would convert Building 745 to a GBTS facility. This alternative would displace 90 personnel from the Air Force Audit Agency. Therefore, this alternative was determined to not be an efficient solution because it displaces a current function. Therefore, this alternative has been dismissed from further analysis in this EIS.

The second alternative only would occur if aircraft operations Alternative 1 is selected. Under this alternative, the GBTS facility would be sited identically as the Proposed Action but designed with six large bays rather than eight. Fewer bays would be sufficient under Alternative 1 given the reduced number of aircraft and aircraft operations as compared to the Proposed Action. The building size and footprint would remain the same as the Proposed Action, and the additional building space would be used as administrative areas and office space. This alternative meets all the selection standards and is carried forward for analysis in this EIS as part of Alternative 1.

Hush House. No alternatives were considered for the hush house pad. The current location has proven to be a good locale for access and for minimizing noise from hush house engine run-ups to neighboring areas.

Table 3-2. Cumulative Number of Aircraft and Operations under Alternative 1

Aircraft	2017 Baseline	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032 and Later
Number of Aircraft Stationed at JBSA-Randolph											
T-38C	91	97	96	85	78	62	0	0	0	0	0
T-7A	0	8	18	25	39	52	56	56	56	56	56
Total	91	105	114	110	117	114	56	56	56	56	56
Operations at JBSA-Randolph											
Annual Aircraft Operations (Daytime)											
T-38C	97,000	131,100	131,100	113,333	103,517	79,406	0	0	0	0	0
T-7A	0	4,538	13,170	29,592	45,642	70,216	76,257	76,257	76,257	76,257	76,257
Total	97,000	135,638	144,270	142,925	149,159	149,622	76,257	76,257	76,257	76,257	76,257
Annual Aircraft Operations (Nighttime)											
T-7A	0	320	184	1,912	3,072	3,630	4,065	4,065	4,065	4,065	4,065
Operations at JBSA-Lackland											
Annual Aircraft Operations (Daytime)											
T-38C	400	400	390	320	280	200	0	0	0	0	0
T-7A	0	40	64	296	480	600	675	675	675	675	675
Total	400	440	454	616	760	800	675	675	675	675	675
Annual Aircraft Operations (Nighttime)											
T-7A	0	20	16	96	160	200	225	225	225	225	225
Operations at Seguin AAF											
Annual Aircraft Operations (Daytime)											
T-38C	42,000	57,400	56,700	46,100	39,800	28,700	0	0	0	0	0
T-7A	0	645	2,880	13,200	21,200	30,320	32,562	32,562	32,562	32,562	32,562
Total	42,000	58,045	59,580	59,300	61,000	59,020	32,562	32,562	32,562	32,562	32,562
Operations within Training Airspace (MOAs, Ranges, MTRs)											
Annual Aircraft Operations within the Training Airspace											
T-38C	13,641	18,436	18,436	15,937	14,557	11,166	0	0	0	0	0
T-7A	0	683	1,878	4,430	6,850	10,385	11,295	11,295	11,295	11,295	11,295
Total	13,641	19,119	20,314	20,368	21,407	21,551	11,295	11,295	11,295	11,295	11,295
Annual T-7A Aircraft Operations Below 3,000 feet AGL within the Training Airspace											
T-7A	0	276	758	1,787	2,763	4,188	4,555	4,555	4,555	4,555	4,555

Sources: LPES 2021, AFCEC/CZTQ 2021

Table 3-3. Cumulative Number of Aircraft and Operations under Alternative 2

Aircraft	2017 Baseline	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032 and Later
Number of Aircraft Stationed at JBSA-Randolph											
T-38C	91	97	96	85	78	62	41	34	29	15	0
T-7A	0	8	18	25	39	58	72	72	72	72	72
Total	91	105	114	110	117	120	113	106	101	87	72
Operations at JBSA-Randolph											
Annual Aircraft Operations (Daytime)											
T-38C	97,000	131,100	131,100	113,333	103,517	79,406	55,936	46,691	35,718	18,845	0
T-7A	0	4,538	15,146	34,030	52,488	87,158	117,500	120,991	122,966	122,202	131,344
Total	97,000	135,638	146,246	147,363	156,005	166,564	173,436	167,682	158,684	141,047	131,344
Annual Aircraft Operations (Nighttime)											
T-7A	0	320	212	2,199	3,533	5,060	6,348	6,569	6,514	6,514	6,514
Operations at JBSA-Lackland											
Annual Aircraft Operations (Daytime)											
T-38C	400	400	390	320	280	200	150	120	80	0	0
T-7A	0	40	74	340	552	782	911	994	1,021	1,030	1,067
Total	400	440	464	660	832	982	1,061	1,114	1,101	1,030	1,067
Annual Aircraft Operations (Nighttime)											
T-7A	0	20	18	110	184	258	294	322	331	331	331
Operations at Seguin AAF											
Annual Aircraft Operations (Daytime)											
T-38C	42,000	57,400	56,700	46,100	39,800	28,700	21,100	16,700	10,800	2,680	0
T-7A	0	645	3,312	15,180	24,380	34,868	40,572	44,344	45,356	45,908	47,380
Total	42,000	58,045	60,012	61,280	64,180	63,568	61,672	61,044	56,156	48,588	47,380
Operations within Training Airspace (MOAs, Ranges, MTRs)											
Annual Aircraft Operations within the Training Airspace											
T-38C	13,641	18,436	18,436	15,937	14,557	11,166	7,866	6,566	5,023	2,650	0
T-7A	0	2,160	5,095	7,878	12,968	17,415	17,938	18,208	18,101	19,386	19,386
Total	13,641	20,596	23,531	23,815	27,525	28,582	25,804	24,774	23,124	22,036	19,386
Annual T-7A Aircraft Operations Below 3,000 feet AGL within the Training Airspace											
T-7A	0	237	749	1,766	2,730	4,494	6,035	6,216	6,310	6,347	6,792

Source: LPES 2021

Table 3-4. Cumulative Number of Aircraft and Operations under Alternative 3

Aircraft	2017 Baseline	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032 and Later
Number of Aircraft Stationed at JBSA-Randolph											
T-38C	91	97	96	85	78	62	41	34	29	15	0
T-7A	0	8	18	25	39	58	72	72	72	72	72
Total	91	105	114	110	117	120	113	106	101	87	72
Operations at JBSA-Randolph											
Annual Aircraft Operations (Daytime)											
T-38C	97,000	131,100	131,100	113,333	103,517	79,406	55,936	46,691	35,718	18,845	0
T-7A	0	4,538	16,463	36,989	57,052	94,737	127,717	131,511	133,658	132,828	142,765
Total	97,000	135,638	147,563	150,322	160,569	174,143	183,653	178,202	169,376	151,673	142,765
Annual Aircraft Operations (Nighttime)											
T-7A	0	320	230	2,390	3,840	5,500	6,900	7,140	7,080	7,080	7,080
Operations at JBSA-Lackland											
Annual Aircraft Operations (Daytime)											
T-38C	400	400	390	320	280	200	150	120	80	0	0
T-7A	0	40	80	370	600	850	990	1,080	1,110	1,120	1,160
Total	400	440	470	690	880	1,050	1,140	1,200	1,190	1,120	1,160
Annual Aircraft Operations (Nighttime)											
T-7A	0	20	20	120	200	280	320	350	360	360	360
Operations at Seguin AAF											
Annual Aircraft Operations (Daytime)											
T-38C	42,000	57,400	56,700	46,100	39,800	28,700	21,100	16,700	10,800	2,680	0
T-7A	0	645	3,600	16,500	26,500	37,900	44,100	48,200	49,300	49,900	51,500
Total	42,000	58,045	60,300	62,600	66,300	66,600	65,200	64,900	60,100	52,580	51,500
Operations with Airspace Training Areas (MOAs, Ranges, MTRs)											
Annual Aircraft Operations within the Training Airspace											
T-38C	13,641	18,436	18,436	15,937	14,557	11,166	7,866	6,566	5,023	2,650	0
T-7A	0	683	2,347	5,538	8,563	14,096	18,931	19,498	19,791	19,675	21,072
Total	13,641	19,119	20,783	21,475	23,120	25,262	26,797	26,064	24,814	22,325	21,072
Annual T-7A Aircraft Operations Below 3,000 feet AGL within the Training Airspace											
T-7A	0	237	814	1,919	2,967	4,884	6,559	6,756	6,858	6,898	7,382

Source: LPES 2021

Fuel Cell. One alternative was considered for the fuel cell facility. The alternative would convert Hangar 13 into the fuel cell facility. Conversion would require renovation to approximately 29,125 ft^2 of interior space in Hangar 13 and construction of a 16,300 ft^2 addition onto the building. This alternative fails to meet Selection Standard 2 because it does not provide an efficient solution to conduct fuel cell activities and dismissed from further analysis.

T-7A Shelters. One alternative was considered for the T-7A shelters. This alternative only would occur if aircraft operation Alternative 1 is selected for implementation. Under this alternative, 52 T-7A shelters would be installed rather than 65 under the Proposed Action.

T-7A Egress Facility. One alternative was considered for the addition and alteration of Building 38 to accommodate egress maintenance and egress storage rooms. This alternative would only occur if aircraft operations Alternative 1 is selected for implementation. Under this alternative, the planned addition of 3,739 ft^2 to Building 38 would be reduced proportionately.

ES 3.3 No Action Alternative

Under the No Action Alternative, DAF would not implement T-7A recapitalization at JBSA. As a result, the DAF's T-7A recapitalization program would not be initiated and T-7A aircraft would not be flown for pilot training in place of the T-38C. The manufacturing of the T-7A aircraft has been contracted; therefore, the disposition of the T-7A aircraft would be determined separately if the No Action Alternative were implemented. The installation's existing fleet of T-38C aircraft would continue to be used in their current capacity even though they will reach the end of their service lives within the next decade. Maintenance requirements for these aircraft would continue to increase. No changes to current flight operations would likely occur until the end of the T-38C's service life. The retention and continued use of the T-38C aircraft would impose no change on the number of personnel on JBSA-Randolph. The number and types of T-38C aircraft operations would remain the same, consistent with the current training curriculum and as operations are shown in the 2017 JBSA-Randolph Air Installations Compatible Use Zones Study. The airspace (MOAs, MTRs, and Ranges) for T-38C operations would continue to be used at the same tempo and in a similar manner. No MILCON or FSRM projects would be undertaken to support the T-7A program at JBSA-Randolph. Selection of the No Action Alternative would not be sustainable and would fail to train pilots to transition to 4^{th} and 5^{th} generation aircraft. The No Action Alternative does not meet the purpose of and need for the action.

ES 3.4 Identification of the Preferred Alternative

DAF has identified the Proposed Action for this EIS addressing recapitalization at JBSA-Randolph as its Preferred Alternative.

ES 4 Affected Environment and Environmental Consequences

In compliance with NEPA, CEQ, and DAF EIAP regulations and guidelines, this EIS focuses only on those environmental resources considered potentially subject to significant impacts from the Proposed Action and alternatives. The environmental resources analyzed within are air quality, noise, biological resources, cultural resources, land use, hazardous materials and wastes, infrastructure and transportation, safety, water resources, and environmental justice. The environmental resources not analyzed in detail in this EIS because clearly insignificant or no impacts would occur are airspace configurations, geological resources, and socioeconomics. The following paragraphs explain why those resources were dismissed from detailed analysis in this EIS.

Airspace. The Proposed Action and alternatives would have no impacts on existing airspace configurations (shape, size, altitudes). T-7A operations would occur within the same designated airspace boundaries currently used for T-38C operations (i.e., McMullen Range, Brady MOAs, Randolph MOAs, VR140, VR143, VF156, VR1120, IR123, IR148, and IR149). No changes in the location, size, shape or altitudes to the existing airspace would occur. The manner in which the airspace is used would not change. All aircraft using JBSA-Randolph, JBSA-Lackland, and Seguin AAF would continue to follow the same flight profiles (e.g., airfield approach and departure paths).

Geological Resources. The Proposed Action and alternatives would have no significant impacts on geological resources. No impacts on regional geology and local topography would occur. Construction for the MILCON and FSRM projects would be small enough in scope that it would not alter geological structures and features. No ground disturbance would occur at JBSA-Lackland and Seguin AAF; therefore, no impacts on geological resources would occur at these JBSA installations.

Socioeconomics. The Proposed Action and alternatives would have insignificant impacts on socioeconomics. The JBSA-Randolph workforce would increase by 303 new personnel over 12 years. The DAF has estimated that on average active-duty personnel are accompanied by 1.9 dependents resulting in 576 dependents for a total of 879 new residents to Bexar County. No additional personnel would be added to JBSA-Lackland and Seguin AAF.

The demand for housing, schools, and other public services would increase from the addition of these personnel and their dependents, but it would not be noticeable given the population and population growth rate of Bexar County. The addition of approximately 879 new residents over 12 years would have insignificant impacts on socioeconomics. Based on the current distribution of JBSA-Randolph employees living throughout the San Antonio region, it is assumed that the addition of 576 dependents would be spread out and not create a burden on attendance at any single school.

Adaptive Management. Due to the impacts from T-7A recapitalization at JBSA-Randolph, DAF is implementing Adaptive Management strategies to mitigate impacts addressed in the Air Quality and Noise resource sections. Because the T-7A aircraft has not yet been accepted into

the DAF inventory, the aircraft has only been flown in testing. The test mode flying operations do not necessarily reflect those patterns and parameters that the T-7A will be used at JBSA-Randolph for pilot training. Therefore, once the T-7A is put into training operations at JBSA-Randolph, additional information will be required to more accurately forecast the potential impacts on air quality and noise. This additional information will be employed into an adaptive management strategy.

Some adaptations may require supplemental NEPA analysis, such as those that would result in a substantial change to the action that is relevant to environmental concerns, or if there are significant new circumstances or information relevant to environmental concerns and have bearing on the proposed action or its impacts. Thus, the Post-ROD mitigation plan will include an adaptive management program incorporating (for example) the following kinds of adaptive management approaches:

- *Noise Modeling*. Supplement existing data with new noise data as it is being developed in the future. Use new data to reveal and understand the potential effects of activities or practices that are underway or being considered for implementation in the T-7A ramp up to final operational capability and thereafter. Make changes to improve mitigations and related actions.
- *Management and Oversight*. Monitor and evaluate results of earlier predictions. Develop and implement adaptations within the bounds of impacts analyzed in the selected alternative to eliminate or reduce effects.
- *New Knowledge and Information*. Through experimentation, knowledge and information can be incorporated into management options and recommendations.

ES 4.1 Air Quality

ES 4.1.1 Definition of the Resource

Air quality is the measure of pollution in ambient air (i.e., atmospheric air in its natural state).

ES 4.1.2 Affected Environment

The proposed action potentially impacts a large spatial area that has been broken into four separate Regions of Influence (ROI) based on their regulatory requirements and the physical spatial distribution of the emissions sources associated with the action. The four ROIs for this action are Bexar County, Guadalupe County, Brady Military Operations Area (MOA), and Military Training Areas (MTRs, also including R-6312). For air quality impacts assessments, a ROI is a three-dimensional vertical column of air up to 3,000 ft above ground level (or the mixing zone, whichever is lower) where pollutant emissions associated with an action will occur.

Bexar County is designated as nonattainment for the 2015 8-hour Ozone NAAQS and attainment for all other criteria pollutants (USEPA 2021a). The USEPA has designated all other areas associated with the action (including Guadalupe County, Brady MOA, and MTR ROIs) as in attainment for all criteria pollutants (USEPA 2021a). Because of Bexar County's designation as an ozone nonattainment area, the portion of the action within the Bexar Count ROI is subject to the General Conformity Rule (GCR, 40 CFR 93 Subpart B) and a GCR evaluation (impact

assessment) is required. A GCR evaluation is the entire progressive process from an Applicability Analysis through the GCR Determination that is used to demonstrate that an action conforms to the requirements of the GCR. An Applicability Analysis is an annual net change in emissions analysis used for determining if an action must be supported by a GCR Determination.

Guadalupe County, Brady MOA (including areas within McCulloch, San Saba, Llano, and McMullen Counties), and MTA (including areas within Atascosa, Bandera, Bastrop, Bee, Blanco, Caldwell, Comal, DeWitt, Dimmit, Frio, Gonzales, Hays, Jim Wells, Karnes, Kendall, La Salle, Live Oak, McMullen, Uvalde, Webb, and Zavala Counties) ROIs are all in full attainment for all criteria pollutants. As these ROIs are in attainment for all NAAQSs, the GCR does not apply to emissions associated with the action within these areas.

ES 4.1.3 Environmental Consequences

ES 4.1.3.1 Proposed Action

The Proposed Action will have minor short-term and significant long-term adverse effects on air quality. Short-term (2022 to 2026) minor effects will be from fugitive dust and the use of heavy equipment during construction and additional personnel, heated space, and aircraft flight operations during the initial phasing of T-38C to T-7A aircraft. Long-term (2027 and beyond) significant effects would be from substantial changes in aircraft flight activities at JBSA-Randolph, JBSA-Lackland, Seguin AAF, the MOAs, the MTRs, and R-6312. The Proposed Action would both (1) have NOx emissions that exceed the de minimis values in the Bexar County nonattainment area; and (2) NOx emissions that exceed the insignificance indicator in the Guadalupe County ROI (an attainment area); however, it would not contribute to a violation of any Federal, state, or local air regulation.

The total net change in annual emissions from the Proposed Action is expected to exceed the de minimis threshold value for NO_X in Bexar County beginning in 2027; therefore, a formal GCR Determination would be required. The estimated total net change in emissions from the Proposed Action would also exceed the insignificance indicator for NO_X in Guadalupe County; however, given the large areal extent of aircraft emission being released throughout the county, the net change would not contribute to a violation of any Federal, state, or local air regulation. The estimated net change in annual emissions of all other criteria pollutants would not exceed the insignificance indicator for any other criteria pollutant in any of the ROIs. Table 3-3 in the Draft EIS shows the estimated annual emissions for Bexar County and Guadalupe County under the Proposed Action.

ES 4.1.3.2 Alternative 1

Alternative 1 would entail only scaling back the Proposed Action's T-7A flight operations to keep the annual net change in emissions below the 100 tpy GCR de minimis values for NOx and VOCs. Alternative 1 would have insignificant (de minimis) short- and long-term adverse impacts on air quality. Short-term (2022 to 2026) insignificant effects would be from fugitive dust and the use of heavy equipment during construction and additional personnel, heated space, and aircraft flight operations during the initial phasing of T-38C to T-7A aircraft. Long-term (2027 and beyond) insignificant effects would be from substantial changes in aircraft flight activities at

JBSA-Randolph, JBSA-Lackland, Seguin AAF, the MOAs, the MTRs, and R-6312. Emissions in Bexar County would not exceed the GCR de minimis values; therefore, a formal GCR Determination would not be required. Additionally, all emission at the Guadalupe County, Brady MOA, and MTRs ROIs are insignificant; therefore, this alternative would not contribute to a violation of any Federal, state, or local air regulation.

ES 4.1.3.3 Alternative 2

Alternative 2 would entail scaling up the Proposed Action's T-7A flight operations to approximately 15 percent greater than the Proposed Action starting in 2024. Alternative 2 would have minor, short-term, and significant long-term adverse effects on air quality. Short-term (2022 to 2026) minor effects would be from fugitive dust and the use of heavy equipment during construction and additional personnel, heated space, and aircraft flight operations during the initial phasing of T-38C to T-7A aircraft. Long-term (2027 and beyond), significant effects would be from substantial changes in aircraft flight activities at JBSA-Randolph, JBSA-Lackland, Seguin AAF, the MOAs, the MTRs, and R-6312. Alternative 2 would both (1) have NO_x emissions that exceed the de minimis value in the Bexar County nonattainment area; and (2) NO_x emissions that exceed the insignificance indicator in the Guadalupe County ROI (an attainment area); however, it would not contribute to a violation of any Federal, state, or local air regulation.

As with the Proposed Action, the total net change in annual emissions from Alternative 2 would exceed the de minimis value for NOx in Bexar County starting in 2027; therefore, a formal GCR Determination would be required before Alternative 2 could proceed.

Because Bexar County is currently designated as a marginal nonattainment area it does not currently have a SIP. Without a SIP there are limited GCR Determination options. Therefore, the only current GCR Determination options for Alternative 2 (as with the Proposed Action) is through emission mitigation and offsets of the action's worst-case year emissions (180.4 tpy). All other Determination paths require a SIP. Mitigation methods (reducing emissions at the location and time of the action) are currently not available at JBSA due the aggressive and successful past emission reduction efforts removing all JBSA's surplus emission reduction capacity. Offsets (formalized, local, legally enforceable, and permanent counterbalancing emission reductions) could be obtained through standard (purchased) Emission ERCs and Early ERCs.

As mentioned with the Proposed Action, the TCEQ is planning for the USEPA to reclassify the Bexar County ozone nonattainment area from marginal to moderate for the 2015 eight-hour ozone NAAQS, which will trigger a requirement for the state to develop a formal SIP.

ES 4.1.3.3.1 Alternative 3

Alternative 3 would entail scaling up the Proposed Action's T-7A flight operations to approximately 25 percent greater than the Proposed Action starting in 2028 with full capacity by 2031. Alternative 3 would have minor short-term and significant long-term adverse effects on air quality. Short-term (2022 to 2026) minor effects would be from fugitive dust and the use of heavy equipment during construction and additional personnel, heated space, and aircraft flight operations during the initial phasing of T-38C to T-7A aircraft. Long-term (2027 and beyond)

significant (greater than Alternative 2) effects would be from substantial changes in aircraft flight activities at JBSA-Randolph, JBSA-Lackland, Seguin AAF, the MOAs, the MTRs, and R-6312. Alternative 3 would both (1) have NOx emissions that exceed the de minimis values in the Bexar County nonattainment area; and (2) NOx emissions that exceed the insignificance indicator in the Guadalupe County ROI (an attainment area); however, it would not contribute to a violation of any Federal, state, or local air regulation.

As with the Proposed Action and Alternative 2, the total net change in annual emissions from Alternative 3 would exceed the de minimis value for NOx in Bexar County starting in 2027; therefore, a formal GCR Determination would be required before Alternative 3 could proceed.

Because Bexar County is currently designated as a marginal nonattainment area it does not currently have a SIP and therefore, without a SIP, there are limited GCR Determination options. The only current GCR Determination options for Alternative 2 (as with the Proposed Action) is through emission mitigation and offsets of the action's worst-case year emissions (197.8 tpy). All other Determination paths require a SIP. Mitigation methods (reducing emissions at the location and time of the action) are currently not available at JBSA due the aggressive and successful past emission reduction efforts removing all JBSA's surplus emission reduction capacity. Offsets (formalized, local, legally enforceable, and permanent counterbalancing emission reductions) could be obtained through standard (purchased) ERCs and Early ERCs.

As mentioned earlier, the TCEQ is now planning for the USEPA to reclassify the Bexar County ozone nonattainment area from marginal to moderate for the 2015 eight-hour ozone standard, which will trigger a requirement for the state to develop a formal SIP.

ES 4.1.3.4 No Action Alternative

The No Action Alternative would not result in impacts on air quality. No facility construction would occur, and there would be no changes in aircraft flight operations. Air quality conditions would remain unchanged.

ES 4.1.4 Mitigation, Offsets, and Adaptive Management

JBSA is implementing an Energy Savings Performance Contract (ESPC) involving emission reductions and is currently in the process of potentially acquiring approximately 27 tons of Early ERC credits that, if granted by TCEQ, could be applied to a GCR Applicability Analysis or future Determination. While the 27 tons of NOx would not allow the Proposed Action to proceed to its full proposed operational level after year 2026, the formal ACAM modeling shows the results would allow for an increase in T-7A flight operations above the levels in Alternative 1 (the *de minimis* alternative). It should be noted that the quantity of Early ERCs are only estimations at this point and have not been finalized by TCEQ. Even once the Early ERCs are finalized by TCEQ, it is only a possibility that they will be utilized for credit towards the T-7A Recapitalization impacts. Since the timeline of the Early ERCs being granted by TCEQ is currently unknown, it is a possibility that the use of the Early ERCs for the T-7A Recapitalization will not be necessary, or even possible. If and at the time that the Early ERCs are granted, JBSA will reserve the option to bank the credits for future unrelated Actions as well.

DAF has determined to engage an adaptive management approach to further develop analysis of air quality and noise impacts due to the operation of the new T-7A aircraft that are proposed

to replace the current T-38C aircraft at JBSA-Randolph. In short, the T-7A aircraft is still in production mode and undergoing testing with the manufacturer. DAF has contracted to purchase the T-7A aircraft but has not taken possession of any of these aircraft to date and therefore have not had the opportunity to fly the aircraft in a mode as it would be used for normal training purposes in the San Antonio area and airways. Therefore, the impacts developed and reported in this EIS for air quality and noise are based on reasonably foreseeable and currently known information with assumptions made for specific aircraft settings and operating parameters that have been identified as potentially changing with the development of a new aircraft. Realizing that the potential impacts reported for these two resources are significant, the DAF has determined that through an adaptive management strategy, the magnitude of impacts may be refined (if substantially different from the current best available information) once the T-7A aircraft is received into DAF inventory and engaged in the training curriculum. Any changes in operations evaluated and proposed for execution after the foregoing "adaptive management" is proposed for adoption must undergo a conformity applicability review, and if necessary, a general conformity determination to ensure compliance with CAA § 176(c) and 40 CFR Part 93.

ES 4.1.4.1.1 Adaptive Management Example

During the development of this Draft EIS, DAF has been considering specific actions that would potentially be further analyzed and assessed through an adaptive management strategy. One specific strategy is to further investigate the power settings and use of afterburners with the T-7A aircraft once they are flying in the training mission role at JBSA-Randolph. The strategy presented here is only an example of a potential action that will be further analyzed and is not intended as a proven solution to reduce impacts. In an effort to reduce the aircraft noise impacts presented in Section 3.2 of the EIS, DAF identified the potential reduction of T-7A power settings and use of afterburner as a strategy that merited further investigation. Although precise data and knowledge of how the aircraft might efficiently and safely operate with the reduced settings, DAF established that the first step was modeling the air quality and noise emissions with reduced power and afterburner settings, analyzing the preliminary results, and making a determination if this was a strategy that should be further explored. Noise experts from the Air Force Civil Engineer Center engaged with T-7A test pilots and discussed if a reduction was possible and, based on their experience, what a reasonable reduction might be to initiate the analysis. As a result of those discussions, DAF proceeded with modeling that would reduce the use of afterburner from 100 percent of all takeoffs to only 5 percent of all T-7A takeoffs from the JBSA-Randolph airfield. The preliminary analysis of the noise result for this specific adaptive management strategy is addressed in Section 3.2.4.3 of the EIS.

The air quality impacts modeled for the Proposed Action and alternatives were based on the current T-38C power settings and use of afterburner for reasons previously noted. The results of that modeling effort presented earlier in this section showed that for the Proposed Action (Preferred Alternative) and Alternatives 2 and 3, the NOx emissions would exceed the insignificance indicator of 100 tons per year in 2027 for each of the respective scenarios. Applying the reduction of using afterburner for 5 percent of T-7A takeoffs from JBSA-Randolph, the emissions were re-calculated for the Proposed Action level of operations and are compared to the calculated NOx emissions for the original Proposed Action levels of 100% afterburner use. The results indicate that reducing the use of afterburner for the same number of aircraft

operations would actually increase the NOx emissions. The increase would be due to an increase in the duration that the ascending aircraft are in the mixing zone (under 3,000 feet AGL) because they would be climbing slower and less steeply. Because it is unknown what other considerations and strategies might be considered in conjunction with the strategy to reduce afterburner use, it is not possible to draw any concrete conclusions as to whether this strategy could be further amended to seek an appropriate solution.

ES 4.2 Noise

ES 4.2.1 Definition of the Resource

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Noise is often generated by activities essential to a community's quality of life such as aircraft operations, construction, or vehicular traffic.

The sound pressure level noise metric describes steady noise levels, although very few noises are, in fact, constant; therefore, additional noise metrics have been developed to describe noise including:

- Maximum Sound Level (L_{max}) – L_{max} is the maximum sound level in decibels.
- Number of events above 75 dBA Lmax (NA75Lmax) –
- Time above 75 dBA (TA75Lmax) - TA75Lmax is the total time, normally in a given day, that exceeds 75 dBA.
- Sound Exposure Level (SEL) – SEL is a measure of the total energy of an acoustic event. It represents the level of a 1-second-long constant sound that would generate the same energy as the actual time-varying noise event such as an aircraft overflight. SEL provides a measure of the net effect of a single acoustic event, but it does not directly represent the sound level at any given time.
- Number of events above 90 dBA SEL (NA90SEL) – NA90SEL is the total number of events that exceed 90 dBA SEL. NA90SEL accounts for both events short in duration and loud, and events longer in duration, but not as loud. As such, NA90SEL correlates well with the probability of sleep awakenings in a given population exposed to intermittent aircraft overflights.
- Day-night Average Sound Level (DNL) – DNL is the average sound energy in a 24-hour period with an adjustment added to the nighttime levels. Due to the potential to be particularly intrusive, noise events occurring between 10:00 p.m. and 7:00 a.m. are assessed a 10 dB adjustment when calculating DNL. DNL is a useful descriptor for aircraft noise because: (1) it averages ongoing yet intermittent noise, and (2) it measures total sound energy over a 24-hour period. DNL provides a measure of the overall acoustical environment, but as with SEL, it does not directly represent the sound level at any given time. For well-distributed sound, L_{eq} is approximately 6.4 dBA lower than DNL.

- 24-Hour Equivalent Sound Level (Leq(24)) – Leq(24) is the average overall sound level for a 24-hour period. Leq(24) is equal to DNL for the same period without an adjustment for nighttime activities.

ES 4.2.2 Affected Environment

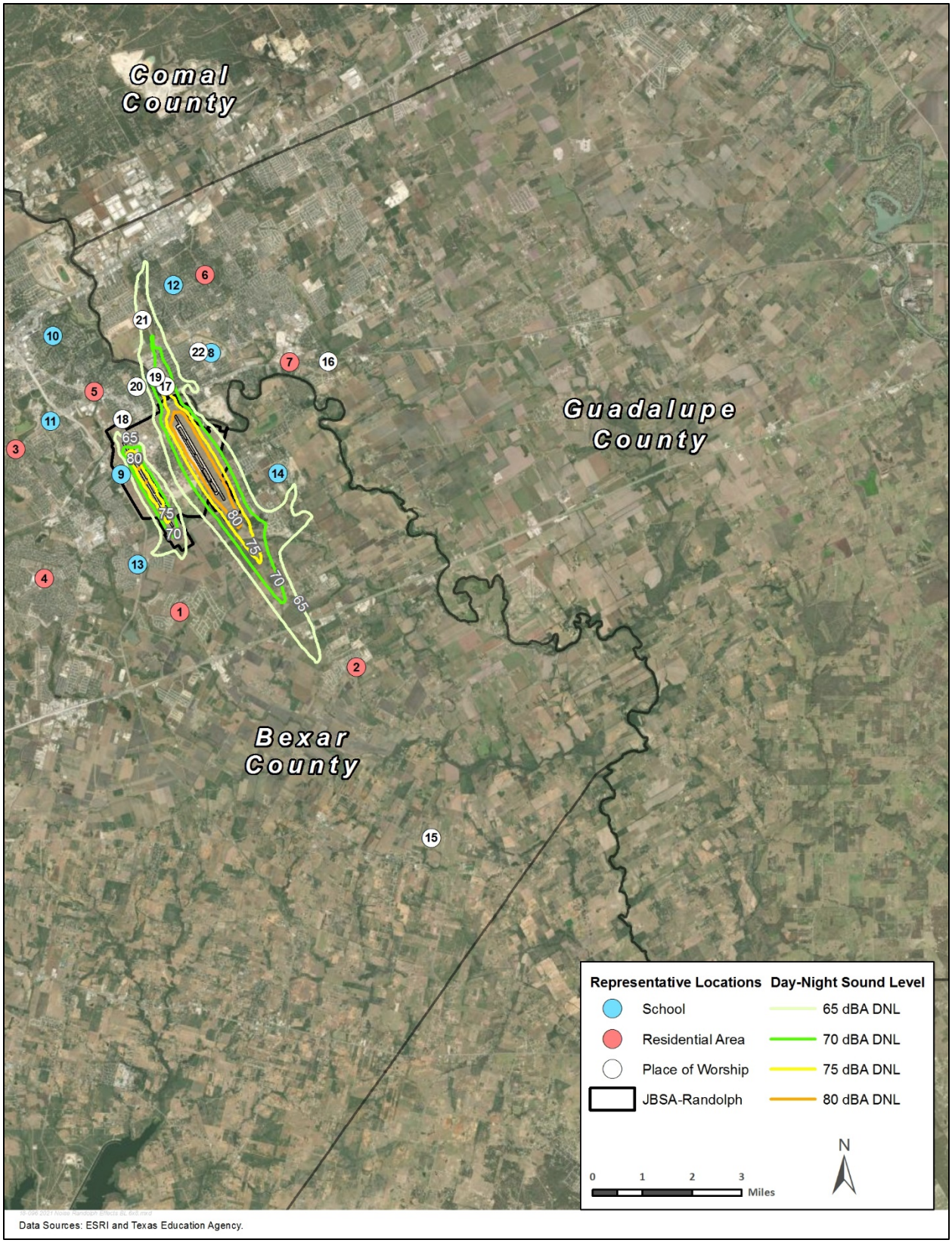
Figure 4-1 and **Figure 4-2** show the existing DNL noise contours plotted in 5 dB increments, ranging from 65 to 80-dBA DNL at JBSA-Randolph and Seguin AAF. The noise contours, as shown, depict 2017 operational conditions. There have been no substantial changes in operations or mission at the base since the noise contours were developed and have been carried forward as a comparative baseline to determine the level of effects under NEPA.

Within the Draft EIS are listed the existing overall sound levels (i.e., DNL) for 22 representative locations around JBSA-Randolph and nine around Seguin AAF. Three representative places of worship near JBSA-Randolph and one representative residential area near Seguin AAF are exposed to overall sound levels greater than 65 dBA DNL and are considered existing incompatible land uses.

Speech Interference. In general, individual overflights can interfere with communication on the ground, and in homes, schools or other buildings directly under their flight path. The threshold which aircraft noise begins to interfere with communication is 50 dBA indoors, and speech interference is often described in terms of NA75Lmax and TA75Lmax outdoors to account for a 25 dBA of noise attenuation provided by buildings such as houses and schools. The Draft EIS provides information regarding the number of individual T-38C overflights above 50 dBA which are loud enough to interrupt communication inside within the representative residential areas and schools.

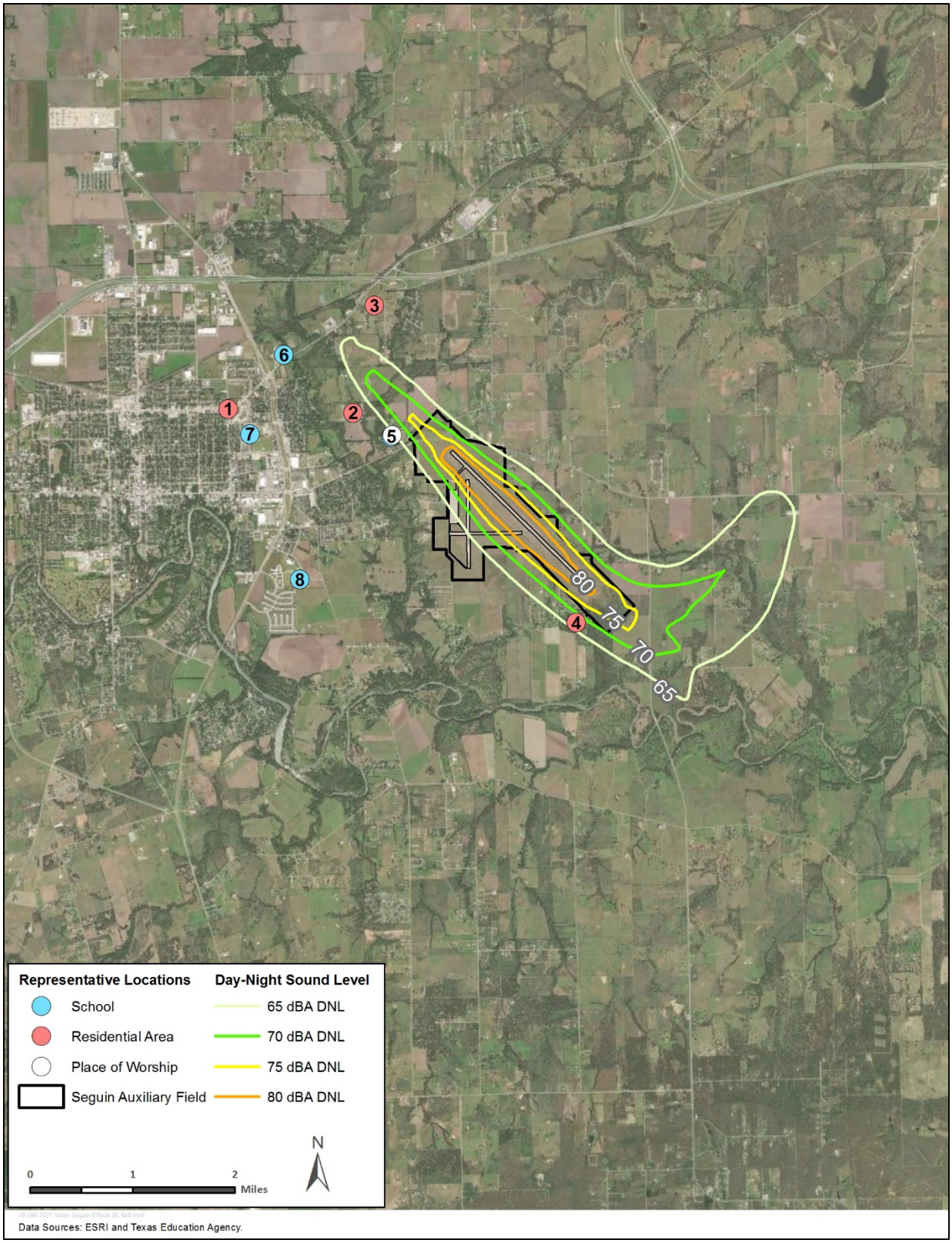
There are more than 40 schools within five miles of JBSA-Randolph, making classroom speech interference a particular concern; therefore, additional analysis was conducted to supplement the “number-of-events-above” analysis with a “time-above” assessment for representative schools. The maximum computed time loud enough to interfere with classroom communications under the existing T-38 operations is 4.7 minutes per school day at the Ray D. Corbett Junior High School.

Potential for Hearing Loss. Potential for Hearing Loss (PHL) applies to people living in high noise environments where they can experience long-term (40 years) hearing effects. The threshold for assessing PHL is Leq(24) (i.e., the average sound levels over a 24 hour period) greater than 80 dBA. The effect of PHL is denoted by the number of people subject to Noise Induced Potential Hearing Loss (NIPTS) within 1-dBA increments above 80 dBA Leq(24) (i.e., 80 to 81 dBA). There are currently no on- or off-base residences or individuals at JBSA-Randolph or Seguin AAF are exposed to Leq(24) levels greater than 80 dBA, and there is no potential for hearing loss.



Source: DAF 2020b

Figure 4-1. Noise Contours for JBSA-Randolph – Existing Conditions (2017)



Source: DAF 2020b

Figure 4-2. Noise Contours for Seguin AAF – Existing Conditions (2017)

ES 4.2.3 Environmental Consequences

This section discusses noise from construction, noise from aircraft, potential changes to land use compatibility, and potential noise effects to humans due to implementing the Proposed Action and the three action alternatives. Changes in noise would be considered significant if they would (1) lead to a violation of any federal, state, or local noise ordinance; (2) substantially increase areas of incompatible land use outside the installations; or (3) have the potential to cause permanent hearing loss to nearby residents.

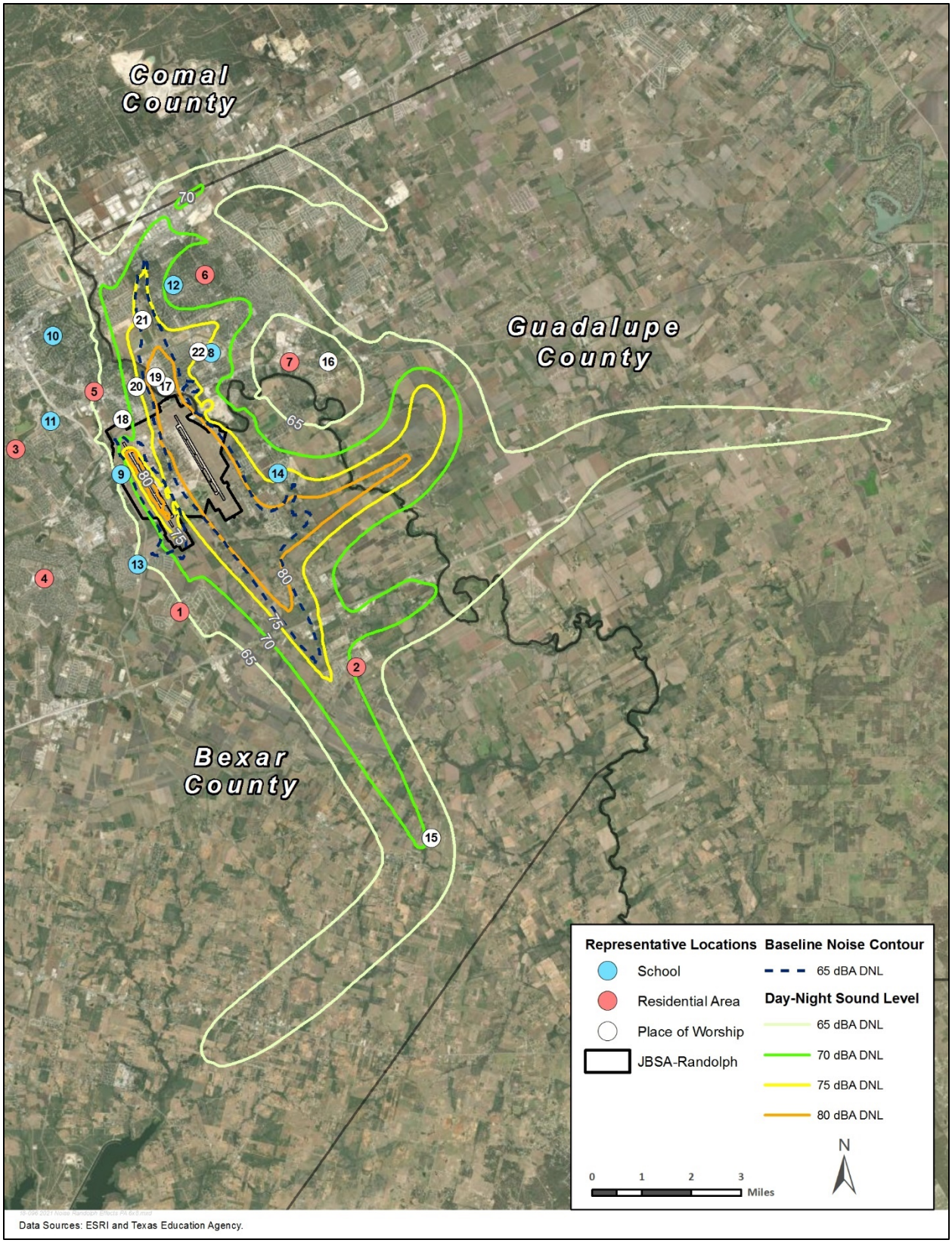
The noise contours developed in this EIS are based on currently available information. T-7A flight tracks, altitudes, and power settings were assumed to be the same as the T-38C operations. The T-7A aircraft has distinctly different operating characteristics than the T-38C, and as it becomes introduced to the installations, the DAF would determine the safest, most efficient, and least intrusive flight operations for T-7A training at JBSA-Randolph, Seguin AAF, and JBSA-Lackland.

ES 4.2.3.1 Proposed Action

The Proposed Action would have short-term, minor and long-term, significant, adverse effects on the noise environment. Short-term effects would be due to noise generated by heavy equipment during construction and demolition. Long-term effects would be due to the introduction of the louder T-7A aircraft, the increase in overall training and maintenance operations at JBSA-Randolph and Seguin AAF, and the introduction of operations between 10:00 p.m. and 7:00 a.m. Long-term changes in operational noise would substantially increase areas of incompatible land use on and adjacent to JBSA-Randolph and Seguin AAF. Due to the limited number of operations, changes in noise at JBSA-Lackland would be negligible.

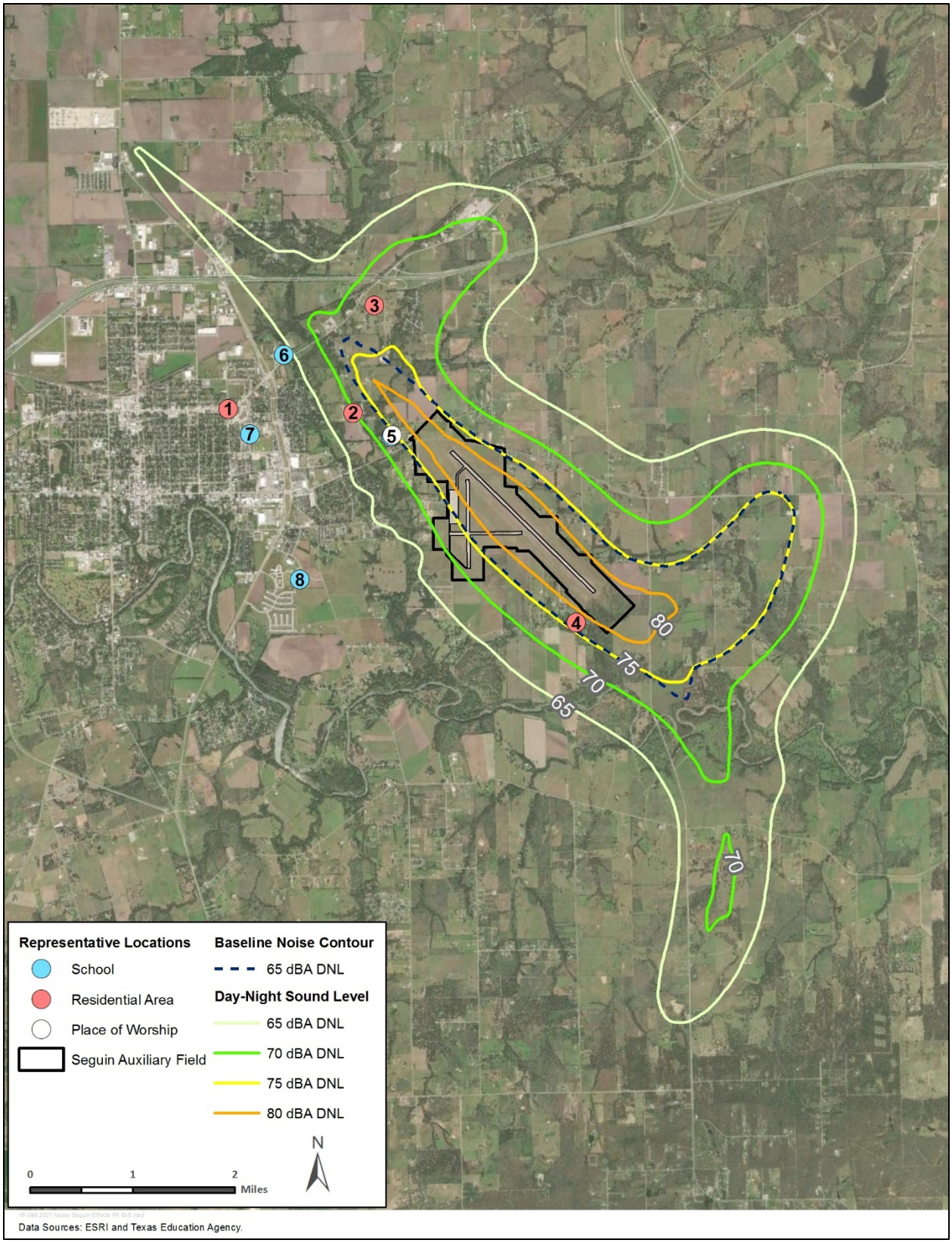
All construction and demolition activities in support of the Proposed Action would be within the JBSA-Randolph property boundary, collocated with other existing noise-compatible activities, and end with the facility construction and modification phase. There would be no construction or associated noise at Seguin AAF or JBSA-Lackland. Given the temporary nature of proposed construction and demolition activities, distance to off-base noise sensitive areas, and the existing noise environment, these effects would be minor.

Noise levels on and adjacent to JBSA-Randolph and Seguin AAF with the proposed T-7A aircraft were calculated based on full implementation of the Proposed Action in 2032. **Figure 4-3** and **Figure 4-4** show the modeled DNL noise contours with and without the T-7A conversion. Land acreage within noise levels 65-dBA DNL or greater at JBSA-Randolph would increase to 48,861 acres and 11,960 acres for Seguin AAF. The population affected in these same defined areas would increase to 61,830 and 2,862 for JBSA-Randolph and Seguin AAF, respectively. The levels of noise (i.e., 70-80 dBA DNL) would include individual overflights both loud and frequent enough to highly annoy 22 to 55% of individuals within these areas. Changes to the overall noise environment at and surrounding the airfield would be appreciable and clearly louder than existing conditions.



Source: DAF 2020

Figure 4-3. Noise Contours for JBSA-Randolph – Proposed Action



Source: DAF 2020

Figure 4-4. Noise Contours for Seguin AAF – Proposed Action

The amount of time when aircraft would be loud enough to interfere with classroom communication would increase in range to between 2 to 44 minutes for representative schools around JBSA-Randolph, and to between 2 to 7 minutes for representative schools around Seguin AAF. Other schools in the immediate area of the installations would likely fall within this range.

Sleep interference is another source of annoyance associated with louder low-altitude aircraft overflights. Sound levels for T-38C and T-7A operating near JBSA-Randolph would be higher than 90 dBA SEL, and a percentage of individuals directly under the flight paths of individual overflights would likely experience some amount of sleep interference.

ES 4.2.3.2 Alternative 1

Alternative 1 would have similar types of impacts as the Proposed Action but with less intensity due to the lower number of aircraft operations. **Figure 4-5** and **Figure 4-6** show the base-wide DNL noise contours for Alternative 1. Land acreage within the Alternative 1 noise contours 65 dBA DNL and greater totals 32,877 for JBSA-Randolph and 7,800 acres for Seguin AAF.

ES 4.2.3.3 Alternative 2

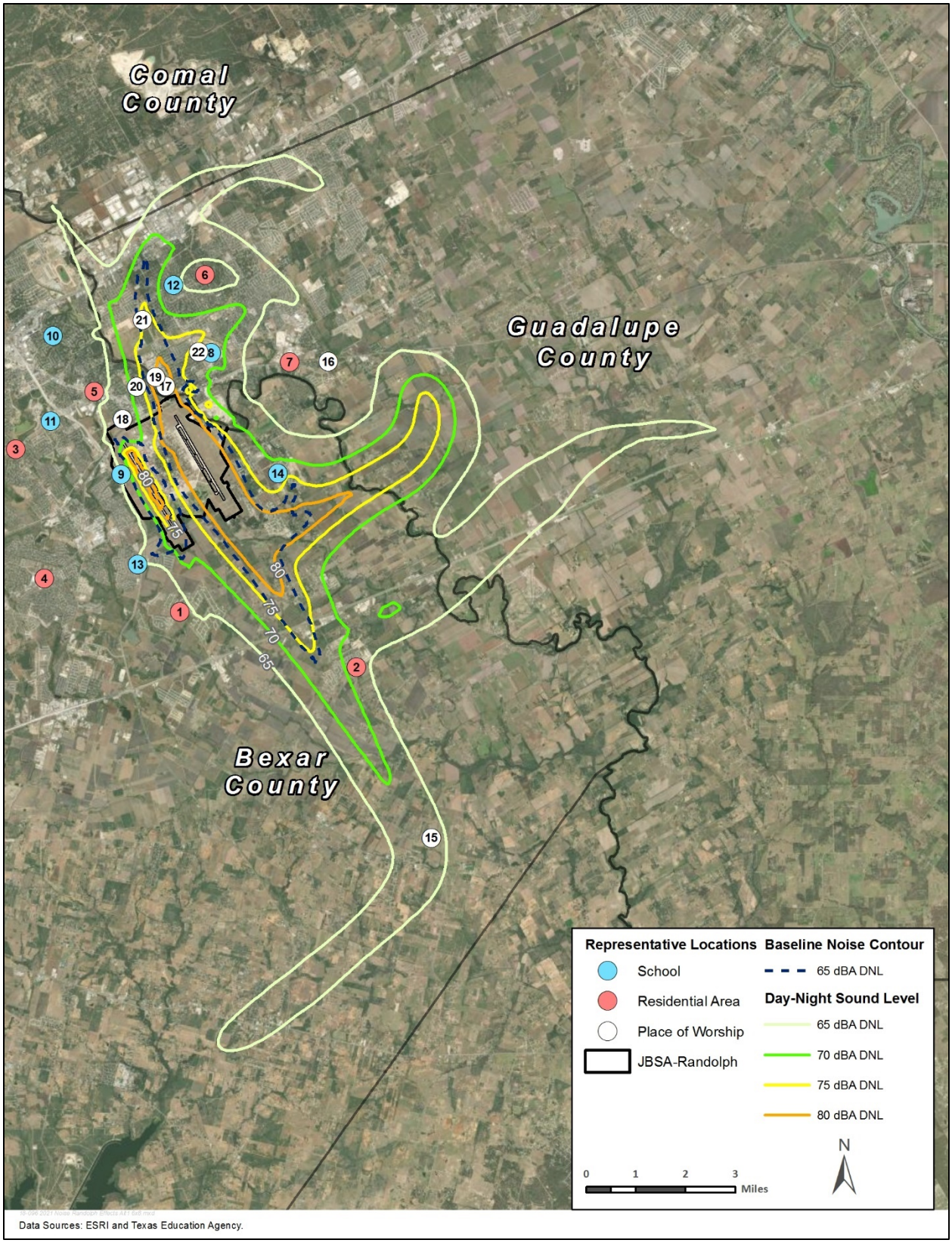
Alternative 2 would have similar types of impacts as the Proposed Action but with greater intensity due to the 15 percent increase in the number of aircraft operations. **Figure 4-7** and **Figure 4-8** show the base-wide DNL noise contours for Alternative 2. The 65, 70, 75, and 80 dBA DNL noise contours at JBSA-Randolph and Seguin AAF would expand appreciably in all directions when compared to the existing conditions. The land acreage within the Alternative 2 contours 65 dBA DNL and greater totals 51,775 for JBSA-Randolph and 12,938 acres for Seguin AAF.

ES 4.2.3.4 Alternative 3

Alternative 3 would have similar types of impacts as the Proposed Action but with greater intensity due to the 25 percent increase in the number of aircraft operations. **Figure 4-9** and **Figure 4-10** show the base-wide DNL noise contours with and without the T-7A conversion. The 65, 70, 75, and 80 dBA DNL noise contours at JBSA-Randolph and Seguin AAF would expand appreciably in all directions when compared to the existing conditions. The land acreage within the Alternative 3 contours 65 dBA DNL and greater totals 58,056 for JBSA-Randolph and 13,481 acres for Seguin AAF.

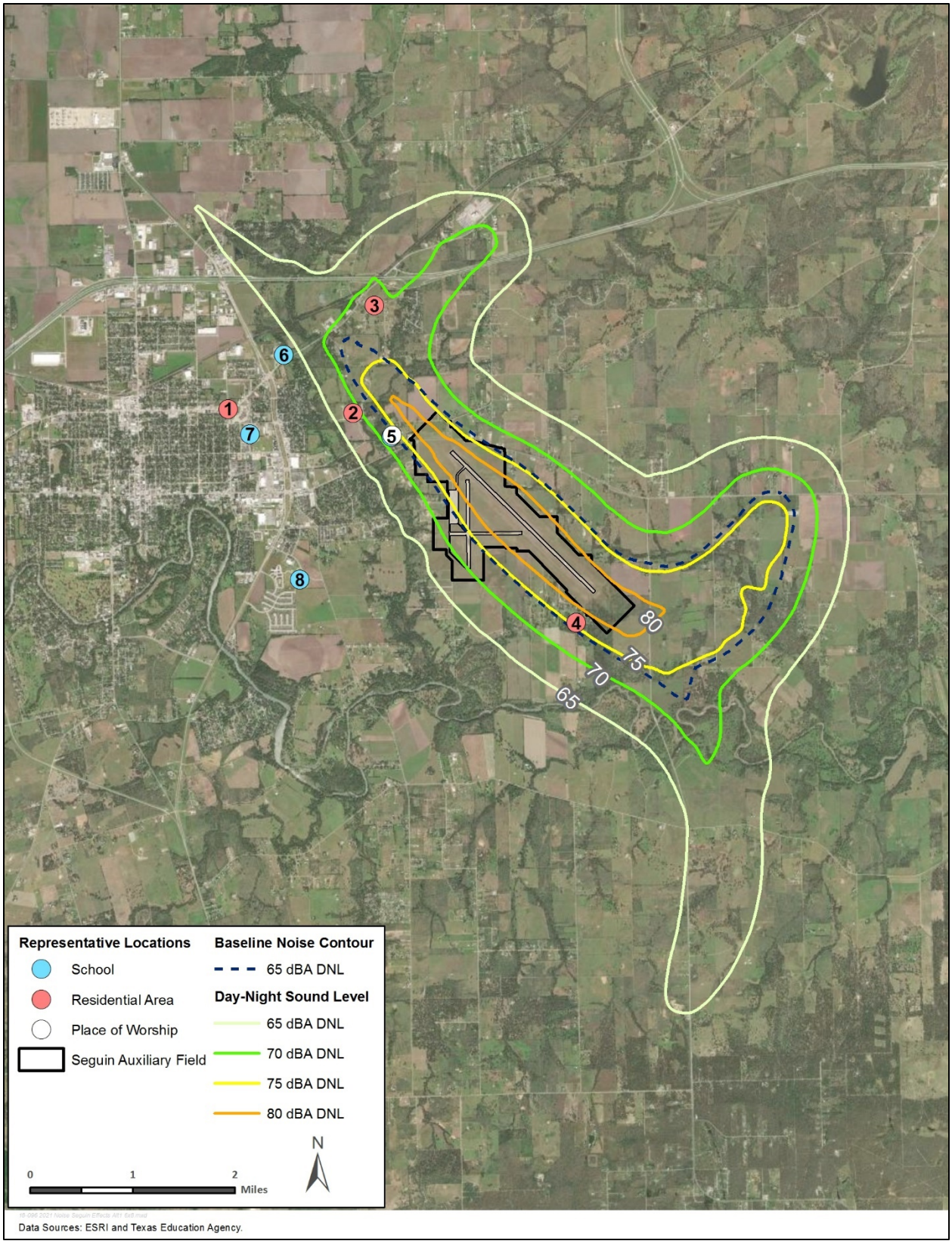
ES 4.2.3.5 No Action Alternative

The No Action Alternative would not result in impacts on the noise environment. No facility construction would occur, and there would be no changes in aircraft operations. Noise conditions would remain unchanged when compared to the existing conditions.



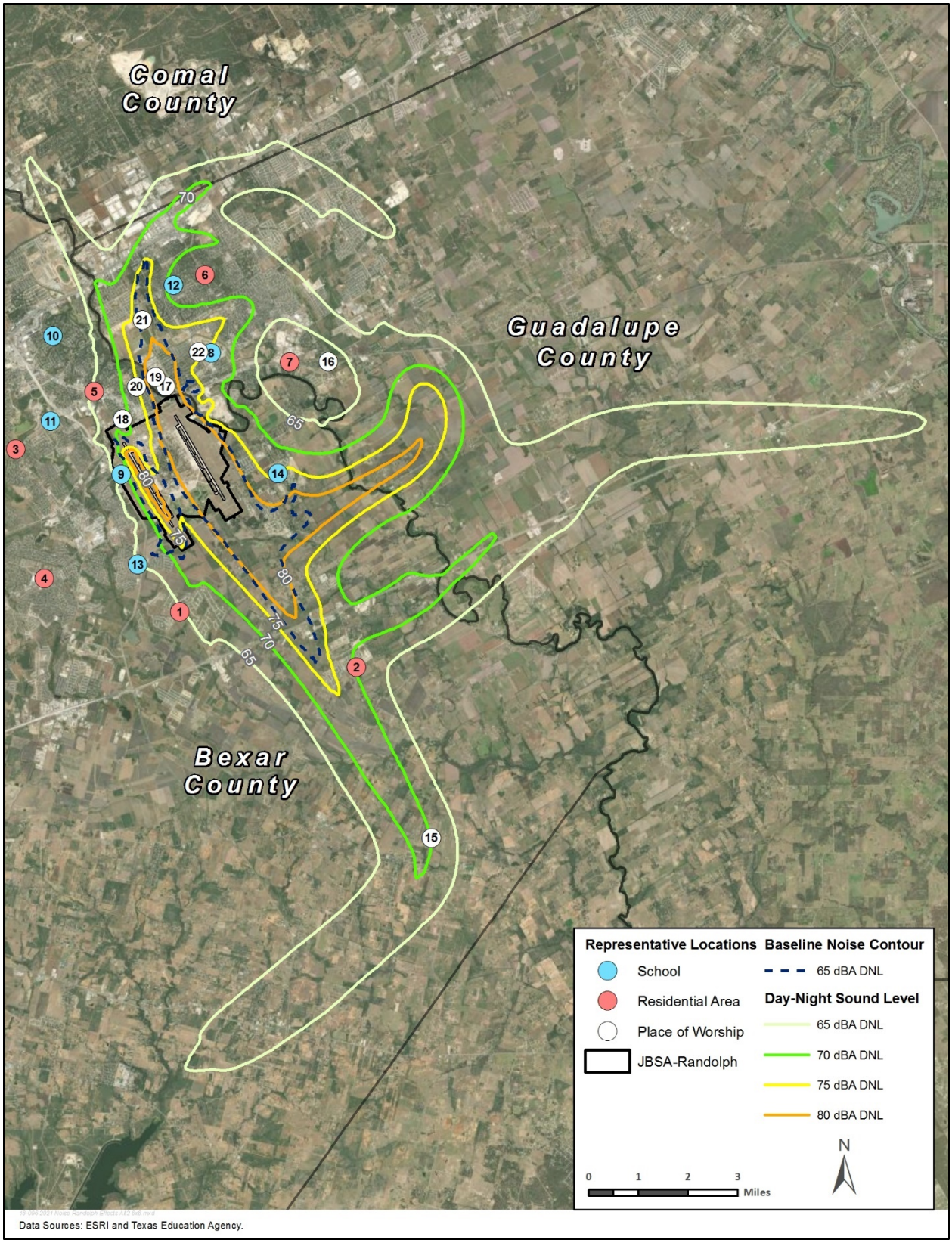
Source: DAF 2020

Figure 4-5. Noise Contours for JBSA-Randolph – Alternative 1



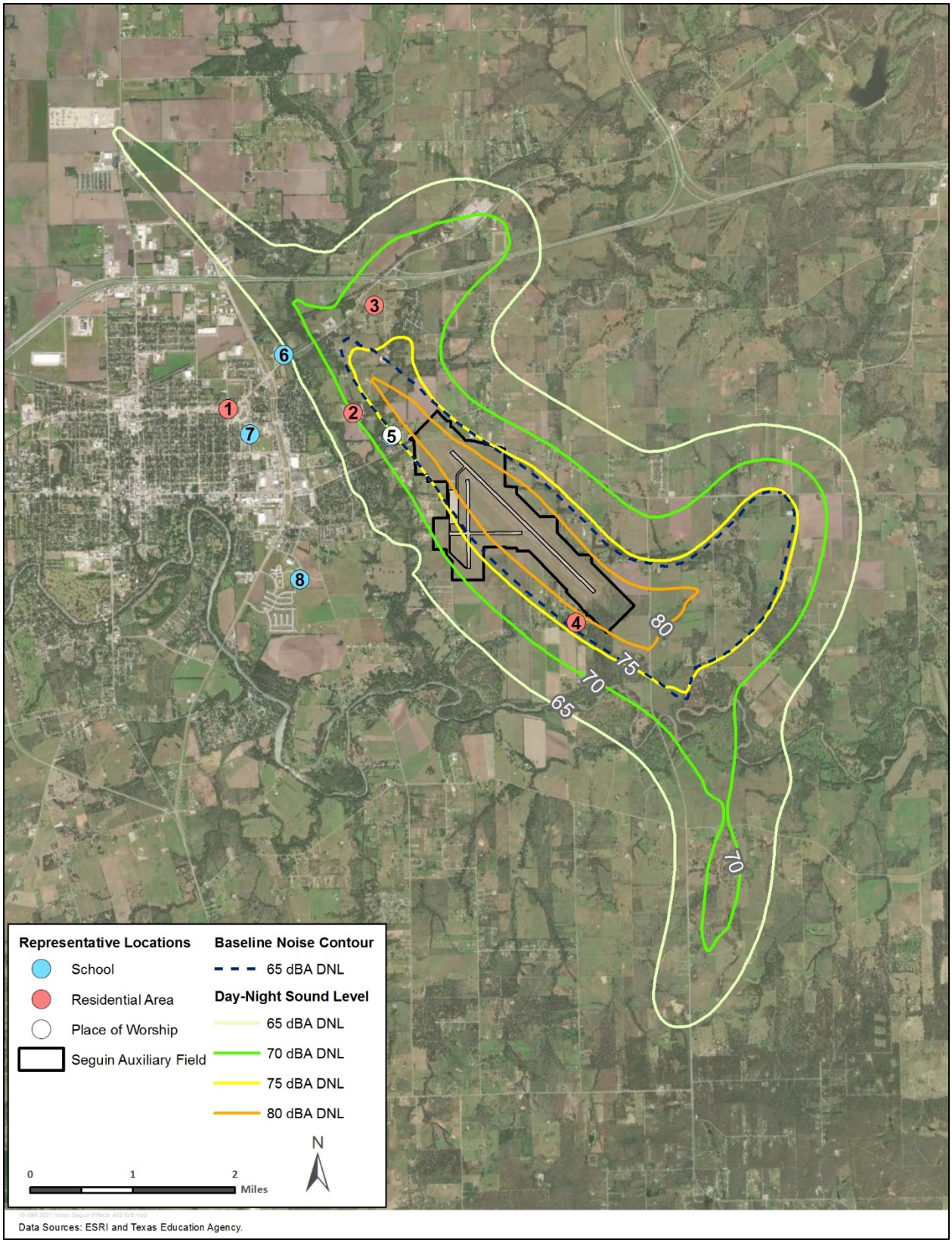
Source: DAF 2020

Figure 4-6. Noise Contours for Seguin AAF – Alternative 1



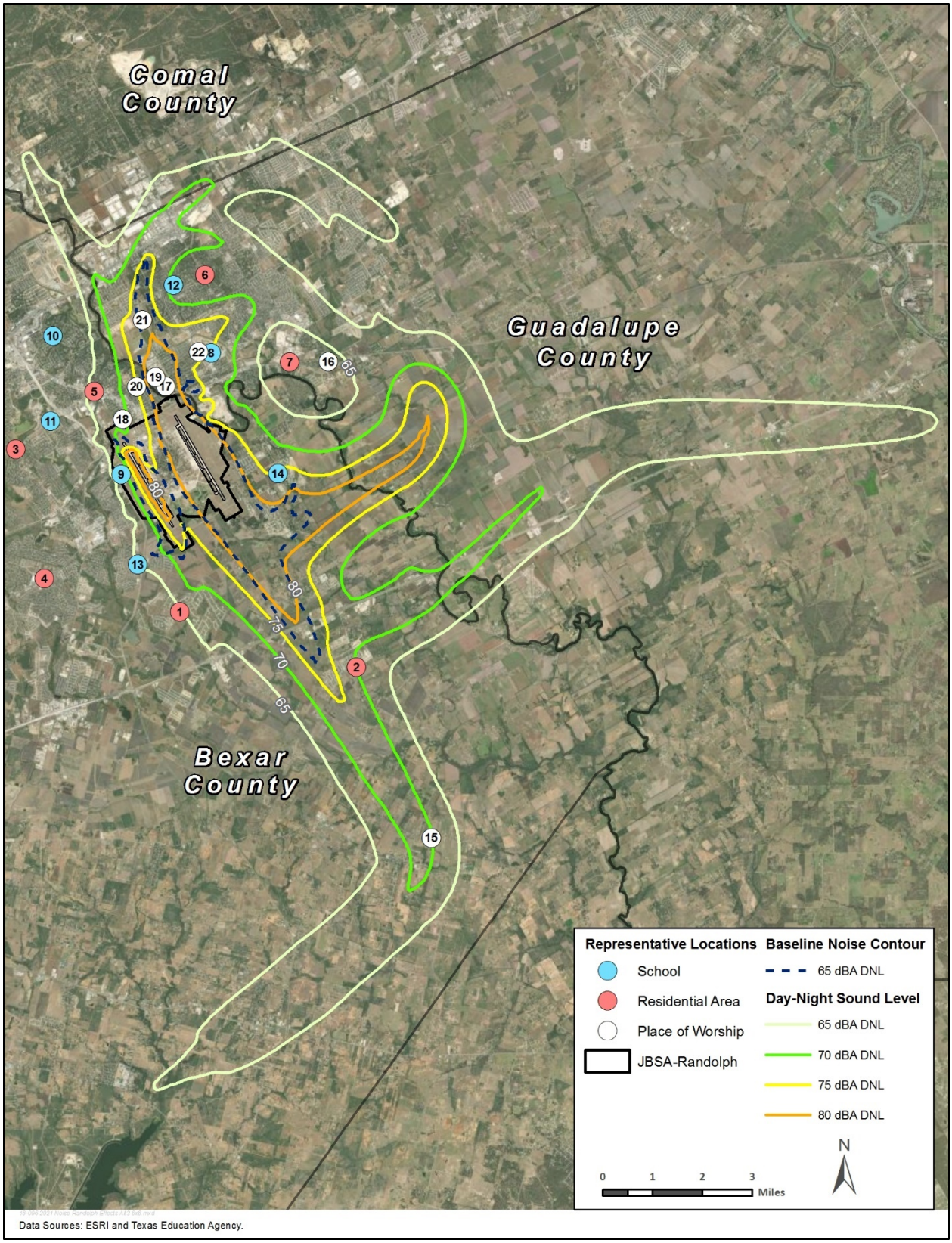
Source: DAF 2020

Figure 4-7. Noise Contours for JBSA-Randolph – Alternative 2



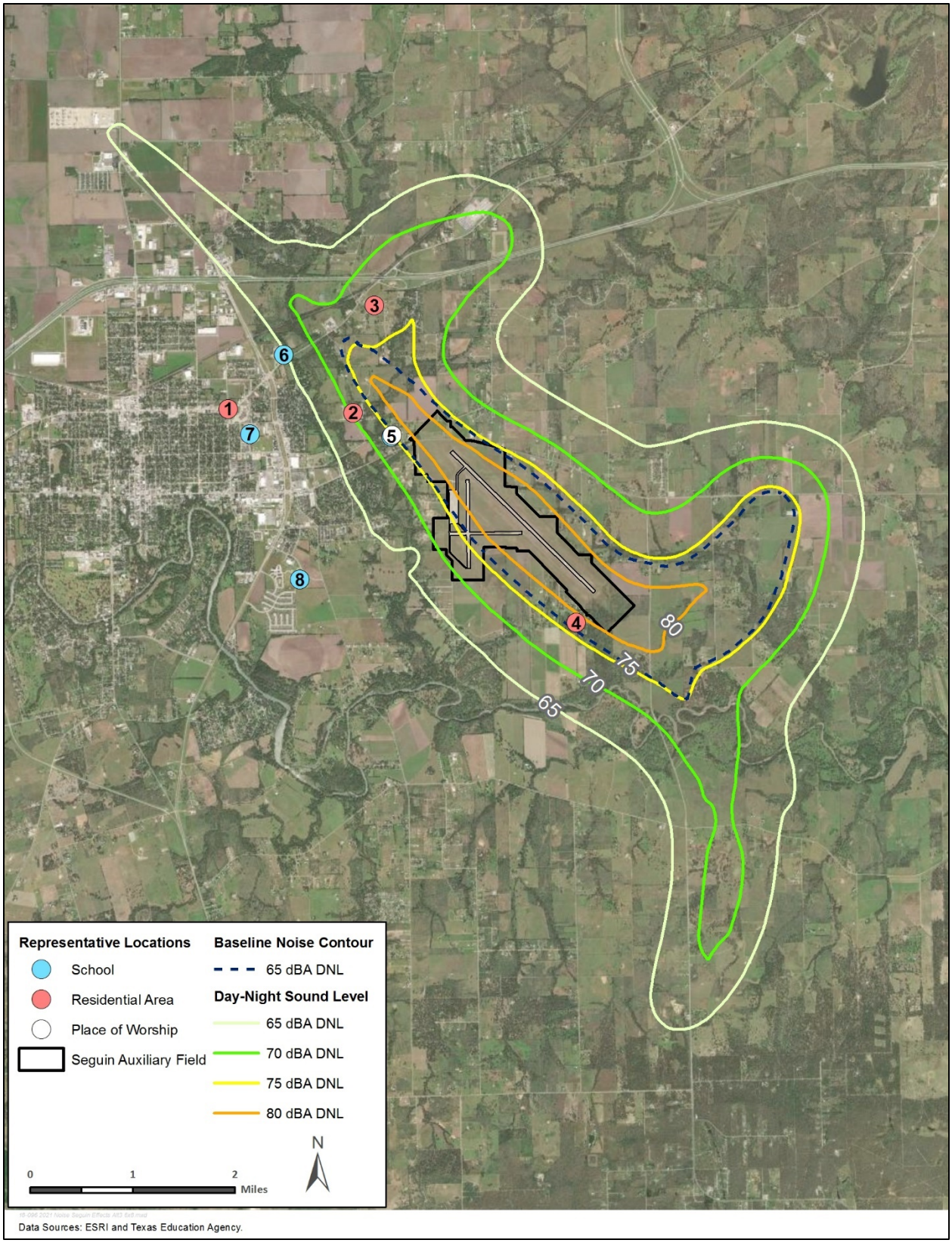
Source: DAF 2020

Figure 4-8. Noise Contours for Seguin AAF – Alternative 2



Source: DAF 2020

Figure 4-9. Noise Contours for JBSA-Randolph – Alternative 3



Source: DAF 2020

Figure 4-10. Noise Contours for Seguin AAF – Alternative 3

ES 4.2.4 Mitigation, Offsets, and Adaptive Management

ES 4.2.4.1 Mitigation

The Proposed Action and the three other action alternatives would all result in larger DNL noise contours and noise exposure, encompassing a larger land area around both JBSA-Randolph and Seguin AAF. These changes to the DNL contours may result in changes to land use recommendations. Therefore, the DAF will continue to work with Bexar and Guadalupe Counties, the City of Schertz, Universal City, Seguin, and other communities as needed to plan for compatible development, land use zoning, and building construction standards. Following a signed Record of Decision for the Proposed Action, the DAF commits to pursue the following measures:

- Prepare an AICUZ Update to address any increases of land area within the greater than 65 dBA DNL noise contours for both JBSA-Randolph and Seguin AAF.
- Fully implement the noise abatement strategies outlined in the 2015 JLUS.
- Coordinate with state and local agencies on compatible land use and potential encroachment concerns inside and outside of the DNL footprint (i.e., large-scale developments, transportation projects that could encourage development, or tall structures such as cell towers that could penetrate airfield imaginary surfaces.
- Encourage municipalities to promote the highest and best use of land by updating local zoning ordinances and building construction standards, especially for high-noise areas.
- Encourage municipalities to adopt legislative initiatives to acquire interest in developed properties in order to curb and mitigate encroachment near military installations and to protect the public from noise exposure and accident potential.

ES 4.2.4.2 Adaptive Management

DAF is applying an Adaptive Management strategy to further analyze, monitor, and update potential impacts for air quality and noise resources. Once the DAF begins to receive T-7A aircraft into its inventory and initiate training with this aircraft at JBSA-Randolph, better defined training operation parameters will be established for this particular aircraft and DAF will be able to better define the impacts with greater accuracy.

ES 4.3 Biological Resources

ES 4.3.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats (e.g., grasslands, forests, wetlands) in which they exist. Protected and sensitive biological resources include Endangered Species Act (ESA) listed species (threatened or endangered) and those proposed for ESA-listing as designated by the U.S. Fish and Wildlife Service (USFWS) (terrestrial and freshwater organisms) and migratory birds. Migratory birds are protected species under the MBTA. Sensitive habitats include those areas designated or proposed by USFWS as critical habitat protected by the ESA and as sensitive ecological areas designated by state or other federal rulings. Sensitive habitats also include wetlands, plant communities that

are unusual or limited in distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer and winter habitats).

ES 4.3.2 Affected Environment

Most of JBSA-Randolph has been developed with buildings, streets, and runways to support the missions of the installation; very little native vegetation remains at JBSA-Randolph and little of the installation is undeveloped. Most vegetative cover consists of nonnative grass species. Wetlands do not occur within or near the areas affected by the Proposed Action and alternatives at any of these three JBSA installations.

The highly developed nature of JBSA-Randolph and JBSA-Lackland results in limited habitat to support wildlife species. Within the housing area of JBSA-Randolph, there are large trees that provide habitat for various birds and small mammal species. Riparian obligate species, including wading birds and waterfowl, frequent Woman Hollering Creek and the artificial ponds at the Randolph Oaks Golf Course located on the southern portion of the installation. Seguin AAF has a limited potential for biological diversity as most of the area is maintained in accordance with airfield standards.

Bat species found throughout JBSA include cave myotis (*Myotis velifer*), tri-colored bat (*Perimyotis subflavus*), and Mexican free-tail bats (*Tadarida brasiliensis*). Mexican free-tail bats have been observed foraging throughout JBSA; however, this species typically roosts in large colonies, up to the millions, and no caves large enough to support a colony have been found on JBSA (JBSA 2020). There are two known bat roosting locations in the San Antonio area—the Bracken Cave Preserve and Camden Street Bridge—as well as additional unknown roosting sites. These two locations contain some of the largest Mexican free-tailed bat roosting colonies in the state. Bats occur at these locations during the summer months (i.e., April to early October) (TPWD 2019). The Bracken Cave Preserve, with over 20 million bats roosting, is located approximately 10 miles north-northwest of the JBSA-Randolph airfield. Mexican free-tailed bats fly at altitudes around 2.0 miles (3,300 meters), which is the highest of all bats, and can travel up to 31 miles away from the roosting site and cover more than 100 miles per night. Mexican free-tailed bats spend around 60 percent of their active time foraging at heights of 20 to 49 feet (6 to 15 meters).

The JBSA INRMP and USFWS Information for Planning and Consultation (IPaC) System reports for JBSA-Randolph, JBSA-Lackland, Seguin AAF, and the airspace areas (i.e., McMullen Range, Brady MOAs, Randolph MOAs, VR140, VR143, VF156, VR1120, IR123, IR148, and IR149) were reviewed to determine if any federally listed, proposed, or candidate species or their habitats could potentially occur in the vicinity of the three JBSA installations and airspace areas. There are 40 federally listed species and 4 candidate species that could be listed within the timeframe of the Proposed Action that have the potential to occur on JBSA-Randolph, JBSA-Lackland, Seguin AAF, or the airspace areas. The potential for occurrence within the JBSA installations and airspace areas is based on the USFWS IPaC reports, INRMP, and other available resources as cited within the text below. None of the 44 identified species have been reported or observed on JBSA-Randolph, JBSA-Lackland, or Seguin AAF.

Although many of the species listed in the IPaC reports have designated critical habitat, none of the designations occur within or near JBSA-Randolph, JBSA-Lackland, Seguin AAF, or the airspace areas; therefore, critical habitat is not analyzed further in this EIS.

The TPWD manages state-listed threatened and endangered and sensitive species in Texas. No state sensitive species have been documented on JBSA-Randolph or Seguin AAF.

ES 4.3.3 Environmental Consequences

The biological resources analysis discusses impacts from construction and aircraft operations on vegetation, wildlife, and protected and sensitive species from the Proposed Action and alternatives. The level of impacts is based on (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to the proposed activities, and (4) the duration of ecological ramifications. Impacts on biological resources would be considered significant if species or special habitats would be adversely affected over large areas, or disturbances would cause reductions in population size or distribution of a species of special concern.

ES 4.3.3.1 Proposed Action

Some of the MILCON and FSRM projects would require the temporary or permanent removal of vegetation, which would result in short- and long-term, negligible, adverse impacts on vegetation at JBSA-Randolph. No impacts on vegetation would occur at JBSA-Lackland and Seguin AAF because no ground disturbance would occur at these JBSA installations. Likewise, no impacts on vegetation beneath the airspace areas would occur. Short- and long-term, negligible, adverse impacts on wildlife at JBSA-Randolph would occur from construction of the MILCON and FSRM projects. Wildlife that could occur near the project sites would temporarily avoid the sites during construction due to intermittent increases in noise from heavy equipment. As a result, direct injury to individuals would be unlikely.

In accordance with the JBSA Bird/Wildlife Aircraft Strike Hazard (BASH) program, protection of wildlife during construction, including clearing of vegetation, including trees, would be conducted with a focus on habitat reduction, deterrent measures, and depredation avoidance

Long-term, minor, adverse impacts on wildlife may occur from increased aircraft operations during the T-38C to T-7A transition period and at full T-7A implementation and with the introduction of nighttime T-7A operations at JBSA-Randolph and JBSA-Lackland. Increased aircraft operations would increase the risk of bird strikes. To minimize the potential for bird strikes, DAF would update their BASH Plan to include the higher intensity of aircraft operations at all three JBSA installations.

Long-term, direct, adverse impacts on bat species would occur from increased aircraft operations during the T-38C to T-7A transition period and at full T-7A implementation and with the introduction of nighttime T-7A operations at JBSA-Randolph. DAF data collected regarding bat strikes at JBSA-Randolph on T-38s in 1967 found that 11 percent of flights between dusk and dawn had a wildlife strike during August 1967. Based on historical data, the number of proposed nighttime aircraft operations, and the location and range of bats in the vicinity, there

would likely be an increase in bat strikes from the proposed increase in nighttime operations. Flights taking off and landing at dusk could strike bats that are leaving the roost.

The Proposed Action would have no effect on all 44 of the federally listed species on JBSA-Randolph, JBSA-Lackland, Seguin AAF, and the airspace areas.

ES 4.3.3.2 Alternative 1

Impacts on biological resources from fewer T-7A aircraft and T-7A operations that are at a lower intensity than the Proposed Action (beginning in 2027) would be slightly less than those described for the Proposed Action.

ES 4.3.3.3 Alternative 2

Impacts on biological resources from T-7A operations that are 15 percent greater than the Proposed Action would be slightly greater than those described for the Proposed Action. The increase in operations would slightly increase the potential for BASH incidents at all three JBSA installations as compared to the Proposed Action. Similar methods as described for Proposed Action would be implemented to minimize the potential for bird and bat strikes.

ES 4.3.3.4 Alternative 3

Impacts on biological resources from T-7A operations that are 25 percent greater than the Proposed Action would be slightly greater than those described for the Proposed Action and Alternative 2. The increase in operations would slightly increase the potential for BASH incidents at all three JBSA installations as compared to the Proposed Action and Alternative 2. Similar methods as described for the Proposed Action would be implemented to minimize the potential for bird and bat strikes.

ES 4.3.3.5 No Action Alternative

The No Action Alternative would not contribute to new or additional impacts on biological resources. No facility construction would occur, and there would be no changes in aircraft operations. No vegetation removal would occur, and no impacts on wildlife, including protected and sensitive species, would occur. Biological resources conditions at JBSA-Randolph, JBSA-Lackland, and Seguin AAF would remain unchanged when compared to the existing conditions.

ES 4.4 Cultural Resources

ES 4.4.1 Definition of the Resource

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes.

For this undertaking, the direct APE is defined as all buildings proposed for interior and exterior alteration, including a 50-foot buffer around those buildings to account for construction staging; all areas of new construction; all landscape features such as the existing ball field, tennis court, and taxi lanes proposed for alteration; and the location of the proposed ball field. The indirect APE is an area 0.25 miles in radius centered around the GBTS facility where four 15-foot-tall antennae would be located on top of the building. No changes to personnel numbers, buildings, structures, objects, or sites would occur at JBSA-Lackland and Seguin AAF.

ES 4.4.2 Affected Environment

No archaeological sites have been identified at JBSA-Randolph. Architectural surveys have resulted in the identification of several historic properties, including the Randolph Field NHLD, which was listed in the NRHP in 1996 and designated a National Historic Landmark in 2001. The district is composed of 350 contributing resources and 47 non-contributing resources Of the historic properties at JBSA-Randolph, ten are located within the APE including Randolph Field NHLD and nine contributing resources located within the district.

Twelve federally recognized tribes have an expressed or potential interest in cultural resources at JBSA and the airspace areas. These tribes are the Absentee-Shawnee Tribe of Indians of Oklahoma, Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Apache Tribe of Oklahoma, Caddo Nation of Oklahoma, Comanche Nation, Coushatta Tribe of Louisiana, Delaware Nation, the Mescalero Apache Tribe of the Mescalero Reservation, Osage Nation, the Tonkawa Tribe of Indians of Oklahoma, and the Wichita and Affiliated Tribes. DAF consults with these tribes on issues related to cultural resource management, the unanticipated discovery of human remains and cultural items under the Native American Graves Protection and Repatriation Act, and on project-specific effects under Section 106 of the NHPA. To date, these tribes have not identified any sacred sites or traditional cultural properties relevant to DAF. DAF has invited these tribes to consult on the Proposed Action and alternatives.

ES 4.4.3 Environmental Consequences

Proposed Action and alternatives would result in an “adverse effect” on historic properties and must avoid, minimize, or mitigate such effects if they would occur. For the purposes of Section 106, an adverse effect is one that changes elements or characteristics of a historic property that make the property eligible for listing in the NRHP.

ES 4.4.3.1 Proposed Action

Flight training would have no potential to impact historic properties. A change to personnel numbers at JBSA-Randolph also would have no potential to impact historic properties. The only aspects of the Proposed Action with potential to impact historic properties are the MILCON and FSRM projects proposed for JBSA-Randolph.

Nine of the 19 MILCON and FSRM projects would have no potential to impact cultural resources as they occur outside of the Randolph Field NHLD and include buildings, structures, or sites that have been previously determined not eligible for NRHP listing or were constructed after 1990 and have not reached the threshold for NRHP evaluation. The remaining ten MILCON and FSRM projects have the potential to impact cultural resources because they are located within the Randolph Field NHLD and the district is a historic property. Of those ten projects, six would occur within the interior of buildings located in the Randolph Field NHLD (with no impact to character-defining interior features) and would have no effect on contributing resources within the district or the NHLD itself. The remaining four projects would include exterior alteration to one NHLD-contributing hangar, repainting of the non-contributing taxi lanes, and the construction of the GBTS and MTS facilities within recreation areas that do not contribute to the NHLD.

Though the MTS and GBTS facilities would be visible within the setting of the NHLD, neither facility would require alteration to the overall facility plan; the non-historic recreation features to be removed were not part of original plan; the roadway layout would not change; the tree-lined boulevards or historic landscaped open spaces would not change; and the placement of pivotal buildings would remain. Thus, though the MTS and GBTS facilities would be visible within the setting of the NHLD, the overall effect to the setting is recommended as non-adverse as there would be no change to elements or characteristics of the historic property (i.e., the Randolph Field NHLD) that make it eligible for listing in the NRHP (i.e., contributing buildings or structures, the roadway network, contributing open spaces, or the tree-line streets).

ES 4.4.3.2 Alternative 1

Impacts on cultural resources from fewer T-7A aircraft and T-7A operations that are at a lower intensity than the Proposed Action (beginning in 2027) would be identical to those described for the Proposed Action. Like the Proposed Action, a change in the number of aircraft and flight operations at any JBSA site or established airspace areas would have no potential to impact historic properties. Identical impacts on historic properties would occur from installation of only 52 T-7A shelters (rather than 65 shelters under the Proposed Action) and a different interior design for the GBTS facility. Thus, like the Proposed Action, no adverse effect would occur as a result of Alternative 1.

ES 4.4.3.3 Alternative 2

Impacts on cultural resources from T-7A operations that are 15 percent greater than the Proposed Action would be identical to those described for the Proposed Action. A 15 percent increase in flight operations at any JBSA site would have no potential to impact historic properties. Thus, like the Proposed Action, no adverse effect would occur from Alternative 2.

ES 4.4.3.4 Alternative 3

Impacts on cultural resources from T-7A operations that are 25 percent greater than the Proposed Action would be identical to those described for the Proposed Action. A 25 percent increase in flight operations at any JBSA site would have no potential to impact historic properties. Thus, like the Proposed Action, no adverse effect would occur from Alternative 3.

ES 4.4.3.5 No Action Alternative

The No Action Alternative would not impact historic properties. No facility construction would occur, and there would be no changes in aircraft operations. Cultural resources at JBSA-Randolph, JBSA-Lackland, and Seguin AAF would remain unchanged when compared to the existing conditions.

ES 4.5 Land Use

ES 4.5.1 Definition of the Resource

Land use refers to the human use or modification of lands for various purposes and the management of those uses. Land use classifications refer to real property descriptions that indicate either natural conditions or the types of human activity occurring on a land parcel.

ES 4.5.2 Affected Environment

Installation Land Use. JBSA completed a comprehensive IDP in 2018 aligning the planning vision of JBSA with the priorities of higher-level command elements to achieve both short- and long-term sustainability of the installation (JBSA 2018a).

Future land use objectives for the Support Services Planning District and Flight Operations Planning District primarily involve relocation of sixteen incompatible properties within the CZ. Implementation of those land use changes will require redevelopment of parcels and vacant areas and redistribution of compatible land uses within the Support Services Planning District.

A JBSA Regional Compatible Use Plan (RCUP) was completed in March 2021 involving all JBSA installations, county governments, and a diverse group of community stakeholder organizations. The RCUP resulted from a community-driven cooperative and strategic planning process designed to increase public awareness of military missions in the greater San Antonio area and promote compatible land use management and regional economic opportunity, while preserving military readiness and defense capabilities. The plan advanced results of separate Joint Land Use Studies for JBSA-Lackland and JBSA-Randolph (among others) to integrate recommendations across a common and more efficient comprehensive regional framework.

The counties of Bexar and Guadalupe and regional cities, in cooperation with DAF, completed a JBSA-Randolph JLUS in 2015 ensure future compatibility between increasing development proximate to the installation and the continuation of the military mission. Results of the JLUS identified the following recommendations related to land use encroachment and airspace noise to be addressed by the study partners:

- Amend unified development codes and zoning ordinances to establish heigh limits and siting criteria for alternative energy development

ES 4.5.3 Environmental Consequences

Land use impacts would be considered significant if the effect was inconsistent or noncompliant with land use management plans or policies, precluded the viability of existing land use, precluded continued use or occupation of an area, was incompatible with adjacent land use to the extent public health or safety is threatened, or conflicted with planning criteria established to ensure the safety and protection of human life.

ES 4.5.3.1 Proposed Action

Installation Land Use. The Proposed Action would involve physical on-base construction and land use changes at JBSA-Randolph for construction and operation of identified MILCON and FSRM. No land use effects would occur at either JBSA-Lackland or Seguin AAF. The MILCON and FSRM projects at JBSA-Randolph would be largely compatible and consistent with applicable land use plans and regulations and would have no significant impacts on this resource.

No changes in airspace configurations or boundaries are proposed; therefore, the Proposed Action would meet FAA regulations specific to minimum altitude and avoidance distances. The CZs and APZs for JBSA-Randolph, JBSA-Lackland, and Seguin AAF would remain unchanged.

However, the primary effect of project implementation on land use would be associated with noise generated by T-7A aircraft operations as the T-7A aircraft feature substantially louder operating characteristics in comparison with T-38C aircraft. Acreage that would be within the 65 and higher dBA DNL contour is discussed within the noise resources section.

ES 4.5.3.2 Alternative 1

Land use and airspace effects from fewer T-7A aircraft and T-7A operations for Alternative 1 are at a lower intensity than the Proposed Action (beginning in 2027) would be slightly less than the area of incompatibility due to noise described for the Proposed Action

Analysis of aircraft noise shows that an additional 26,572 people live within the 65-70 DNL and 9,998 people within the 70-75 DNL for JBSA-Randolph under the Alternative 1. At Seguin, 821 people would be within the 65-70 DNL and 448 people within the 70-75 DNL

ES 4.5.3.3 Alternative 2

Land use and airspace effects from T-7A operations under Alternative 2 that are 15 percent greater than the Proposed Action would be slightly greater than those described for the Proposed Action.

Analysis of aircraft noise shows that an additional 33,612 people live within the 65-70 DNL and 13,413 people within the 70-75 DNL for JBSA-Randolph under the Alternative 2. At Seguin, 1,583 people would be within the 65-70 DNL and 565 people within the 70-75 DNL.

ES 4.5.3.4 Alternative 3

Land use and airspace effects from T-7A operations under Alternative 3 that are 25 percent greater than the Proposed Action would be slightly greater than those described for the Proposed Action.

Analysis of aircraft noise shows that an additional 33,917 people live within the 65-70 DNL and 14,126 people within the 70-75 DNL for JBSA-Randolph under the Alternative 3. At Seguin, 1,749 people would be within the 65-70 DNL and 589 people within the 70-75 DNL.

ES 4.5.3.5 No Action Alternative

The No Action Alternative would not result in any changes in land use, either on-base or surrounding areas off-base at JBSA-Randolph, Seguin AAF, or JBSA-Lackland. The proposed MILCON and FSRM projects at JBSA-Randolph would not be completed and no related advancement on the installation IDP would occur. As no changes in aircraft operations would occur, noise conditions on- and off-base would remain unchanged when compared with existing conditions.

ES 4.6 Hazardous Materials and Wastes

ES 4.6.1 Definition of the Resource

Hazardous Materials, Hazardous Wastes, and Petroleum Products. Hazardous materials are defined as hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous. Hazardous wastes are defined by the Resource Conservation and Recovery Act as amended by the Hazardous and Solid Waste

Amendments. Petroleum products include crude oil or any derivative thereof, such as gasoline, diesel, or propane.

ES 4.6.2 Affected Environment

JBSA-Randolph is a RCRA Small Quantity Generator. RCRA Small Quantity Generators generate between 100 to 1,000 kilograms of hazardous waste in any one month. Of the facilities subject to renovation, hazardous materials, hazardous wastes, and petroleum products are used and generated at Hangars 5 and 63.

This EIS focuses only on the active environmental contamination sites that have potential to be impacted by the Proposed Action and alternatives. Sites that require no further action; do not directly coincide with MILCON or FSRM projects; or would not be impacted by the proposed work activities are not discussed further in this EIS. None of JBSA's ERP or MMRP sites represent impediments to the Proposed Action and alternatives.

ES 4.6.3 Environmental Consequences

Impacts on or from hazardous materials and wastes would be considered significant if a proposed action would result in noncompliance with applicable federal or state regulations, or increase the amounts generated or procured beyond current management procedures, permits, and capacities. Impacts on contaminated sites would be considered significant if a proposed action would disturb or create contaminated sites resulting in negative impacts on human health or the environment, or if a proposed action would make it substantially more difficult or costly to remediate existing contaminated sites.

ES 4.6.3.1 Proposed Action

Short-term, minor, adverse impacts would occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during construction for the MILCON and FSRM projects. Construction would generate negligible to minor quantities of hazardous wastes.

New hazardous materials storage and hazardous waste collection points would be established, as necessary, and most likely would be sited in the MTS Facility, Hush House Pad, Fuel Cell Facility, and Hangar 13 based on anticipated building function.

The proposed increase in aircraft operations would also require additional quantities of jet fuel to be delivered, stored, used, and disposed of appropriately at JBSA-Randolph. The JBSA SPCC, P2, and hazardous waste management plans would continue to be followed to less the potential for a release. No refueling would occur at JBSA-Lackland or Seguin AAF; therefore, no additional quantities of jet fuel would be needed at these JBSA installations.

ES 4.6.3.2 Alternative 1

Impacts on hazardous materials and wastes from fewer T-7A aircraft and T-7A operations that are at a lower intensity than the Proposed Action (beginning in 2027) would be slightly less than those described for the Proposed Action.

ES 4.6.3.3 Alternative 2

Impacts on hazardous materials and wastes from T-7A operations that are 15 percent greater than the Proposed Action would be slightly greater than those described for the Proposed Action.

ES 4.6.3.4 Alternative 3

Impacts on hazardous materials and wastes from T-7A operations that are 25 percent greater than the Proposed Action would be slightly greater than those described for the Proposed Action and Alternative 2. .

ES 4.6.3.5 No Action Alternative

The No Action Alternative would not impact hazardous materials and wastes. No facility construction would occur, and there would be no changes in aircraft operations.

ES 4.7 Infrastructure and Transportation

ES 4.7.1 Definition of the Resource

Infrastructure consists of the physical structures that enable a population in a specified area to function. The infrastructure components discussed in this section include airfield pavements, liquid fuel, communications system, electrical system, water supply system, wastewater system, stormwater system, natural gas system, and solid waste management. Transportation refers to major and minor roadways that feed into an installation and the roadways, traffic patterns, and parking areas on an installation.

ES 4.7.2 Affected Environment

JBSA-Randolph maintains fuel storage tanks that store jet A fuel, diesel, and gasoline. The current daily fuel storage capacity at the installation is 1,344,511 gallons. JBSA-Randolph employs a Base Information Transport Infrastructure communications system that includes both wired and wireless components and has been recently upgraded. Electrical power at JBSA-Randolph is provided by San Antonio City Public Service Energy. Potable water at JBSA-Randolph is sourced from three on-installation wells that are part of the Edwards Aquifer. Additionally, there are two water storage tanks on the installation. The total capacity of the installation's water distribution system is 2,831,000 gpd, which is adequate to meet the current average demand of 540,700 gpd and peak demand of 1,132,000 gpd. The wastewater system at JBSA-Randolph is privatized to the San Antonio River Authority. Wastewater is discharged to the Cibolo Creek Municipal Authority (CCMA) treatment facility from a pump station on the northeast side of the installation. The current wastewater discharge capacity at JBSA-Randolph is 281,348 gpd (JBSA 2018a). The average daily wastewater discharge in 2020 was 246,545 gpd. Stormwater at JBSA-Randolph is managed by runoff, a series of detention basins, and underground storm sewer piping with outfalls to Cibolo Creek and Woman Hollering Creek. There are three stormwater outfalls that flow into Cibolo Creek at the northeast installation perimeter and Woman Hollering Creek at the southern installation perimeter. Natural Gas at JBSA-Randolph is supplied by Kinder Morgan and CenterPoint Energy and approximately 80 percent of installation buildings are metered for natural gas use. Natural gas pipeline distribution capacity is 4 billion cubic feet per day, while the average demand is approximately

43.2 million cubic feet per day. All municipal solid waste from JBSA-Randolph is collected and disposed of off-installation by private contract disposal services (JBSA 2018a).

ES 4.7.3 Environmental Consequences

Impacts on infrastructure are evaluated based on the degree to which a proposed action would affect the ability for an installation to meet utility demand, or on their potential to disrupt or improve infrastructure service levels and create additional needs. An impact could be considered significant if a proposed action resulted in the exceedance of a utility capacity or created a long-term interruption in the operation of a utility.

ES 4.7.3.1 Proposed Action

Impacts to infrastructure and transportation are all less than significant as sufficient capacity exists for the projected increases in buildings, people, and demand.

ES 4.7.3.2 Alternative 1

The initiation of the T-7A recapitalization program would be similar to those impacts projected for the Proposed Action as the construction activities would be only slightly less and the number of people and demand would be essentially the same as the Proposed Action.

ES 4.7.3.3 Alternative 2

The initiation of the T-7A recapitalization program would be similar to those impacts projected for the Proposed Action as the construction activities, people, and demand would remain the same as the Proposed Action.

ES 4.7.3.4 Alternative 3

The initiation of the T-7A recapitalization program would be similar to those impacts projected for the Proposed Action as the construction activities, people, and demand would remain the same as the Proposed Action.

ES 4.7.3.5 No Action Alternative

Under the No Action Alternative, DAF's T-7A recapitalization program would not be initiated at JBSA and no MILCON or FSRM projects would be implemented. Additionally, there would be no changed in aircraft operations or installation utility demand. Therefore, no impacts on infrastructure or transportation at JBSA-Randolph, JBSA-Lackland, or Seguin AAF, or within the region would occur.

ES 4.8 Safety

ES 4.8.1 Definition of the Resource

Safety addresses the well-being, safety, and health of members of the public, contractors, and DAF personnel during the various aspects of the Proposed Action and alternatives. Hazards relevant to this Proposed Action and alternatives include construction, mission, and flight activities.

ES 4.8.2 Affected Environment

OSHA regulations address the health and safety of people at work and cover potential exposure to a wide range of chemical, physical, and biological hazards, and ergonomic stressors. The regulations are designed to control these hazards by eliminating exposure to the hazards via administrative or engineering controls, substitution, use of personal protective equipment (PPE), and availability of Safety Data Sheets (SDS).

Mission safety on DAF installations is maintained through adherence to DoD and DAF safety policies and plans. DAF safety program ensures the safety of personnel and the public on the installation by regulating mission activities.

ES 4.8.3 Environmental Consequences

Any increase in safety risks is considered an adverse impact on safety. Significant impacts on safety would occur if a proposed action does either of the following:

- Substantially increase risks associated with the safety of DAF personnel or the general public.
- Introduce a new safety risk for which DAF is not prepared or does not have adequate management and response plans in place.

ES 4.8.3.1 Proposed Action

Short-term, minor, adverse impacts on contractor health and safety would occur during construction for the MILCON and FSRM projects. Contractor health and safety programs would follow all applicable federal OSHA regulations and would be reviewed by JBSA-Randolph personnel prior to work beginning to ensure that appropriate measures are taken to reduce the potential exposure of workers and installation personnel to health and safety risks

No adverse impacts on the health and safety of military personnel would occur from the Proposed Action. All mission-related activities associated with the Proposed Action would be carried out in accordance with DoD and DAF safety policies and plans.

Long-term, negligible, adverse impacts on flight safety would occur from increased aircraft operations during the T-38C to T-7A transition period, at full T-7A implementation, and with the introduction nighttime T-7A operations at JBSA-Randolph and JBSA-Lackland. The proposed operations would result in an increased potential for BASH incidents, including bat strikes, and other mishaps from greater and nighttime airfield use.

ES 4.8.3.2 Alternative 1

Impacts on safety from fewer T-7A aircraft and T-7A operations that are at a lower intensity than the Proposed Action (beginning in 2027) would be slightly less than those described for the Proposed Action.

ES 4.8.3.3 Alternative 2

Impacts on safety from T-7A operations that are 15 percent greater than the Proposed Action would be similar to those described for the Proposed Action. Compared to the Proposed Action,

the 15 percent increase in operations would increase the potential for BASH incidents, including bat strikes, and other mishaps from greater and nighttime airfield use.

ES 4.8.3.4 Alternative 3

Impacts on safety from T-7A operations that are 25 percent greater than the Proposed Action would be similar to those described for the Proposed Action and Alternative 2. Compared to the Proposed Action and Alternative 2, the 25 percent increase in operations would further increase the potential for BASH incidents, including bat strikes, and other mishaps from greater and nighttime airfield use.

ES 4.8.3.5 No Action Alternative

The No Action Alternative would not result in impacts on safety. No facility construction would occur, and there would be no changes in aircraft operations.

ES 4.9 Water Resources

ES 4.9.1 Definition of the Resource

Water resources are natural and man-made sources of water that are available for use by and for the benefit of humans and the environment.

ES 4.9.2 Affected Environment

JBSA-Randolph is located along the edge of the Edwards Aquifer's Artesian Zone; however, the majority of the installation does not directly overlie the aquifer. JBSA's withdrawal from the Edwards Aquifer is restricted to 12,012 acre-feet per year and JBSA-Randolph has historically withdrawn less than half of its allotment each year. JBSA-Randolph is within the San Antonio River Basin. Surface water features on the installation include artificial ponds at the golf course that are sourced with treated wastewater, Woman Hollering Creek, which southeast flows from the golf course into Cibolo Creek, and an ephemeral offshoot of Cibolo Creek in the northeastern portion of JBSA-Randolph. Wetlands on JBSA-Randolph are limited to the artificial ponds at the golf course and Woman Hollering Creek. Approximately 28.79 acres of JBSA-Randolph lie within the 100-year floodplain. These portions of the installation are at the golf course along Woman Hollering Creek and in the northeastern portion of the installation along Cibolo Creek.

ES 4.9.3 Environmental Consequences

A proposed action could have significant impacts with respect to water resources if any of the following were to occur:

- Substantially reduce water availability or supply to existing users.
- Overdraft groundwater basins.
- Exceed safe annual yield of water supply sources.
- Substantially affect water quality.
- Endanger public health or safety by creating or worsening health or flood hazard conditions.

- Threaten or damage unique hydrologic characteristics.
- Violate established laws or regulations adopted to protect water resources.

Determination of the significance of wetland impacts is based on (1) the function and value of the wetland, (2) the proportion of the wetland that would be affected relative to the occurrence of similar wetlands in the region, (3) the sensitivity of the wetland to proposed activities, and (4) the duration of ecological ramifications. Impacts on wetland resources are considered significant if high-value wetlands would be adversely affected.

ES 4.9.3.1 Proposed Action

Short- and long-term, negligible to minor, adverse impacts on water resources would occur from the Proposed Action. No construction would occur within the buffer zones around vulnerable surface water areas. The addition of approximately 879 people to Bexar County would not appreciably increase the demand for potable water or reduce regional groundwater availability in the Edwards Aquifer. No increase in water demand would occur at JBSA-Lackland or Seguin AAF.

ES 4.9.3.2 Alternative 1

Impacts on water resources from fewer T-7A aircraft and T-7A operations that are at a lower intensity than the Proposed Action (beginning in 2027) would be slightly less than those described for the Proposed Action.

ES 4.9.3.3 Alternative 2

Impacts on water resources from T-7A operations that are 15 percent greater than the Proposed Action would be slightly greater than those described for the Proposed Action. Compared to the Proposed Action, the increase in operations would slightly increase the potential for an accidental release of hazardous materials or petroleum products to contaminate groundwater aquifers and surface waters.

ES 4.9.3.4 Alternative 3

Impacts on water resources from T-7A operations that are 25 percent greater than the Proposed Action would be slightly greater than those described for the Proposed Action and Alternative 2. Compared to the Proposed Action and Alternative 2, the increase in operations would slightly increase the potential for an accidental release of hazardous materials or petroleum products to contaminate groundwater aquifers and surface waters.

ES 4.9.3.5 No Action Alternative

The No Action Alternative would not impact water resources. No facility construction would occur, and there would be no changes in aircraft operations.

ES 4.10 Environmental Justice

ES 4.10.1 Definition of the Resource

Consideration of environmental justice concerns includes the race, ethnicity, poverty status, and age of populations in the area within which potential impacts from a proposed action could

occur. Such information aids in evaluating whether a proposed action would render vulnerable any of the populations targeted for protection.

As defined by CEQ, minority or low-income populations should be identified if the percentage of persons characterized as being a minority or low-income within the region of influence (ROI) is either greater than 50 percent, or is meaningfully higher than the community of comparison.

ES 4.10.2 Affected Environment

The environmental justice ROI consists of 62 Census Block Groups that include JBSA-Randolph, Seguin AAF, and JBSA-Lackland. The communities of comparison are Guadalupe County, Bexar County, and Comal County, which encompass the Census Block Groups that make up the environmental justice ROI.

The environmental justice ROI does not include any Census Block Groups beneath the airspace areas. Impacts that would potentially be realized in the airspace areas would include aircraft air emissions and aircraft noise. Within the Draft EIS, the population statistics for the Census Block Groups are identified for determination of potential environmental justice impacts.

ES 4.10.3 Environmental Consequences

Impacts on environmental justice were assessed to determine whether the Proposed Action would result in disproportionately high and adverse human health and environmental impacts on environmental justice populations (i.e., minority or low-income populations greater than 50 percent of the total population or meaningfully greater than that of the community of comparison) or sensitive receptors (i.e., youth or elderly populations greater than 50 percent of the total population or meaningfully greater than that of the community of comparison) within the environmental justice ROI. Impacts would be considered significant if they disproportionately affect environmental justice populations or sensitive receptors compared to the general population.

ES 4.10.3.1 Proposed Action

Construction noise and air emissions would equally impact all populations in the affected area, thereby not disproportionately impacting environmental justice and sensitive receptor populations.

Adverse impacts from noise and air emissions would be expected, but increased noise levels would equally impact all populations. Therefore, the Proposed Action would not disproportionately impact environmental justice and sensitive receptor populations.

ES 4.10.3.2 Alternative 1

Impacts from implementation of Alternative 1 would be similar to but slightly less than those described for the Proposed Action.

ES 4.10.3.3 Alternative 2

Impacts from implementation of Alternative 2 would be similar to but slightly greater than those described for the Proposed Action. While noise and air emissions would further increase as a result of operations running at 115 percent of projected levels under the Proposed Action, air

emissions and noise impacts would be consistent across all populations and not disproportionately impact environmental justice and sensitive receptor populations.

ES 4.10.3.4 Alternative 3

Impacts from implementation of Alternative 3 would be greater than those described for the Proposed Action. While noise and air emissions would further increase as a result of operations running at 125 percent of projected levels under the Proposed Action, air emissions and noise impacts would be consistent across all populations and not disproportionately impact environmental justice and sensitive receptor populations.

ES 4.10.3.5 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented, and existing conditions would remain. Therefore, there would be no new impacts on environmental justice populations.