
Interim Final Environmental Assessment for Proposed Area Development Plan Projects at Joint Base San Antonio, Lackland, Bexar County, Texas

February 2023



Prepared for:
United States Air Force
502d Air Base Wing



PRIVACY ADVISORY

This Environmental Assessment (EA) is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA regulations (40 CFR Parts 1500–1508), and 32 CFR Part 989, *Environmental Impact Analysis Process (EIAP)*.

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

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COVER SHEET
Final Environmental Assessment for
Proposed Area Development Plan Projects at Joint Base San Antonio, Lackland, Texas

- a. *Responsible Agency:* United States Air Force
- b. *Location:* Joint Base San Antonio, Lackland, Texas
- c. *Designation:* Final Environmental Assessment
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Abstract:

This Environmental Assessment (EA) has been prepared pursuant to provisions of the National Environmental Policy Act, Title 42 *United States Code*, §§ 4321–4347, implemented by Council on Environmental Quality Regulations at Title 40, *Code of Federal Regulations* (CFR) Parts 1500–1508, and 32 CFR Part 989, *Environmental Impact Analysis Process (EIAP)*. Potentially affected environmental resources were identified in coordination with local, state, and federal agencies. Specific environmental resources with the potential for environmental consequences include land use; air quality; noise; earth, water, biological, and cultural resources; environmental justice and protection of children; infrastructure, transportation, and utilities; hazardous materials and wastes; and safety.

The purpose of the Proposed Action is to maintain current mission and mission support functions at JBSA-Lackland (LAK) through selected development actions and real-property improvements. The Proposed Action is needed to address the condition and capability of facilities and infrastructure. Many buildings and infrastructure systems are outdated and in poor condition; others lack the functionality required to accomplish the mission. These real-property assets require maintenance, renovation, expansion, or replacement to remain operable and support future mission expansion. The Proposed Action would begin to address these deficiencies by implementing the selected projects in the short term (i.e., 2023–2027).

The analysis of the affected environmental and environmental consequences of implementing the Proposed Action concluded that by implementing standing environmental protection measures and best management practices, there would be no significant adverse impacts from the actions at JBSA-LAK on the environmental resources. JBSA-LAK is an active installation with aircraft operations, demolition, and new construction actions currently underway as well as future development currently in the planning phase. Impacts associated with construction, demolition, and renovation would be minor; therefore, significant cumulative impacts are not anticipated with implementation of the Proposed Action when considered in conjunction with other past, present, or reasonably foreseeable environmental trends or future actions at JBSA-LAK.

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LIST OF ACRONYMS AND ABBREVIATIONS

16 AF	16th Air Force
59 MDW	59th Medical Wing
90 COS	90th Cyberspace Operations Squadron
149 FW	149th Fighter Wing
319 TS	319th Training Squadron
341 TS	341st Training Squadron
433 AW	433d Air Wing
502 ABW	502d Air Base Wing
502 CEG	502d Civil Engineer Group
502 ISG	502d Installation Support Group
802 FSS	802d Force Support Squadron
ACAM	Air Conformity Applicability Model
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ADP	Area Development Plan
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFRC	Air Force Reserve Command
AGE	Aerospace Ground Equipment
AICUZ	Air Installation Compatible Use Zones
Air Force	United States Air Force
ALCF	Airlift Control Flight
APE	Area of Potential Effect
APZ	Accident Potential Zone
AQCR	Air Quality Control Region
ATC	air traffic control
AT/FP	antiterrorism/force protection
AW	Air Wing
BEAST	Basic Expeditionary Airman Skills Training
BMP	best management practices
BMT	Basic Military Training
CAA	Clean Air Act
CATEX	Categorical Exclusion
CGP	construction general permit
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COB	County of Bexar
COS	Cyberspace Operations Squadron
COSA	City of San Antonio
CRM	Cultural Resources Manager
CTA	Chapman Training Annex
CWA	Clean Water Act
CZ	Clear Zone
dBA	A-weighted decibels
DLI	Defense Language Institute
DoD	Department of Defense
DoDI	Department of Defense Instruction
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement

EISA	Energy Independence and Security Act
EO	Executive Order
EOD	explosive ordnance disposal
EPN	early public notice
ERP	Environmental Restoration Program
ESA	<i>Endangered Species Act</i>
ESQD	explosives quantity distance arc
FFRMP	Federal Flood Risk Management Standard
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FSS	Force Support Squadron
FW	Fighter Wing
GBI	Green Building Initiative
GHG	Greenhouse Gas
HPSG	Human Performance Support Group
HQ	Headquarters
I	Interstate
IAAFA	Inter-American Air Forces Academy
ICRMP	Integrated Cultural Resources Management Plan
IDP	Installation Development Plan
IFS	Installation Facility Standards
IICEP	Interagency/Intergovernmental Coordination for Environmental Planning
ISR	intelligence, surveillance, and reconnaissance
JBSA	Joint Base San Antonio
Kelly Field	Kelly Field Annex District
LAK	Lackland
LAK-East	Lackland East District
LAK-West	Lackland West District
lb	pound
Main Base	LAK-East and LAK-West
MBTA	Migratory Bird Treaty Act
MDW	Medical Wing
MILCON	Military Construction
MMRP	Military Munitions Response Program
MPF	Military Personnel Flight
MRA	munitions response area
MRS	munitions response site
MSA	munitions storage annex
MSG	Mission Support Group
MWD	military working dog
MWR	morale, welfare, and recreation
NAAQS	National Ambient Air Quality Standards
NEPA	<i>National Environmental Policy Act</i>
NHPA	<i>National Historic Preservation Act</i>
NOA	Notice of Availability
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
OSS	Operations Support Squadron
PA	Programmatic Agreement
PAL	project action limit
ppb	parts per billion
ppm	parts per million
PSA	Port of San Antonio
PSD	Prevention of Significant Deterioration
PTE	potential to emit
RCRA	Resource Conservation and Recovery Act

SARA	San Antonio River Authority
SAWS	San Antonio Water System
SDZ	Safety Danger Zone
sf	square feet
SFS	Security Forces Squadron
SH-13	State Highway 13
SHPO	State Historic Preservation Office(r)
SIP	state implementation plan
SWP3	Stormwater Pollution Prevention Plan
SWTG	Special Warfare Training Group
SWTW	Special Warfare Training Wing
TCEQ	Texas Commission on Environmental Quality
TCP	Traditional Cultural Property
TORCH	Readiness Training Complex
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks & Wildlife Department
TWDB	Texas Water Development Board
tpy	tons per year
TRS	Training Squadron
TTF	Training Test and Ferry
UFC	Unified Facilities Criteria
USC	United States Code
US	United States
USEPA	US Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGBC	United States Green Building Council
UXO	Unexploded Ordnance
VOQ	Visiting Officer's Quarters
WHASC	Wilford Hall Ambulatory Surgical Center

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CHAPTER 1 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The United States (US) Air Force (Air Force) 502d Air Base Wing (502 ABW) at Joint Base San Antonio (JBASA) proposes to implement development projects at JBASA, Lackland (JBASA-LAK) to maintain and modernize the Base. Located in the southwest portion of the City of San Antonio, Texas (**Figure 1-1**), JBASA-LAK is home to the 502 ABW and the parent installation for the JBASA region. For planning purposes, JBASA-LAK is divided into four districts: the Kelly Field Annex (Kelly Field), Lackland East (LAK-East), Lackland West (LAK-West), and the Chapman Training Annex (CTA). The Air Force recently completed area development plans (ADPs) for each of these JBASA-LAK planning districts (Air Force, 2019a, 2019b, 2019c, 2019d). Together, the ADPs establish a framework and timeline for the future development of JBASA-LAK. The proposed development projects were selected from the short-term phase of the ADPs for implementation within the next 5 years, from approximately 2023 to 2026. This Environmental Assessment (EA) evaluates the potential environmental, cultural, and socioeconomic effects of the proposed ADP projects at JBASA-LAK. These projects are described and referenced throughout this EA and collectively referred to as the “Proposed Action.”

This EA is prepared in accordance with the *National Environmental Policy Act of 1969*, as amended ([42 United States Code \[USC\] § 4321–4347](#)) (NEPA); the Council on Environmental Quality (CEQ) NEPA regulations ([40 Code of Federal Regulations \[CFR\] Parts 1500–1508](#)); and the Air Force NEPA regulations at [32 CFR Part 989](#), *Environmental Impact Analysis Process (EIAP)*. Per the updated CEQ NEPA regulations, this EIAP complies with the prescriptive timeline and page limits for an EA. Other applicable provisions of 40 CFR Parts 1500–1508 are cited below. EIAP informs decision-makers, regulatory agencies, and the public about an Air Force Proposed Action before any decision is made on whether to implement the action. During the EIAP, if analyses in the EA determine that potential significant adverse effects would be likely to occur, the Air Force would publish a Notice of Intent (NOI) in the *Federal Register* to prepare an Environmental Impact Statement (EIS).

The CEQ NEPA regulations at [40 CFR § 1500.1\(b\)](#), [40 CFR § 1506.6\(b\) and \(c\)](#), and [40 CFR § 1507.4](#) provide purpose and direction for streamlining the NEPA process. CEQ memoranda (e.g., March 6, 2012) and guidance on modernizing the NEPA process (CEQ, 2003) identify opportunities to streamline the NEPA process, including the use of technology for communications and information dissemination. This EA satisfies the requirements of NEPA in accordance with the CEQ regulations and promotes NEPA streamlining through the implementation of the Air Force EIAP. To render this document more concise, links are provided to online data sources to which the reader can refer for more information. Should the reader not have internet access, please contact the Air Force point-of-contact listed on the **Cover Sheet** of this EA and accommodations will be made to provide printed copies of relevant information requested.

1.2 JOINT BASE SAN ANTONIO

A main objective of the Department of Defense (DoD) joint basing program is to combine the support functions of two or more DoD installations that are in close proximity to one another. JBASA was formed in 2010, merging the support functions of three geographically separate installations in and around San Antonio (see **Figure 1-1**). This joint basing action brought Lackland Air Force Base (AFB), Randolph AFB, and Fort Sam Houston (formerly an Army base) under the management of the 502 ABW. Camp Bullis, an Army training camp under Fort Sam Houston, also became part of the Joint Base. JBASA is currently the single largest entity in the DoD, accomplishing diverse missions such as training, flying, medical, cyber, and intelligence.

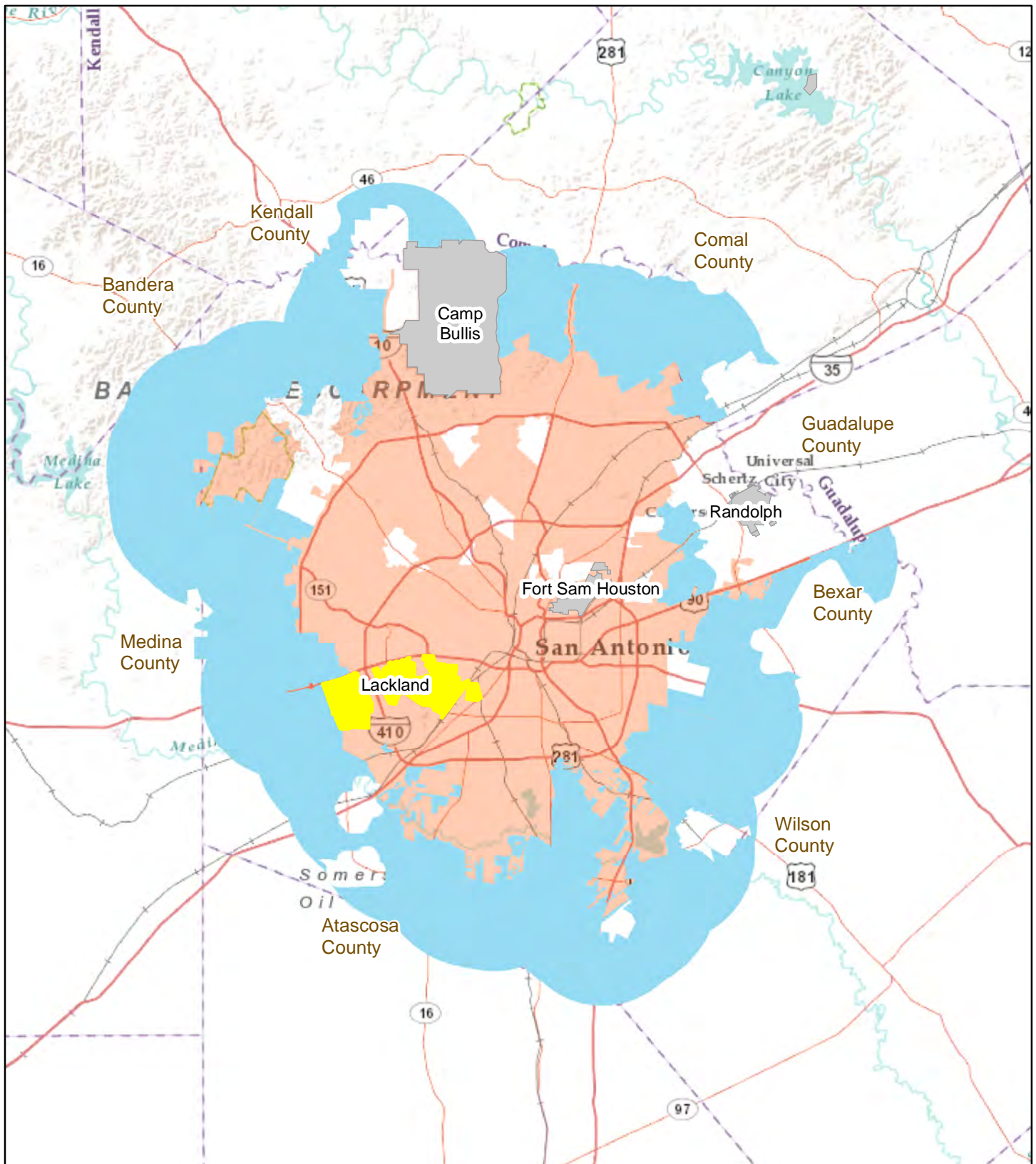


FIGURE 1-1
REGIONAL
OVERVIEW

- City of San Antonio (COSA)
- COSA Extraterritorial Jurisdiction
- JBSA-LAK
- Other JBSA Installation

N
Imagery: ESRI 2021
Projection: WGS 1984
Zone 14N
0 4 8 Miles



1.2.1 Integrated Installation Planning

Department of Defense Instruction (DoDI) 4165.70, *Real-Property Management* and Unified Facilities Criteria (UFC) 2-100-01, *Installation Master Planning*, prescribe the minimum requirements for development planning on military installations. Air Force Instruction (AFI) 32-1015, *Integrated Installation Planning*, describes and implements the development planning process for Air Force installations.

The *Joint Base San Antonio Installation Development Plan* (IDP), or “Master Plan” as defined in DoDI 4165.70, outlines a future vision for JBSA activities over the next 25 years. The IDP also sets forth a “blueprint” for the future development of JBSA to better integrate activities across the Joint Region. While development must conform to the IDP, ADPs require more detailed planning on a smaller scale. **Figure 1-2** depicts the planning elements combined and consolidated by the IDP, including the ADP.

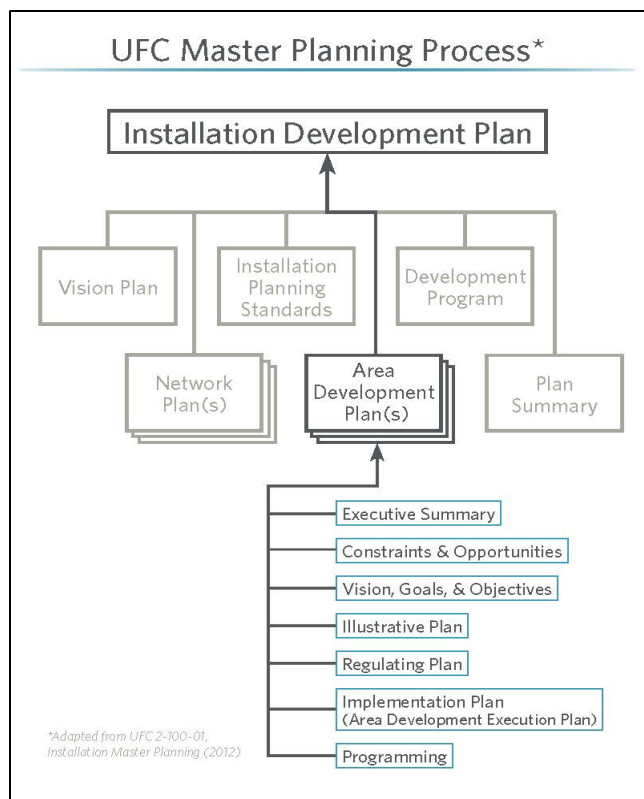


Figure 1-2 UFC Master Planning Process

1.3 JOINT BASE SAN ANTONIO, LACKLAND

Located approximately 10 miles west of downtown San Antonio, JBSA-LAK consists of 8,793 acres of contiguous and non-contiguous lands in Bexar County, Texas. The Base is a primary location for Air Force Basic Military Training (BMT) and is home to more than 120 Air Force, DoD, and associated organizations. State Highway 13 (SH-13), also known as Military Drive, bisects JBSA-LAK from north to south. SH-13 divides LAK-East from LAK-West; together, these planning districts comprise the Main Base portion of JBSA-LAK.

To the east, Leon Creek meanders through JBSA-LAK from north to south to form the boundary between LAK-East and Kelly Field. Kelly Field includes a runway generally oriented north to south that supports diverse types of aircraft training and operations. The Port of San Antonio (PSA) is situated east and southeast of the runway on land previously owned by the Air Force but transferred to an independent authority created by the City of San Antonio during the standup of JBSA.¹

Approximately 1 mile to the west of SH-13, Interstate (I) 410 runs north to south, bisecting a swath of land that separates LAK-West from the CTA farther west. Medio Creek runs north to south through the central portion of the CTA. Land use on the Base is generally organized around the military mission and its support functions.

Figure 1-3 depicts the four planning districts of JBSA-LAK containing proposed ADP projects: LAK-East, LAK-West, Kelly Field, and CTA. PSA does not have proposed actions and is not discussed further in this EA. **Sections 1.3.1–1.3.3** describe the districts in more detail.

¹ DoD facilities remain in operation at the PSA through a lease agreement with the City of San Antonio; however, the long-term goal is for all DoD units to relocate to JBSA-LAK or another Air Force- or DoD-owned property.

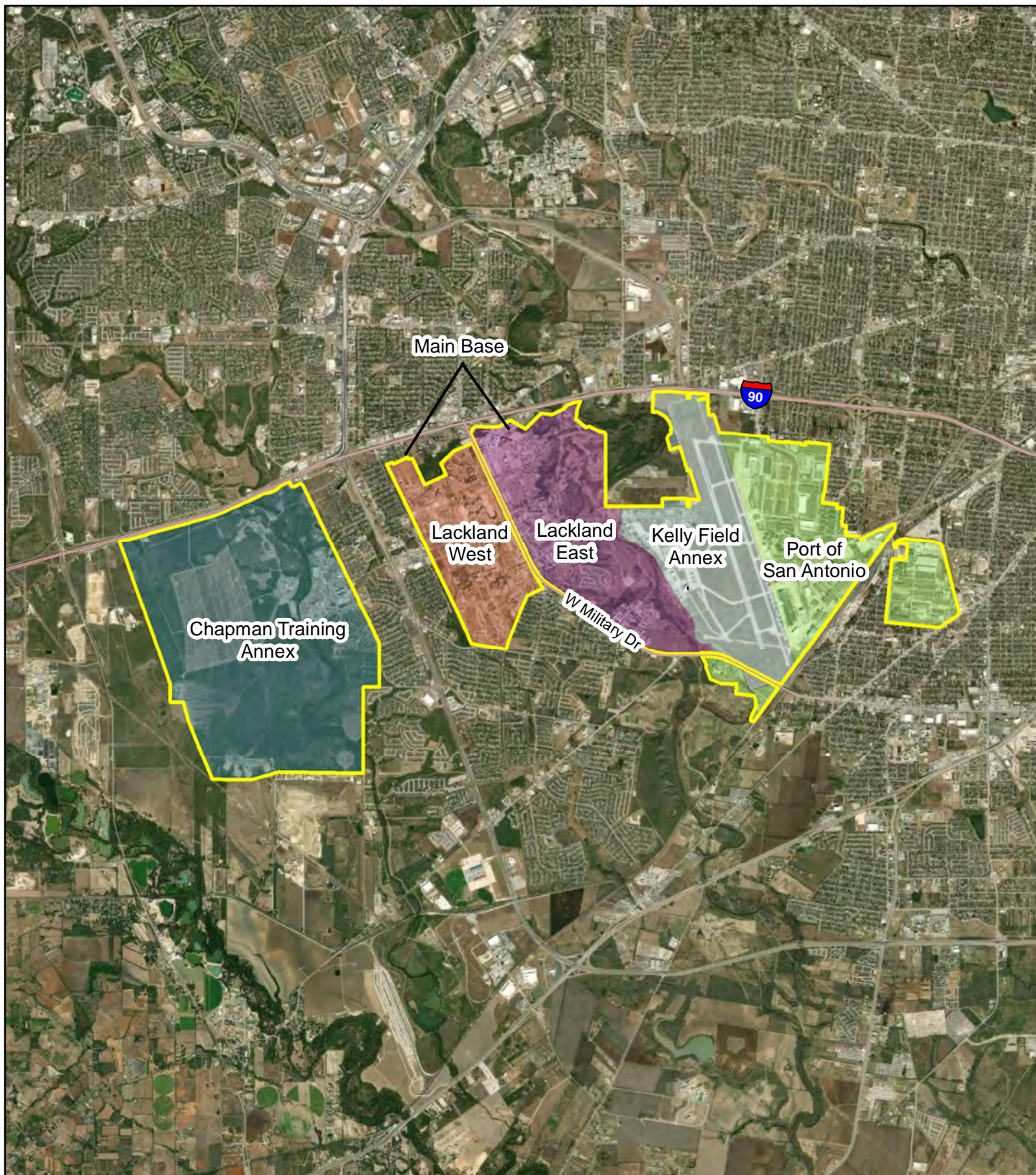


FIGURE 1-3

PLANNING DISTRICTS
JBSA-LAK



State Highway

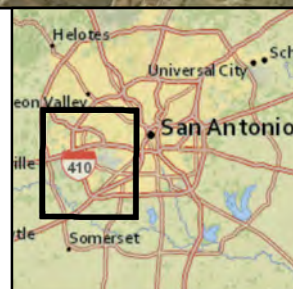


JBSA-LAK



Imagery: ESRI 2021
Projection: WGS 1984
Zone 14N

0 0.75 1.5
Miles



1.3.1 Kelly Field Annex

Kelly Field consists of 2,068 acres of land situated between the PSA and LAK-East. The city of San Antonio bounds Kelly Field to the north and south. Aircraft operations are supported by 11,500 feet of runway in the central portion of the Annex, east of Leon Creek. Kelly Field is accessible to the south of US Highway 90 via Growden Road. Kelly Drive and Hall Boulevard link Kelly Field to LAK-East.

Aircraft training and operations at Kelly Field are carried out by the 433d Air Wing (433 AW), Air Force Reserve Command (AFRC), and the 149th Fighter Wing (149 FW), an F-16 training unit of the Air National Guard. The 433 AW organizes, equips, and trains approximately 3,100 “ready” reservists. The AW performs peacetime missions and supports mobilization readiness for the Air Expeditionary Force. When mobilized, the 433 AW provides aircraft, crews, support personnel, and equipment to meet various combat readiness objectives. It is the AFRC’s only formal training unit for C-5 Galaxy flight qualifications. Kelly Field also supports PSA operations under an agreement between JBASA and the PSA.

1.3.1.1 Purpose of the Action

The **purpose** of the Proposed Action at Kelly Field is to maintain its current mission capabilities through selected development actions and real-property improvements. As an active military airfield, Kelly Field requires modern facilities and infrastructure to carry out its mission and mission support functions. New or improved facilities connected by more integrated, networked utility and infrastructure systems would provide Kelly Field with mission-essential capabilities and operational security.

A secondary **purpose** of the Proposed Action is to develop Kelly Field in a manner that provides flexibility to meet future mission requirements, some of which are not yet known. Developable land on Kelly Field is limited due to various natural and operational constraints. Future development at the Annex must avoid or reduce the scope of these constraints by reorganizing the built environment, using space more efficiently (e.g., mission consolidation), and, if possible, acquiring land.

The Proposed Action would accomplish these objectives in the short-term by implementing the selected projects at Kelly Field from approximately 2023 to 2027, consistent with the *Kelly Field District Area Development Plan* (Air Force, 2019a).

1.3.1.2 Need for the Action

The Proposed Action is **needed** to address the condition and capability of facilities and infrastructure at Kelly Field. Many buildings and infrastructure systems are outdated and in poor condition; others lack the functionality required to accomplish the mission. These real-property assets require maintenance, renovation, expansion, or replacement to remain operable and support future mission expansion. The Proposed Action would begin to address these deficiencies by implementing the selected projects in the short-term.

The Proposed Action is also **needed** to address the configuration and connectivity between facilities at Kelly Field. The amount of developable land is limited by natural constraints such as floodplains, topography, and soils. Other constraints are mission related, such as airfield clearance and operational safety zones. In particular, the explosives safety quantity distance (ESQD) encumbrance from the munitions storage annex (MSA) reduces the amount of developable land at Kelly Field. Additional space is needed to accommodate the relocation of PSA and other JBASA-LAK or DoD functions, including compliance with current antiterrorism/force protection (AT/FP) standards. The Proposed Action would chart a more flexible, phased approach for the future development of Kelly Field by implementing the selected short-term projects in a strategic, orderly, efficient, and sustainable manner.

1.3.2 Main Base (Lackland East and West)

LAK-East consists of 1,937 acres of land situated between Kelly Field and LAK-West. US Highway 90 and Military Drive bound LAK-East to the north and south, respectively. LAK-East is accessible north to south along West Military Drive via Luke Boulevard, Truemper Street, and Selfridge Avenue. Access to LAK-East from the east is via Kelly Drive and Hall Boulevard via Chappie James Way.

LAK-West consists of 1,165 acres of land. LAK-West is bound by the city of San Antonio to the north and west, the city of San Antonio and Military Drive to the east, and Medina Base Road to the south. From I-410, access to LAK-West is via Valley Hi Drive to Truemper Street, which connects to LAK-East via an overpass above West Military Drive. Luke Boulevard and Selfridge Avenue also provide access to LAK-West from West Military Drive.

As LAK-East and LAK-West comprise the Main Base portion of JBSA-LAK (see **Figure 1-2**), these districts support many of the same tenant activities, the most visible being BMT. Known as the “Gateway to the Air Force”, the Main Base has served as the training ground for millions of recruits throughout its history. Support functions and personnel on the Main Base require more connectivity within and between the districts. The military mission of the Main Base is diverse and includes medical; aircraft training; civil engineering; intelligence, surveillance, and reconnaissance (ISR); and public works. The major tenant organizations associated with the Main Base include:

- **37th Training Wing (37 TRW)** – The 37 TRW is the largest unit of its kind in the Air Force. It is responsible for the training and development of more than 66,000 DoD personnel each year. Other support functions of the 37 TRW include second language training on behalf of the Inter-American Air Forces Academy and Defense Language Institute (DLI), and military working dog (MWD) training in partnership with the Transportation Security Administration.
- **502d Installation Support Group (502 ISG)** – The 502 ISG is responsible for communications, air traffic control, runway maintenance, and legal support for JBSA-LAK and its 266 mission partners.
- **502d Civil Engineering Group (502 CEG)** – The 502 CEG provides civil engineering support for JBSA-LAK, including fire protection, disaster preparedness, explosive ordnance removal, and environmental support. The group also maintains JBSA-LAK’s infrastructure, fuel, water, and sewage systems, as well as pest, vegetation, and recycling support.
- **59th Medical Wing (59 MDW)** – The 59 MDW is the main healthcare, medical education and research, and readiness wing in the Air Force. Headquartered in the northwest portion of LAK-East, the main hospital of the 59 MDW is the Wilford Hall Ambulatory Surgical Center (WHASC). The WHASC houses numerous clinics and specialty services that provide healthcare to more than 240,000 beneficiaries in the San Antonio metropolitan area.
- **16th Air Force (16 AF)** – Formed from the merger of the 24th and 25th Air Force, the 16 AF is the first Information Warfare Numbered Air Force of its kind in the Air Force. The 16 AF integrates ISR, cyber warfare, electronic warfare, and information operations capabilities across the Air Force. Along with other intelligence units, the 16 AF is located at Security Hill in the southernmost portion of LAK-East.

Land use on the Main Base also includes a Parade Field; golf course; retail services; residential housing; morale, welfare, and recreation (MWR) assets (e.g., recreation, physical fitness, and entertainment venues); and built and open space areas associated with JBSA-LAK’s independent school district.

1.3.2.1 Purpose of the Action

The **purpose** of the Proposed Action at the Main Base is to maintain current mission and mission support functions through selected development actions and real-property improvements. Many facilities are outdated, in poor condition, and, as a result, are either vacant or underutilized. As the Main Base continues to attract the interest of new and different tenant organizations, the recapitalization or demolition of such

facilities creates opportunity for infill development and more efficient space utilization to accommodate growth.

A secondary **purpose** of the Proposed Action is to maintain and improve quality of life at the Main Base. This portion of JBSA-LAK is home to a large population of military personnel and their dependents. The Main Base also provides healthcare services to the many veterans residing in the San Antonio metropolitan area. As a result, the preservation and enhancement of residential, community, and commercial areas is integral to development planning within the Main Base. For example, quality of life considerations include the connectivity and efficiency of multimodal transportation networks, MWR opportunities, aesthetics, access to commercial services, and land use compatibility (e.g., nuisances such as noise).

The Proposed Action would support these objectives in the short-term by implementing the selected projects at the Main Base from approximately 2023 to 2027, consistent with the *Lackland East District Area Development Plan* (Air Force, 2019b) and the *Lackland West District Area Development Plans* (Air Force, 2019c).

1.3.2.2 Need for the Action

The Proposed Action is **needed** to address the condition and capability of facilities and infrastructure at the Main Base. Many of these assets are outdated and in poor condition; others lack the functionality required to accomplish the mission. These real-property assets require maintenance, renovation, expansion, or replacement to remain operable and support future mission expansion. The Proposed Action would begin to address these deficiencies by implementing the selected projects in the short-term.

The Proposed Action is also **needed** to maintain and improve the assets and areas that provide quality of life benefits to the large permanent and transient population of the Main Base. These include components of the built and natural environment that provide such benefits and their functional relationship with other types of land use. For example, poor circulation and inefficient ingress/egress associated with parts of the Main Base's transportation network require management action; new or improved infrastructure to support MWR functions and enhance public safety is also needed. The Proposed Action would preserve and enhance quality of life on the Main Base by implementing the selected short-term projects in a strategic, orderly, efficient, and sustainable manner.

1.3.3 Chapman Training Annex

The CTA consists of 3,973 acres of land. The CTA comprises the western portion of JBSA-LAK and is separated from the Main Base by a swath of land bisected by I-410. Access to the CTA is via Ray Ellison Boulevard and Medina Base Road; commercial vehicle access is via Ray Ellison Boulevard and Voyager Drive.

Training conducted at the CTA supports various mission capabilities, such as special warfare, explosive ordnance disposal (EOD), expeditionary combat, cyber intelligence, and munitions management and storage. Training assets unique to the CTA include the Basic Expeditionary Airman Skills Training (BEAST) site, a munitions storage area, small arms range complex, and EOD area. A gunsmith shop and confinement facility are also located at the CTA to support training requirements. Tenant activities or user groups associated with the CTA include:

- **319th Training Squadron (319 TS)** – The 319 TS provides BMT to new Air Force personnel in areas such as chemical, biological, radiological, and nuclear.
- **802d Force Support Squadron (802 FSS)** – The 802 FSS is one of two support squadrons under the 502 ABW. The squadron provides military and civilian personnel support by implementing education and mission-readiness programs.
- **Special Warfare Training Wing (SWTW)** – Headquartered at the CTA, the SWTW selects and trains conventional and special operations ground combat forces.

- **90th Cyberspace Operations Squadron (90 COS)** – The 90 COS is a unit of the Air Force Space Command that provides, integrates, and delivers cyber capabilities across the Air Force.
- **341st Training Squadron (341 TS)** – Headquartered at the CTA, the 341 TS provides trained MWDs and handlers to the DoD, other government agencies, and US allies.

1.3.3.1 Purpose of the Action

The **purpose** of the Proposed Action is to maintain the joint training mission of the CTA through selected development actions and real-property improvements, consistent with applicable DoD and Air Force policy and strategy doctrine² Maintaining and modernizing the mission support capabilities of the CTA require both the recapitalization of existing real-property assets and new construction. Due to the limited amount of developable land at the CTA, mission consolidation and efficient space utilization are central to accomplishing this objective.

A secondary **purpose** of the Proposed Action is to develop the CTA in a manner that provides flexibility to meet future mission requirements, some of which are not yet known. Future development must be sited and configured or, in some cases, reconfigured to minimize the substantial natural and operational constraints associated with the CTA. Future development at the CTA must also account for its unique training mission and related security and safety requirements.

The Proposed Action would accomplish these objectives in the short-term by implementing the selected projects at the CTA from approximately 2023 to 2027, consistent with the *Medina Training Annex Area Development Plan* (Air Force, 2019d).³

1.3.3.2 Need for the Action

The Proposed Action is **needed** to address the condition and capability of facilities and infrastructure at the CTA. Many buildings and infrastructure systems are outdated and in poor condition; others lack the functionality required to accomplish the mission. These real-property assets require maintenance, renovation, expansion, or replacement to remain operable and support future mission expansion. Security and access control infrastructure at the CTA are also inadequate and do not comply with current AT/FP standards. The Proposed Action would begin to address these deficiencies by implementing the selected projects in the short-term.

The Proposed Action is also **needed** to address the configuration of the built environment at the CTA. The amount of developable land is limited by natural constraints such as floodplains; other constraints are mission related, such as the ESQD encumbrance associated with munitions storage area and safety zones generated during live-fire training activities. Training noise also constrains land use in some portions of the CTA where incompatible with the surrounding community. Additional space is needed for future mission expansion and compliance with current AT/FP standards. The Proposed Action would chart a more flexible, phased approach for the future development of the CTA by implementing the selected short-term projects in a strategic, orderly, efficient, and sustainable manner.

1.4 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The Air Force NEPA regulations at [32 CFR § 989.11](#) require an assessment of potential environmental impacts for Air Force projects recommended in a comprehensive plan such as an ADP. In accordance with [40 CFR § 1501.3](#), the Air Force determined the appropriate level for this analysis is an EA. An EA is a concise public document that briefly discusses the purpose and need, alternatives, and potential

² Current DoD and Air Force policy and strategy doctrine applicable to the Proposed Action include the National Defense Strategy (DoD, 2018); Air Force Posture Statement (Air Force, 2020a); and Air Force Infrastructure Investment Strategy (Air Force, 2019e).

³ The CTA was formerly referred to as the Medina Training Annex.

environmental impacts of a proposed federal action. It aids in agency planning and decision-making, or facilitates the preparation of an EIS, as necessary ([40 CFR § 1501.5](#)).

This EA evaluates the potential environmental consequences of implementing the Proposed Action and Alternatives for short-term (i.e., from 2023 to 2027) ADP projects at JBSA-LAK. This EA serves as a basis for the Air Force to determine whether the selected ADP projects—individually or cumulatively—would result in a significant impact on the human environment.

If the EA determines that potential impacts would be less-than-significant, the Air Force would select an Alternative to implement and document its decision by issuance of a Finding of No Significant Impact (FONSI). If the EA determines that potential impacts would or likely would be significant, the Air Force would announce its intent to prepare an EIS or choose to take no action. In lieu of preparing an EIS, the Air Force may also “mitigate” potentially significant environmental impacts found during preparation of an EA to less-than-significant levels. Any required and agreed upon mitigation for this purpose would be documented in the FONSI. Should the Proposed Action and Alternatives affect floodplains or wetlands subject to EO 11988, [Floodplain Management](#); EO 13690, [Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input](#), as reinstated by [EO 14030](#); or EO 11990, [Protection of Wetlands](#) (see **Section 1.7.1**), the Air Force would also prepare a Finding of No Practicable Alternative (FONPA).

AFI 32-1015 requires a flexible approach to planning the future development of Air Force installations. Accordingly, the scope of this EA is designed for that purpose. The Air Force may decide to implement the full scope of the Proposed Action or implement a reduced scope of the Proposed Action. The ability to evolve and adapt the scope of the Proposed Action during the EIAP is necessary to address planning, design, and funding uncertainty associated with the Proposed Action. This decision-making flexibility is also needed to implement the Proposed Action in compliance with applicable environmental laws and regulations. For example, should one or more individual ADP project(s) require further environmental review, other ADP projects included in the Proposed Action could move forward to comply with NEPA.

This EA addresses the potential effects of the Proposed Action and Alternatives on resource areas subject to potential impacts. **Chapter 3** presents information on the existing conditions of each resource area, includes the environmental impacts analysis, and, when appropriate, recommends best practices and mitigation measures. In accordance with [40 CFR § 1502.15](#), the existing conditions presented in **Chapter 3** also describe reasonably foreseeable environmental trends and planned actions in the area(s) that could be affected by the Proposed Action and Alternatives, now or in the future. Accordingly, the impact analyses in **Chapter 3** evaluates future actions that support the Air Force’s decision-making process or have a reasonably close causal connection to the Proposed Action and Alternatives. To document and account for such potential effects, the Air Force defined a Region of Influence (ROI) for each resource area subject to analysis in this EA. Resource areas eliminated from further, more detailed analysis, as well as the rationale for eliminating those resource areas, are presented in **Section 3.2**.

1.5 DECISIONS TO BE MADE

The decision to be made is whether to implement the Proposed Action. Should the Air Force choose to implement the Proposed Action, this EA will assist in determining an appropriate scope of action to minimize potential adverse environmental impacts and allow for additional, project-specific environmental review in compliance with NEPA. The decision-making framework for this EA (see also **Section 3.1**) is described as follows:

- Do not implement the Proposed Action.
- Implement the Proposed Action as documented in a FONSI for this EA and, when appropriate, via categorical exclusion (CATEX) as defined in 32 CFR Part 989, Appendix B.

- Implement a reduced scope of the Proposed Action as documented in a FONSI for this EA and, when appropriate, via CATEX⁴ as defined in 32 CFR Part 989, Appendix B.
- Publish a NOI in the *Federal Register* to prepare an EIS for the Proposed Action or one or more ADP project(s).

Should the Air Force decide to implement the Proposed Action as noted above, this EA will identify any actions the Air Force will commit to undertake to minimize environmental effects and comply with NEPA.

1.6 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

NEPA requires federal agencies to consider the potential environmental impacts of their proposed actions on the human and natural environment. The EIAP implements Air Force compliance with NEPA in accordance with the CEQ NEPA regulations and guidance.

1.6.1 Interagency and Intergovernmental Coordination and Consultation

Interagency and intergovernmental coordination for environmental planning (IICEP) is a federally mandated process for informing and coordinating with other governmental agencies regarding a federal Proposed Action. The Air Force complies with the IICEP mandate through the scoping⁵ process ([40 CFR § 1501.9](#)) and public involvement (see [40 CFR 1506.6](#) and **Section 1.6.2** of this EA). The Air Force sent scoping letters dated 17 March 2022, concerning the Proposed Action and Alternatives to government agencies. Agency responses to the scoping letters are summarized as follows:

- Texas Parks & Wildlife Department (TPWD) – 14 April 2022
- US Army Corps of Engineers (USACE) – 6 June 2022

A list of agencies that received scoping letters and copies of IICEP correspondence are provided in **Appendix A**.

1.6.2 Public and Agency Review

The intent of this EA is to inform decision-makers and the public of the potential environmental effects of the Proposed Action and Alternatives prior to making a federal decision to move forward with any Alternative. This allows the Air Force to make a fully informed decision, aware of any potential environmental effects. Overall, this EA:

- documents the NEPA process or EIAP;
- provides an opportunity for the public, regulatory agencies, and Native American Tribes to participate in the Air Force's decision-making process; and
- considers input on the possible environmental effects of the Proposed Action and Alternatives, including methods to reduce such effects.

The Air Force invited the public and other interested stakeholders to review and comment on this EA. Accordingly, a Notice of Availability of the Draft EA and Draft FONSI/FONPA was published in the following local newspapers, copies of which are provided in **Appendix B**:

- *The San Antonio Express & News* – 2, 3 February 2023
- *San Antonio Business Journal* – 3 February 2023

⁴ A CATEX refers to a category of actions that do not individually or cumulatively have the potential for significant effects on the environment and, therefore, do not require further environmental analysis (32 CFR § 989.13).

⁵ Scoping is a process for determining the scope of issues to be addressed and analyzed in a NEPA document.

The public comment period of the Draft EA and FONSI/FONPA concluded on 4 March 2023. During the public comment period, the Draft EA and FONSI/FONPA were made available online for view or download at: <https://www.jbsa.mil/Resources/Environmental/>. Additionally, printed copies of the Draft EA and FONSI/FONPA were available by request to the Air Force and placed at the following local libraries for review:

- San Antonio Public Library, 600 Soledad Street, San Antonio
- Johnston Public Library, 6307 Sun Valley Drive, San Antonio

The Air Force received no public or agency comments on the Draft EA or Draft FONSI/FONPA during the public comment period.

1.7 INTEGRATION OF OTHER ENVIRONMENTAL STATUTES AND REGULATIONS

This EA organizes separate, but related, environmental compliance requirements associated with the Proposed Action and Alternatives in a single compliance document. In accordance with NEPA and CEQ regulations, the Air Force addresses these requirements concurrently with the EIAP to the extent possible.

The Air Force is working closely with relevant federal, state, and local agencies, as well as Native American Tribes, with purview over the Proposed Action. **Sections 1.7.1–1.7.4** summarize relevant environmental compliance requirements and their concurrency with this EA. Copies of relevant correspondence concerning these requirements are provided in **Appendix A**. These and other applicable environmental statutes and regulations are further described in **Chapter 3**.

1.7.1 Floodplain Management and Protection of Wetlands

[EO 11988](#) directs federal agencies to determine whether a Proposed Action would occur within a floodplain and to avoid or minimize adverse impacts on floodplains. If an agency considers avoiding adverse impacts on a floodplain and determines that no practicable alternative to undertaking the action is feasible, EO 11988 requires minimizing impacts by design or modification. In such cases, agencies must also prepare and circulate a notice to explain how avoidance was not practicable and describe minimization measures. The planning and evaluation steps required by EO 11988 also apply to [EO 11990](#) a similar directive requiring federal agencies to avoid or minimize adverse impacts on wetlands.

To implement EO 11988, processes for evaluating the impacts of federal actions in or affecting floodplains (and wetlands) are in place. [EO 13690](#) creates a new flood risk reduction standard for federally funded projects, the Federal Flood Risk Management Standard (FFRMP). The FFRMP is a flexible framework for increasing resilience against flooding and preserving the natural function benefits of floodplains. The incorporation of the FFRMP will expand federal management of actions that affect floodplains from the current base flood level to a higher vertical elevation and corresponding horizontal extent. EO 13690 also sets forth a process for further solicitation and consideration of public input. As applicable, this EA documents Air Force compliance with EOs 11988, 11990, and 13690.

To comply with the EOs noted above, the Air Force placed an early public notice (EPN) in the San Antonio Express News (11 and 12 March 2022) and San Antonio Business Journal (11 March 2022) regarding the Proposed Action and its potential to affect floodplain and wetland resources on JBSA-LAK (**Appendix B**). No public comments in response to the EPN were received.

1.7.2 State Historic Preservation Office

Section 106 of the *National Historic Preservation Act* ([54 USC § 300101](#) et seq.) (NHPA) requires that federal agencies consider the potential effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking. This EA assists the Air Force in identifying relevant or interested consulting parties and initiates the Section 106 process for the proposed undertaking concurrent with the NEPA process.

In accordance with [36 CFR Part 800](#), the Air Force maintains a Programmatic Agreement (PA) with the Texas State Historic Preservation Office (SHPO) under Section 106 for the operation, maintenance, and development of JBASA. Under the Proposed Action, the Air Force would adhere to the project review process as stipulated in the PA. This process outlines the agreed upon procedures for monitoring, recording, qualifying, and mitigating for potential adverse effects on cultural resources under JBASA's management, including those associated with JBASA-BUL. The PA also identifies development program activities that are "exempted" from Section 106 requirements.

The Air Force uses scoping to determine an appropriate level of analysis for potential effects on cultural resources, including historic properties. This EA is also used to document the Air Force's compliance with Section 106, as follows:

1. Determine if the Proposed Action, or elements of the Proposed Action, would potentially affect historic properties or sites;
2. Determine the area of potential effect (APE) for any affected historic properties or sites, as appropriate; and
3. Consult with the SHPO and other relevant or interested parties to establish an appropriate level of effort for gathering additional information by inventory or investigation within the APE.

If no historic properties or sites are identified or are present but would not be affected, this EA would be used to provide a "no historic properties affected" finding to the SHPO and other consulting parties for review. Historic properties or sites potentially affected by the Proposed Action would be subject to further consultation under Section 106.

1.7.3 Federally Recognized Tribal Governments

Numerous federal laws, regulations, policies, and directives protect the rights of indigenous communities and resources that preserve their heritage, culture, or religious beliefs. These include the NHPA, NEPA, *Native American Graves Protection and Repatriation Act* ([25 USC § 3001](#) et seq.) (NAGPRA), and more recent federal policy directives.⁶ DoDI 4710.02, *DOD Interactions with Federally Recognized Tribes*, describes and implements the DoD policy for engaging with tribal governments.

In accordance with DAFI 90-2002, *Interactions with Federally Recognized Tribes*, the Air Force engages with federally recognized Native American Tribes that have potential historic or cultural affiliations to installation lands or lands under managed airspace. As part of the scoping process for this EA, the Air Force identified federally recognized Native American Tribes with a potential interest in the Proposed Action and Alternatives. Those Tribes that expressed an interest in the Proposed Action were invited to participate in this EIAP and as consulting parties under Section 106 of the NHPA.

The Air Force sent scoping letters concerning the Proposed Action and Alternatives to three federally recognized Native American Tribes: The Comanche Nation, Oklahoma; the Mescalero Apache Tribe of the Mescalero Reservation; and the Tonkawa Tribe of Oklahoma. Copies of tribal government correspondence are included in **Appendix A**.

1.7.4 Endangered Species Act

Section 7 of the *Endangered Species Act* ([16 USC § 1531 et seq.](#)) (ESA) requires federal agencies to consider the potential impacts of their proposed actions on ESA-listed threatened and endangered species

⁶ For example, Presidential Memorandums on [Tribal Consultation and Strengthening Nation-to-Nation Relationships](#) (26 January 2021), and [Indigenous Traditional Ecological Knowledge and Federal Decision Making](#) (15 November 2021).

or habitat considered essential to their recovery, otherwise defined and designated as “critical habitat” under the ESA.

As all formal consultations under ESA, Section 7, must be completed prior to the issuance of a NEPA decision document, federal agencies must consult with the US Fish and Wildlife Service (USFWS) or National Oceanic and Atmospheric Administration, as applicable, for actions that may affect federally listed threatened and endangered species or their critical habitat. This EA constitutes an informal consultation under ESA, Section 7, for possible effects of the Proposed Action and Alternatives on threatened or endangered species known or with potential to occur at JBSA-LAK; no ESA-designated critical habitat is present on the Base.

By letter dated 17 March 2022, the Air Force informed the USFWS about the Proposed Action and Alternatives.

On 13 July 2022, the Air Force initiated Section 7 consultation under the ESA for the Proposed Action using the USFWS’ [Information for Planning and Consultation \(IPaC\)](#) tool. Basic information concerning the location and nature of the projects included in the Proposed Action was input into IPaC to obtain an official species list from the USFWS (**Appendix A**). The list identified threatened and endangered species and other protected species (e.g., migratory birds) with potential to be affected by the Proposed Action. This information was reviewed and incorporated into this EA where applicable.

1.8 APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS

Other laws and regulations applicable to the Proposed Action include, but are not limited to:

- Clean Water Act (33 USC § 1251 et seq.) (CWA)
- Resource Conservation and Recovery Act (42 USC § 6901 et seq.) (RCRA)
- Section 438 of the Energy Independence and Security Act (Public Law 110-140) (EISA)
- Comprehensive Environmental Response, Compensation, and Liability Act (42 USC § 9601 et seq.) (CERCLA)
- Federal Clean Air Act (42 USC § 7401 et seq., as amended) (CAA)
- Migratory Bird Treaty Act (16 USC § 703 et seq.) (MBTA)
- Toxic Substances Control Act (15 USC § 2601 et seq.)
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994)
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks (1997), as amended by EO 13296 (2003)

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CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The following sections describe the Proposed Action, alternatives screening process, and alternatives dismissed and retained for analysis in this EA.

2.1 INTRODUCTION

The ADP projects defined as the Proposed Action were selected based on a reasonable likelihood that each would receive funding and could be implemented within approximately 5 years. Most of these projects were conceived prior to the ADP planning phases that concluded in 2019; however, in accordance with AFI 32-1015, the planning process continued thereafter. More recently, the Air Force determined these projects to be of a higher priority and ready for environmental review ([40 CFR § 1502.5](#)). These development actions and real-property improvements are therefore incorporated into the Proposed Action to support JBSA-LAK's military mission in the short-term.

The ADP projects encompassed by the Proposed Action vary in scope from new construction, expansion, and demolition actions to repairs, renovations, and upgrades. The order, timing, and duration of the individual ADP projects would be determined, in part, by this EA. To provide a more comprehensive accounting of potential environmental effects for the multiple types of actions under the Proposed Action, this EA classifies the ADP projects into three general categories:

- **Construction** projects include new development and redevelopment for expansion of the existing built environment, including new buildings, building additions, and new or expanded infrastructure for operational support (e.g., parking and utilities).
- **Demolition** projects include the temporary or permanent removal of existing buildings and structures in support of new development or redevelopment, or to provide future land use flexibility.
- **Infrastructure** projects address deficient components of the existing built environment through repair, renovation, maintenance, or improvement actions. Infrastructure projects range from routine management actions (e.g., road, sidewalk, or utility system repairs or maintenance activities) to renovation or modernization of buildings for continued mission support.

2.2 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action would implement a total of **90** short-term development actions and real-property improvements on JBSA-LAK from approximately 2023 to 2027. Of these projects, **57** would involve construction and demolition projects and **33** would involve infrastructure actions.

As part of the ADP's phasing plan, the Proposed Action would incorporate the planning considerations addressed in other elements of the ADP, as required by AFI 32-1015. For example, the Proposed Action would adhere to development standards for siting the new facilities and regulate design parameters such as height, scale, and orientation. Because the ADP conforms to the IDP, the Proposed Action would also incorporate elements of the IDP. When appropriate, the standards and component plans of the ADP and IDP are discussed and referenced throughout this EA.

The planning principles set forth in AFI 32-1015, and included in the IDP and ADP, are also incorporated into the Proposed Action by design. These principles set objectives for sustainable development, including guidelines and requirements for land, water, and energy conservation. Standards and requirements common to the "planning, design, construction, sustainment, restoration, and modernization of DoD-owned facilities" are included in the Proposed Action, as applicable (National Institute of Building Sciences, 2021). These standards and requirements include:

- UFC 1-200-02, High Performance and Sustainable Building Requirements (2016, as updated), and UFC 3-210-10, Low Impact Development (2015, as updated), in accordance with Guiding Principles

for Sustainable Federal Buildings and Associated Instructions (CEQ, 2016) and implemented by AFI 32-1023, Designing and Constructing Military Construction Projects, and the Air Force Corporate Facilities Standards.

- US Green Building Council (USGBC) or Green Building Initiative (GBI) certification for applicable projects as required by the *Air Force Sustainable Design and Development Implementing Guidance Memorandum* (Air Force Civil Engineer Center [AFCEC], 2017; Air Force, 2011). Applicable projects include:
 - New buildings larger than 5,000 square feet (sf) with construction costs greater than \$3 million; and
 - Building renovations of more than 5,000 sf with construction costs greater than \$3 million and an estimated 50-percent replacement cost.

Under the Proposed Action, USGBC- or GBI-certified projects would meet the federal sustainability requirements as detailed in UFC 1-200-2. Green building designs and practices would also be incorporated into all other ADP projects (i.e., below the thresholds noted above) to the extent practicable.

As components of the IDP, installation facility standards (IFS)⁷ and installation-wide plans, such as those for transportation, energy, and natural and cultural resources management, implement these design and development standards and requirements at the Base level. Those measures that serve to prevent or reduce adverse environmental impacts are incorporated into the Proposed Action by design and described in this EA, where appropriate.

Sections 2.2.1 through **2.2.3** describe the components of the Proposed Action within each JBSA-LAK planning district. Figures showing the proposed locations of the ADP projects for each planning district are presented at the end of this section.

2.2.1 Description of Proposed Action – Kelly Field Annex

The Proposed Action at Kelly Field would implement a total of **23** short-term development actions and real-property improvements from approximately 2023 to 2027. Of these projects, **11** would involve construction and demolition projects and **12** would involve infrastructure actions.

Tables 2-1 and **2-2** list the construction and demolition projects and the infrastructure actions, respectively, under the Proposed Action at Kelly Field. **Figure 2-1** shows the locations for all the ADP projects under the Proposed Action at Kelly Field.

Table 2-1.
List of Proposed Construction and Demolition Projects – Kelly Field

Map ID ^a	Project	Approx. Size or Footprint ^b
C1	Construct flight simulator facility.	8,000
D2	Demolish B-1200, B-1201, B-1202, and B-1203; remove trees at Upson Park to reduce bird-strike risk and 7:1 slope violation.	-4,974
C3	Construct firefighter training facility.	4,123
C4/D4	Construct new ATC tower; demolish existing ATC tower (B-1160) and B-1161.	6,308 -7,621
C5	Construct additional F-16 parking apron for six aircraft.	937,967
C6	Construct taxiway extension from north end of C-5 parking apron to the 149 FW taxiway.	39,321
C7	Construct addition to B-909 for classroom space.	18,000

⁷ IFS for JBSA-LAK are part of the *Joint Base San Antonio Installation Facilities Standards, Volume 1: JBSA Lackland* (Air Force, 2018a).

Map ID ^a	Project	Approx. Size or Footprint ^b
C8	Construct new elevated Hall Boulevard Bridge at Leon Creek to a 25-year flood design.	5,588
C9	Construct addition to B-896 to support simulators and associated functions.	26,400
C10/D10	Demolish B-807 and construct new storage facility to consolidate MWR outdoor recreation functions.	3,500 -2,183
C11	Construct addition to B-874 and consolidate back shops.	15,000

Notes:

a Alphabetical Map IDs correspond with **Figure 2-1**.

b Approximate size in square feet unless noted otherwise.

149 FW = 149th Fighter Wing; ATC = air traffic control; B = Building (e.g., Building 6274 is B-6274); HQ = Headquarters; MWR = morale, welfare, and recreation

Table 2-2.
List of Proposed Infrastructure Projects – Kelly Field

Map ID ^a	Project	Approx. Size ^b
I1	Repair taxiway pavement.	15,468
I2	Renovate B-900 for ALCF (CRF).	6,468
I3	Renovate B-910 for LRS, SFS, CES, and MSG.	65,202
I4	Renovate B-908 (MPF).	17,730
I5	Renovate B-909 and consolidate FSS, communications, and training.	62,188
I6	Repair fire pumps and water storage tanks at B-820.	N/A
I7	Improve soil stabilization of hillside areas by constructing terraces.	50,043 cubic yards
I8	Renovate B-898 (aircraft maintenance hangar).	27,530
I9	Renovate existing AGE facility (B-894).	8,194
I10	Renovate B-876 for media blast.	3,941
I11	Renovate fuel cell and corrosion-control hangar at B-829 and construct addition to B-829.	52,624
I12	Consolidate 502 FSS and 433 AW functions in B-809 and B-817.	13,601

Notes:

a Alphabetical Map IDs correspond with **Figure 2-1**.

b Approximate size in square feet unless noted otherwise.

433 AW = 433d Air Wing; 502 FSS = 502d Force Support Squadron; AGE = aerospace ground equipment; ALCF = Airlift Control Flight; B = Building (e.g., Building 6274 is B-6274); CES = Civil Engineer Squadron; CRF = Contingency Response Force; LRS = Logistics Readiness Squadron; MPF = Military Personnel Flight; MSG = Mission Support Group; N/A = not applicable; SFS = Security Forces Squadron

2.2.2 Description of Proposed Action – Main Base, including Lackland East and West

The Proposed Action at the Main Base would implement a total of **48** short-term development actions and real-property improvements from approximately 2023 to 2027. Of these projects, **36** would involve construction and demolition projects and **12** would involve infrastructure actions.

The Proposed Action at LAK-East would implement a total of **19** ADP projects: **14** construction and demolition projects and **5** infrastructure actions. The Proposed Action at LAK-West would implement a total of **29** ADP projects: **22** construction and demolition projects and **7** infrastructure actions.

Tables 2-3 and **2-4** list the construction and demolition projects and the infrastructure projects, respectively, under the Proposed Action at LAK-East. **Tables 2-5** and **2-6** list the construction and demolition projects and the infrastructure projects, respectively, under the Proposed Action at LAK-West. **Figure 2-2** shows the locations for all the ADP projects under the Proposed Action at LAK-East. **Figure 2-3** shows the locations for all the ADP projects under the Proposed Action at LAK-West.

Table 2-3.
List of Proposed Construction and Demolition Projects – LAK-East

Map ID ^a	Project	Approx. Size or Footprint ^b
D1	Demolish B-4880, B-4884, B-4886, B-4890, B-4895, and B-4897.	-63,223
C2	Construct green space park around the Medical Campus.	288,000
C3	Construct parking lot.	225,000
D4	Demolish B-4429, B-4600, and B-4604.	-7,498
C5	Construct addition to B-4430.	7,500
C6/D6	Demolish B-4550 (Old Wilford Hall Medical Center) and construct pavilion/food truck area.	-1,443,530 18,000
C7	Construct administrative facility.	45,000
C8/D8	Demolish the existing parking lot and construct the Luke Super Gate (potential for additional parking).	60,000 (parking) -1,372 (facilities)
C9	Construct short-term, temporary ballistics shack at Luke East Gate.	60
C10	Construct VOQ lodging at Kenly Avenue.	163,560
C11	Construct sidewalk/bridge to Parade Field/Truemper Street.	5,064
C12	Construct a Memorial Park at the corner of Truemper Street and Kenly Avenue.	148,500
C13	Construct temporary lodging facility at Truemper Street and Kenly Avenue.	30,000
C14	Construct ballistic gate shack at Selfridge East Gate.	60

Notes:

a Numerical Map IDs correspond with **Figure 2-2**.

b Approximate size in square feet unless noted otherwise.

B = Building (e.g., Building 6274 is B-6274); VOQ = Visiting Officer's Quarters

Table 2-4.
List of Proposed Infrastructure Projects – LAK-East

Map ID ^a	Project	Approx. Size ^b
I1	Renovate B-3425 (Blood Donor Center).	23,769
I2	Close Biggs Avenue between Kelly Drive and Truemper Street.	-20,700
I3	Renovate B-2418 (Warhawk Fitness Center).	36,879
I4	Improve Parade Field per the <i>Nodal Plan</i> .	45,000
I5	Renovate B-1508.	3,579

Notes:

a Alphabetical Map IDs correspond with **Figure 2-2**.

b Approximate size in sf unless noted otherwise.

B = Building (e.g., Building 6274 is B-6274)

Table 2-5.
List of Proposed Construction and Demolition Projects – LAK-West

Map ID ^a	Project	Approx. Size or Footprint ^b
D1	Demolish road segment of Arnold Circle behind Mesquite Inn (B-10175).	-10,800
C2	Construct TRS Security Forces Academy (Scott Drive).	45,000
C3	Construct Joint-Use (Air Force/Navy) Student Pavilions (attached to Carter Hall [B-10215]), i.e., small park areas with trees and plaza seating.	117,000
C4	Construct Virtual Technical Training Shoot House (north of B-10670 at Haby's Road).	6,000
C5	Construct parking lot for B-10330.	43,200
C6/D6	Convert drill pad for BMT visitor parking, demolish running track, and construct small park/plaza.	354,960
D7	Demolish B-10701.	-1,530
D8	Demolish B-10706, B-10708, and B-10710.	-452

Map ID ^a	Project	Approx. Size or Footprint ^b
C9	Construct troop walk bridge over Military Drive from ATC Campus to Parade Field.	23,760
C10	Construct perimeter road around the Base.	369,000
C11/D11	Construct detention pond, demolish parking lot north of B-9122 (ATC West Campus).	45,000
C12	Designated Area for temporary facilities.	315,000
D13	Demolish parking lot next to Chaparral Pool along Carswell Avenue (due to flooding).	-13,275
C14	Construct Communication Maintenance Facility next to B-5077.	7,500
C15	Expand detention pond at Selfridge Avenue and Carswell Avenue.	81,900
C16	Construct addition to B-5486 (EOD facility).	8,000
C17	Construct two parking lots to support IAAFA's mission; one northeast of B-7538 and one southeast of B-7538.	67,500
C18/D18	Construct new IAAFA HQ/classroom facility; demolish B-7353 and B-7355.	45,000 -27,887
C19/D19	Construct future dormitory; demolish B-7357 and B-7358.	30,000 -27,678
C20	Construct foreign liaison facilities.	30,000
D21	Demolish B-7448, B-7450, and B-7452.	-38,799
D22	Demolish Melvoher Drive from Metzger Drive to Ent Circle; Realign Intersection with Ent Circle.	-72,000

Notes:

a Numeral Map IDs correspond with **Figure 2-3**.

b Approximate size in square feet unless noted otherwise.

ATC = Airman Training Complex; B = Building (e.g., Building 6274 is B-6274); BMT = basic military training; EOD = Explosives Ordnance Disposal; HQ = Headquarters; IAAFA = Inter-American Air Forces Academy; TRS = Training Squadron

Table 2-6.
List of Proposed Infrastructure Projects – LAK-West

Map ID ^a	Project	Approx. Size ^b
I1	Improve Base shuttle transportation route.	720
I2	Renovate Carter Hall (B-10215).	88,648
I3	Renovate B-10416 for reuse by BMT.	215,824
I4	Renovate B-6420 for 737 TRG BMT HQ.	32,947
I5	Renovate B-6629 or replace for BMT Drum and Bugle Corps (relocate current user).	14,510
I6	Renovate B-7249 for reuse.	9,357
I7	Renovate B-7360 for future tenant.	30,440

Notes:

a Alphabetical Map IDs correspond with **Figure 2-3**.

b Approximate size in square feet unless noted otherwise.

B = Building (e.g., Building 6274 is B-6274); BMT = basic military training; HQ = Headquarters; TRG = Training Group

2.2.3 Description of Proposed Action – Chapman Training Annex

The Proposed Action at CTA would implement a total of **19** short-term development actions and real-property improvements from approximately 2023 to 2027. Of these projects, **10** would involve construction and demolition projects and **9** would involve infrastructure actions.

Tables 2-7 and **2-8** show the construction and demolition and infrastructure projects, respectively, under the Proposed Action at CTA. **Figure 2-4** shows the locations for all the ADP projects under the Proposed Action at CTA.

Table 2-7.
List of Proposed Construction and Demolition Projects – CPA

Map ID ^a	Project	Approx. Size or Footprint ^b
C1	Construct TTF adjacent to existing obstacle course.	180,000
C2	Construct a secure overnight munitions truck holding parking area for transient cargo.	64,467
C3	Construct a latrine for the existing fitness facility.	540
C4/D4	Demolish B-146 and construct a facility to accommodate HPSG and HPTC.	-87,384 30,000
D5	Demolish B-140, -141, -142, -148, and structures associated with the outdoor pool.	-20,108
C6	Construct an AFRC administrative building.	2,500
C7/D7	Demolish B-300; reconfigure fencing and gate.	-611 543 linear feet
C8	Construct a munitions inspection and maintenance facility within the MSA to support future mission growth (i.e., ESQD arc reduction).	90,000
C9	Renovate and expand B-950.	45,970 12,000
C10	Construct a BMT Readiness Training Complex at the BEAST Campus (from old training site).	22,000

Notes:

a Numeral Map IDs correspond with **Figure 2-4**.

b Approximate size in square feet unless noted otherwise.

AFRC = Air Force Reserve Command; B = Building (e.g., Building 6274 is B-6274); BEAST = Basic Expedition Airman Skills Training; BMT = Basic Military Training; ESQD = explosives safety quantity distance; HPSG = Human Performance Support Group; HPTC = Human Performance Training Center; MSA = Munitions Storage Area; TTF = Training Test and Ferry

Table 2-8.
List of Proposed Improvement Projects – CPA

Map ID ^a	Project	Approx. Size ^b
I1	Rebuild Medina Road and water crossing bridges (district-wide).	486,477
I2	Improve perimeter road for SFS and continued use for SWTG runs/trucks.	217,800
I3	Repair and upgrade MSA access control gates.	N/A
I4	Renovate B-150.	52,863
I5	Renovate B-147.	95,592
I6	Renovate B-310.	8,430
I7	Renovate B-242.	13,365
I8	Realign Alpha Range to the SDZ off Patrol Road.	N/A
I9	Provide redundant power at sanitary sewer lift stations.	N/A

Notes:

a Alphabetical Map IDs correspond with **Figure 2.4**.

b Approximate size in square feet unless noted otherwise.

B = Building (e.g., Building 6274 is B-6274); MSA = Munitions Storage Area; N/A = not applicable; SDZ = safety danger zone; SFS = Security Forces Squadron; SWTG = Special Warfare Training Group

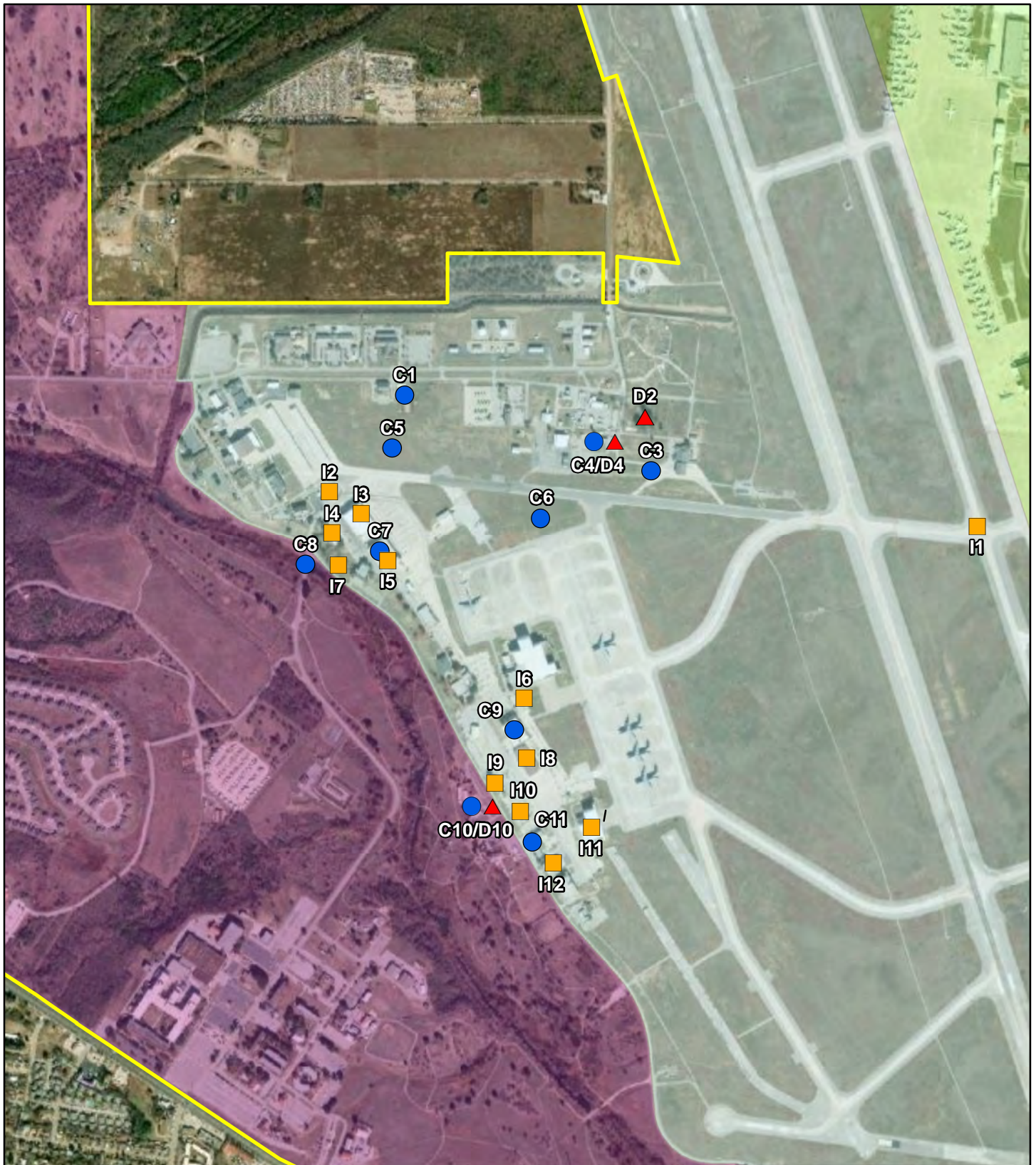
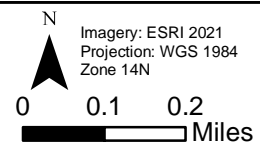


FIGURE 2-1
ADP PROJECTS UNDER
THE PROPOSED
ACTION – KELLY FIELD



- Construction
- ▲ Demolition
- Infrastructure

- JBSA-LAK
- Kelly Field Planning District



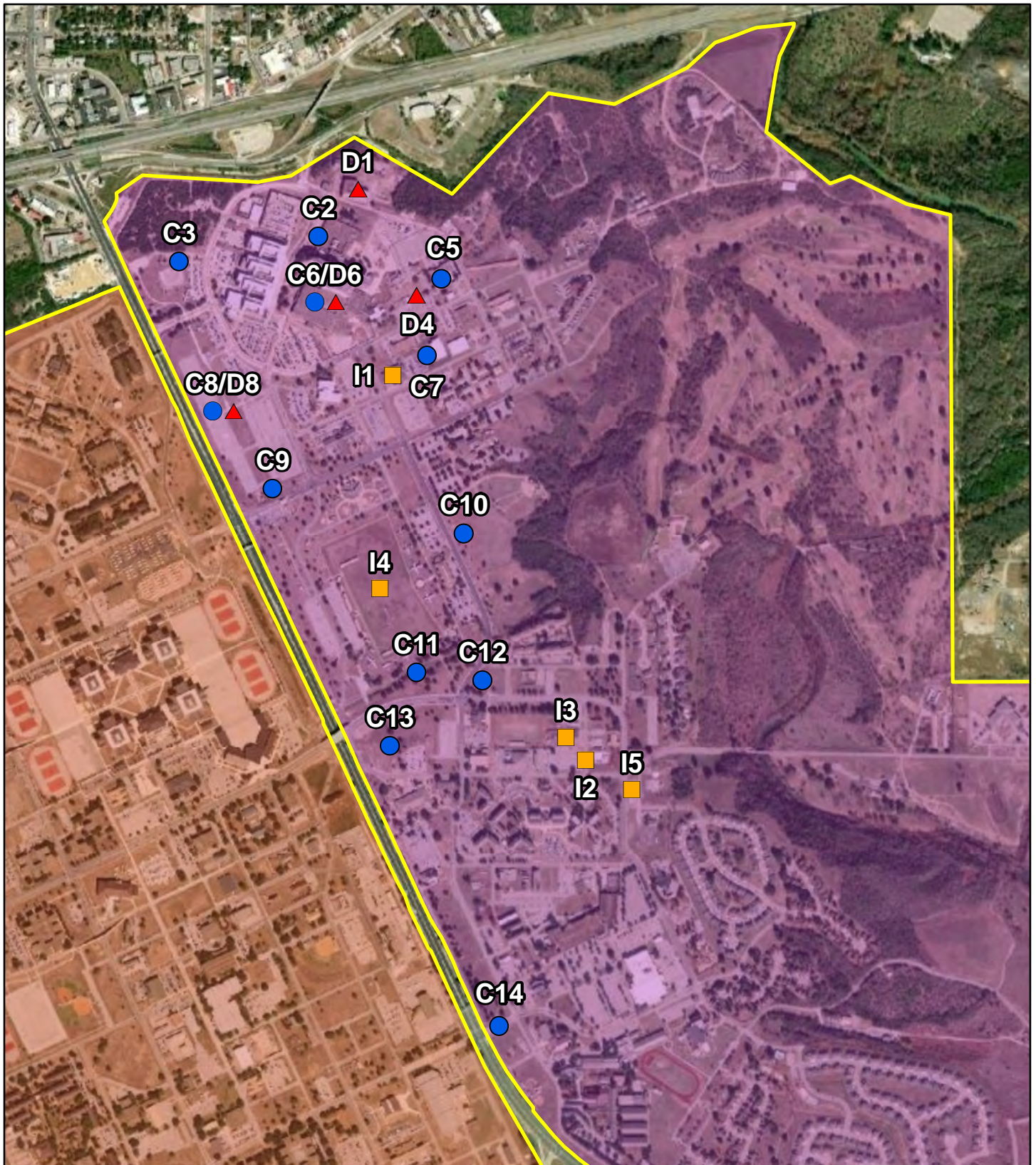
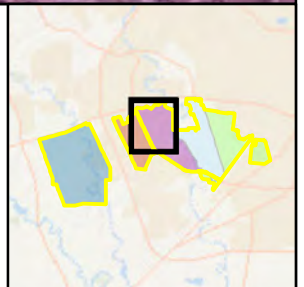
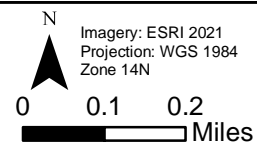


FIGURE 2-2
ADP PROJECTS UNDER
THE PROPOSED
ACTION – LAK-EAST

- Construction
- ▲ Demolition
- Infrastructure

- ▭ JBSA-LAK
- ▭ LAK-East Planning District



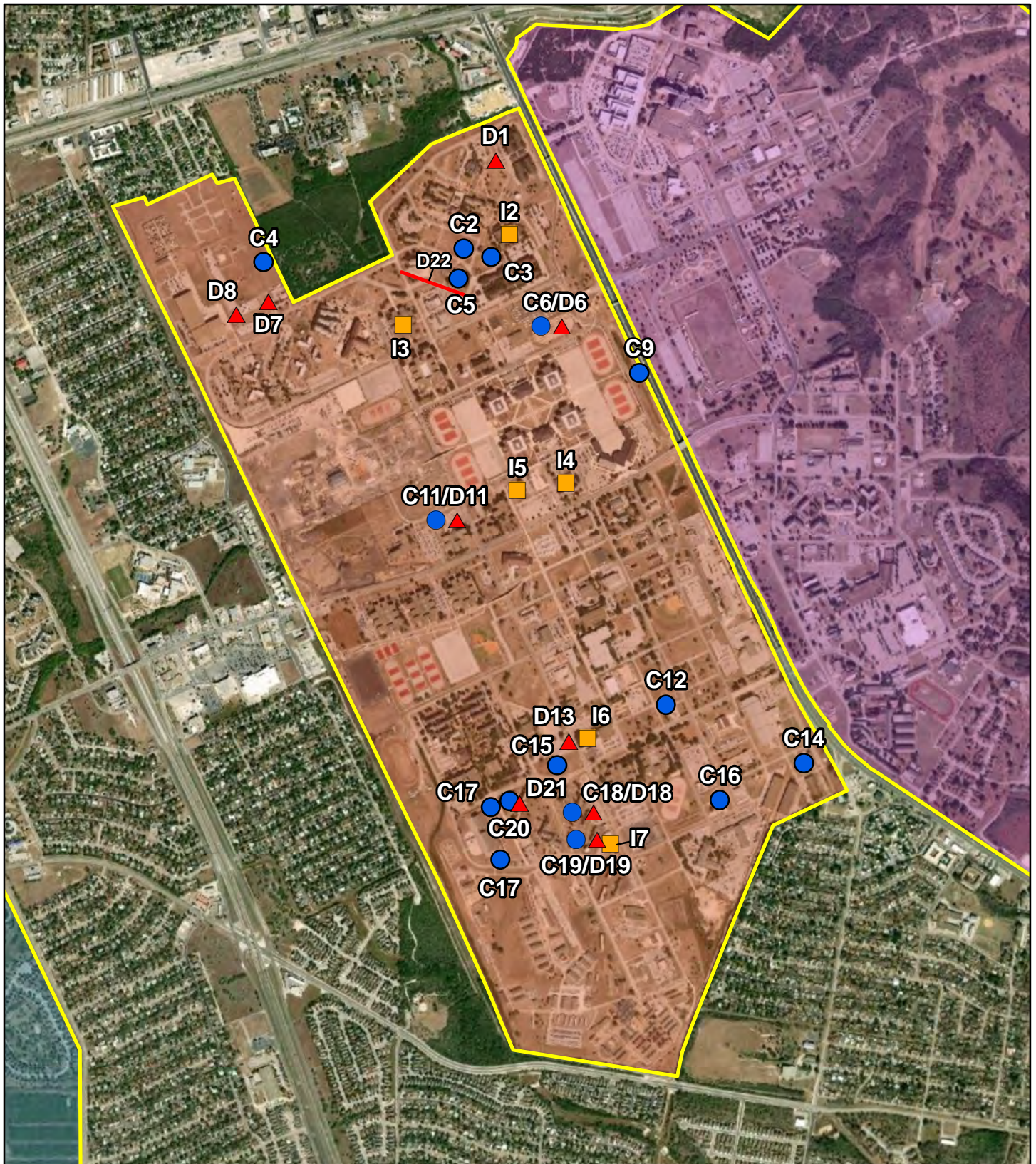


FIGURE 2-3
ADP PROJECTS UNDER
THE PROPOSED
ACTION – LAK-WEST



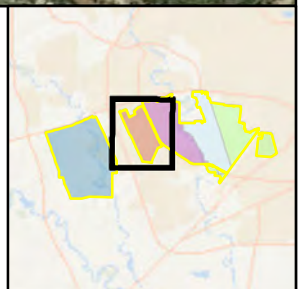
Imagery: ESRI 2021
Projection: WGS 1984
Zone 14N

0 0.1 0.2

Miles

- Construction
- ▲ Demolition
- Infrastructure

- Linear Demolition
- JBSA-LAK
- LAK-West Planning District



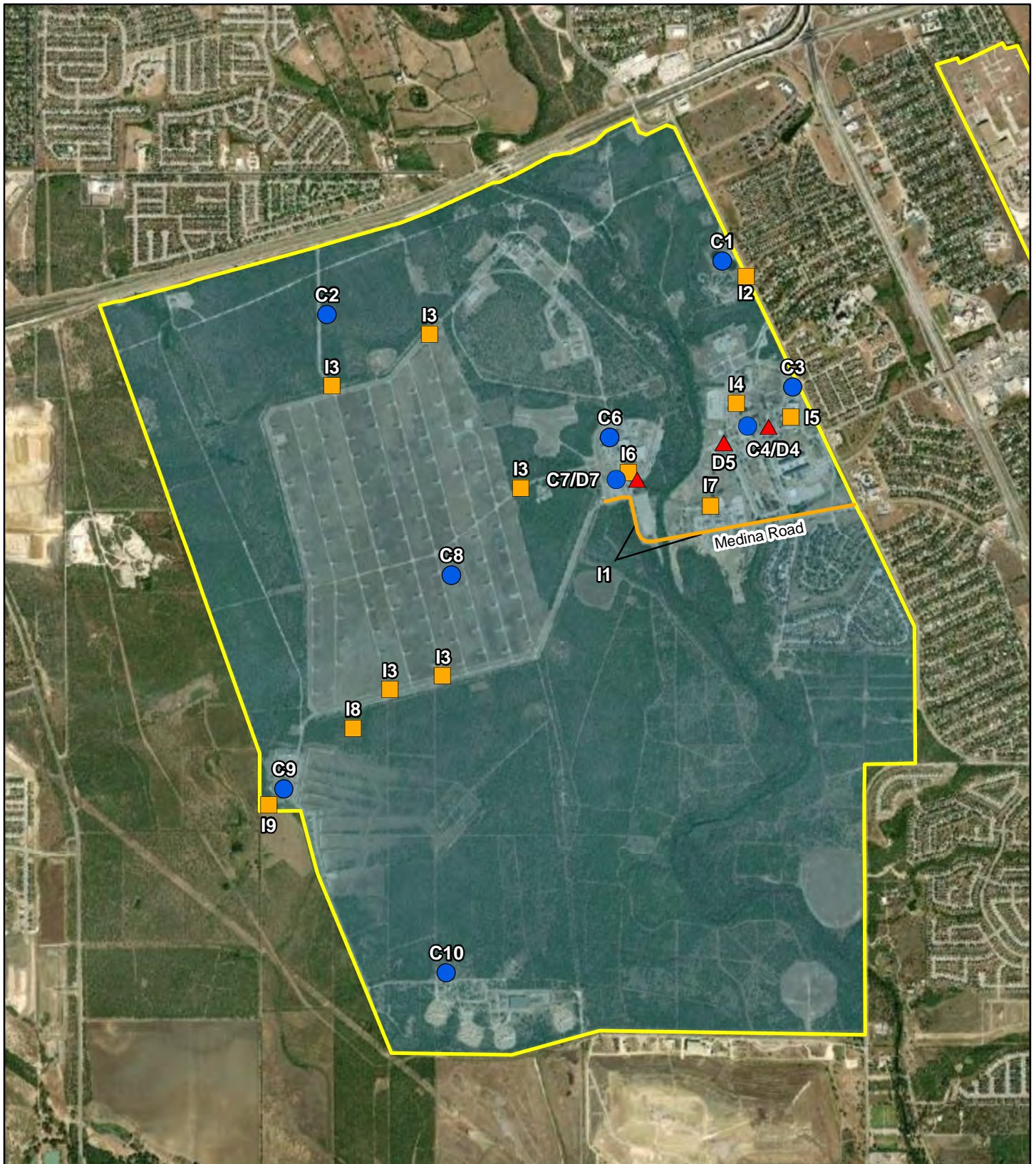
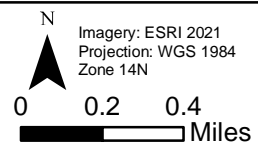
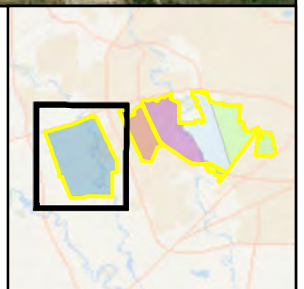


FIGURE 2-4
ADP PROJECTS UNDER
THE PROPOSED
ACTION – CTA



- | | |
|------------------|-------------------------|
| ● Construction | — Linear Infrastructure |
| ▲ Demolition | □ JBSA-LAK |
| ■ Infrastructure | ■ CTA Planning District |



2.3 ALTERNATIVES SCREENING PROCESS

NEPA requires federal agencies to objectively explore and evaluate reasonable alternatives to a Proposed Action. Alternatives not found to be reasonable can be eliminated from evaluation provided the EA or EIS includes a brief rationale for their elimination ([40 CFR § 1502.14\(a\)](#)).

2.3.1 Selection Standards for Alternative Screening

Consistent with [32 CFR § 989.8\(c\)](#), the following selection standards meet the purpose of and need for the Proposed Action at JBSA-LAK and were used to identify reasonable alternatives for analysis in the EA. The supporting alternatives must consider the following:

- Continue, maintain, and enhance mission or mission support capabilities, now or in the future.
- Increase the amount of developable land through more efficient and functional land use.
- Comply with security/setback requirements and operational safety standards.
- Preserve or enhance the quality of life of the military personnel and their dependents that train, work, and/or live on the Base, as well as for visitors of the Base (e.g., Veterans).
- Avoid adverse effects on sensitive or beneficial environmental resources and historic properties or sites, to the extent practicable.
- Comply with federal and Air Force mandates for sustainable design and development.
- Provide flexibility to respond to new or different missions or accommodate future growth.

Based on the screening criteria, the Air Force determined that only the Proposed Action (i.e., the full suite of proposed ADP projects) would meet the purpose and need, as defined by each JBSA-LAK planning district (see **Section 1.3.1**).

Section 2.3.2 describes the alternatives considered but eliminated from detailed analysis for each JBSA-LAK planning district. **Section 2.3.3** discusses additional alternatives considered but eliminated from detailed analysis at an individual project level (i.e., since publication of the ADPs). **Section 2.3.4** describes the alternatives retained for more detailed analysis, including the No Action Alternative.

2.3.2 Alternatives Considered but Eliminated from Detailed Analysis

2.3.2.1 Kelly Field Annex

In 2018, as part of the ADP planning process, the Air Force evaluated alternatives to guide the future development of Kelly Field. Multiple development scenarios (i.e., alternatives) were considered and dismissed as being unable to meet current or future mission requirements. However, three alternatives under consideration were subject to further evaluation by personnel and users of Kelly Field through their participation in a multi-day ADP planning workshop. These participants developed screening criteria to assess whether the alternatives could be considered reasonable to sustain the Kelly Field military mission now and in the future. Each evaluated scenario or alternative, described below, presents a unique strategy and framework for the future development of Kelly Field.

- **Alternative 1** – Expand the boundary of Kelly Field northward along the western side of the runway to relocate the MSA, construct an AT/FP-compliant access control point, improve roads currently prone to flooding, relocate airfield support assets from the PSA, upgrade infrastructure, and preserve space for future mission expansion. The relocation of the MSA under Alternative 1 would orient its associated ESQD zone onto land not suitable for development (i.e., floodplains).
- **Alternative 2** – Identical to Alternative 1 except the MSA would not be relocated to the expansion area.

- **Alternative 3** – In lieu of expansion northward, relocate non-airfield-related units to either LAK-East or LAK-West to create space for future mission expansion. In the short-term, Alternative 3 would focus on infill and recapitalization of existing assets such as roads, utility systems, and related infrastructure.

It was concluded that only Alternative 1 would allow Kelly Field to sustain its mission over the long term.

Because land acquisition to expand the boundary of Kelly Field northward is not imminent, the Proposed Action at Kelly Field includes selected ADP projects from each evaluated alternative. Therefore, the alternatives screening and evaluation process conducted for this ADP is applicable to the Proposed Action and Alternatives subject to analysis in this EA.

2.3.2.2 Main Base – Lackland East

In 2018, as part of the ADP planning process, the Air Force evaluated alternatives to guide the future development of LAK-East. Multiple development scenarios (i.e., alternatives) were considered and dismissed as being unable to meet current or future mission requirements. However, three alternatives under consideration were subject to further evaluation by personnel and users of LAK-East through their participation in a multi-day ADP planning workshop. These participants developed screening criteria to assess whether the alternatives could be considered reasonable to sustain the LAK-East military mission now and in the future. Each evaluated scenario or alternative, described below, presents a unique strategy and framework for the future development of LAK-East.

- **Alternative 1** – Focus on the recapitalization of existing facility and infrastructure assets through repair, renovation, and expansion. For example, focus on sustainment, restoration, and modernization projects that maintain or improve the built environment with respect to mobility (i.e., vehicular and pedestrian), safety, and quality of life. Alternative 1 includes up to three military construction (MILCON) projects and limits building demolitions to a select group based on condition assessment (i.e., minimal growth).
- **Alternative 2** – Focus on the recapitalization of existing facility and infrastructure assets via mission consolidation and repurpose of the built environment. Alternative 2 includes up to five MILCON projects and five building demolitions (i.e., moderate growth).
- **Alternative 3** – Implement the full suite of projects identified to support the military mission at LAK-East, now and in the future. Alternative 3 includes a new, dedicated campus for consolidation of 688 Cyberspace Wing functions (i.e., maximum growth).

It was concluded that only Alternative 3 would allow LAK-East to sustain its mission in the long term.

The Proposed Action at LAK-East includes selected ADP projects from each evaluated alternative. Therefore, the alternatives screening and evaluation process conducted for this ADP is applicable to the Proposed Action and Alternatives subject to analysis in this EA.

2.3.2.3 Main Base – Lackland West

In 2018, as part of the ADP planning process, the Air Force evaluated alternatives to guide the future development of LAK-West. Multiple development scenarios (i.e., alternatives) were considered and dismissed as being unable to meet current or future mission requirements. However, three alternatives under consideration were subject to further evaluation by personnel and users of LAK-West through their participation in a multi-day ADP planning workshop. These participants developed screening criteria to assess whether the alternatives could be considered reasonable to sustain the LAK-West military mission now and in the future. Each evaluated scenario or alternative, described below, presents a unique strategy and framework for the future development of LAK-West.

- **Alternative 1** – Focus on the recapitalization of existing facility and infrastructure assets through repair, renovation, and expansion. For example, focus on sustainment, restoration, and

modernization projects that maintain or improve the built environment with respect to safety, connectivity, flow, and efficiency. Alternative 1 includes up to two MILCON projects and two building demolitions (i.e., minimal growth).

- **Alternative 2** – Focus on the DLI campus. Alternative 2 includes up to five MILCON projects and five building demolitions (i.e., moderate, prioritized growth).
- **Alternative 3** – Focus on the future growth and capacity of the military mission at LAK-West. Alternative 3 includes the full suite of projects identified for this purpose (i.e., maximum growth over the long term).

It was concluded that only Alternative 3 would allow LAK-West to sustain its mission in the long term.

The Proposed Action at LAK-West includes selected ADP projects from each evaluated alternative. Therefore, the alternatives screening and evaluation process conducted for this ADP is applicable to the Proposed Action and Alternatives subject to analysis in this EA.

2.3.2.4 Chapman Training Annex

In 2018, as part of the ADP planning process, the Air Force evaluated alternatives to guide the future development of CTA. Multiple development scenarios (i.e., alternatives) were considered and dismissed as being unable to meet current or future mission requirements. However, three alternatives under consideration were subject to further evaluation by personnel and users of CTA through their participation in a multi-day ADP planning workshop. These participants developed screening criteria to assess whether the alternatives could be considered reasonable to sustain CTA's military mission, now and in the future. Each evaluated scenario or alternative, described below, presented a unique strategy and framework for the future development of CTA.

- **Alternative 1** – Focus on the recapitalization of existing facility and infrastructure assets through repair, renovation, and expansion. Alternative 1 relocates facilities from floodplains but assumes the munition storage area would remain in its current location.
- **Alternative 2** – Focus on the SWTW campus through integration of the BEAST and TORCH training areas. Alternative 2 assumes the munition storage area would remain in its current location.
- **Alternative 3** – Move the Cyber campus to LAK-East and relocate the munitions storage area. Alternative 3 includes the integration of the BEAST and TORCH training areas under Alternative 2; the relocation of the MWD campus from floodplains; and flex space for future mission expansion.

It was concluded that only Alternative 3 would allow LAK-West to sustain its mission in the long term.

The Proposed Action at LAK-West includes selected ADP projects from each evaluated alternative. Therefore, the alternatives screening and evaluation process conducted for this ADP is applicable to the Proposed Action and Alternatives subject to analysis in this EA.

2.3.3 Other Alternatives Considered but Eliminated from Detailed Analysis

Since publication of the ADPs in 2019, in consultation with individual project proponents, the Air Force has continued to evaluate and consider alternatives for the ADP projects under the Proposed Action. Because development planning on military installations is a fluid process, **Appendix C** summarizes available, relevant information about the ADP projects from more recent studies and evaluations conducted at an individual project level. For analysis purposes in this EA, this information is supplementary to the development program recommendations within each of the ADPs for JBSA-LAK. **Chapter 3** of this EA also includes further details about project-specific considerations based on the potential resource or resource area effects of the Proposed Action and Alternatives.

2.3.4 Alternatives Retained for Detailed Analysis

As described above, in **Appendix C** and in **Chapter 3**, where appropriate, the Proposed Action is the only reasonable alternative that would meet the Air Force's purpose and need. Therefore, the Proposed Action is retained as an alternative for more detailed analysis in this EA, along with the No Action Alternative.

2.3.4.1 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the ADP projects, and JBSA-LAK would continue to operate under current conditions. The facility and infrastructure assets of JBSA-LAK would continue to degrade. In the short-term, military training and operations would continue at JBSA-LAK in accordance with the status quo. Over time, the mission support capabilities of the Base would diminish along with its ability to support the future missions and requirements of its tenant activities.

While the No Action Alternative would not satisfy the purpose of and need for the Proposed Action, this alternative is retained to provide a comparative baseline against which to analyze the effects of the Proposed Action, as required under the CEQ regulations ([40 CFR § 1502.14\(c\)](#)). The No Action Alternative reflects the status quo and serves as a benchmark against which the effects of the Proposed Action can be evaluated.

2.4 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

The potential impacts under the Proposed Action and No Action Alternative are summarized in **Table 2-9**. The summary is based on information discussed in detail in **Chapter 3** of this EA and includes a concise definition of the issues addressed and the potential environmental impacts associated with each alternative.

**Table 2-9.
Summary of Environmental Consequences**

Resource Area	Proposed Action	No Action Alternative
Land Use	No significant adverse effects on land use.	No effects on land use.
Air Quality	Minor beneficial effects to air quality criteria pollutant levels within San Antonio-New Braunfels metropolitan statistical area or Bexar County, Texas.	No effects on air quality.
Noise	No significant adverse effects on the noise environment around JBSA-LAK.	No effects on the noise environment.
Earth Resources	Minor beneficial effects to earth resources within Kelly Field and the CTA. No significant adverse effects to earth resources within LAK-East or LAK-West.	No effects on or from earth resources.
Water Resources	No significant adverse effects on water resources on or adjacent to JBSA-LAK. Minor beneficial impacts to wetlands, floodplains, and stormwater infrastructure.	No effects on water resources.
Biological Resources	No significant adverse effects on biological resources on or around JBSA-LAK.	No effects on biological resources.
Cultural Resources	No significant adverse effects on cultural resources at JBSA-LAK.	No effects on cultural resources.
Environmental Justice and Protection of Children	No significant adverse effects on disadvantaged minority or low-income populations of the San Antonio Central Census County Division (CCD).	No effects on environmental justice, including children.
Infrastructure, Transportation, and Utilities	Long-term beneficial impacts to utility or transportation infrastructure associated with JBSA-LAK.	No effects on infrastructure, transportation, or utilities.
Hazardous Materials and Waste	No significant adverse effects on or from hazardous materials and waste on JBSA-LAK.	No effects on hazardous materials and waste.
Safety	Minor beneficial effects to ground, explosive, and flight safety at JBSA-LAK.	No effects to ground, explosive, or flight safety.

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CHAPTER 3 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

This section describes the baseline resource conditions and environmental consequences of the Proposed Action and No Action Alternative.

The methodology used to analyze potential adverse effects that could result from the Proposed Action or No Action Alternative is briefly described in **Section 3.1**. Resources considered but dismissed from detailed analysis in this EA, including a brief justification for their dismissal, are discussed in **Section 3.2**. Resources carried forward for analysis are identified in **Section 3.3**. These resources are further described and analyzed in **Sections 3.4 through 3.15**.

3.1 FRAMEWORK FOR ANALYSIS

To provide a framework for the analyses in this EA, the Air Force defined a study area specific to each resource or sub-resource area. Each ROI delineates a boundary where possible effects from the considered alternatives would have a reasonable likelihood to occur. Beyond these ROIs, potential adverse effects on resources would not be anticipated. For the purposes of analysis, potential effects are described as follows:

- **Beneficial** – positive effects that improve or enhance resource conditions.
- **Negligible** – adverse effects likely to occur but at levels not readily observable by evaluation.
- **Minor** – observable, measurable, tangible adverse effects qualified as below one or more significance threshold(s).
- **Significant** – obvious, observable, verifiable adverse effects qualified as above one or more significance threshold(s); not mitigable to below significance.

When relevant to the analyses in this EA, potential effects are further defined as direct or indirect; short- or long-term; and temporary, intermittent, or permanent.

To determine the potential for “significant” effects under the Proposed Action, the Air Force defined impact thresholds to support the analyses in this EA. Based upon the nature of the Proposed Action and the affected environment, both qualitative and quantitative thresholds were used as benchmarks to qualify effects that may require further Air Force management or mitigation. Further, each resource analysis section (i.e., **Sections 3.5–3.15**) concludes with a cumulative effects analysis considering the Proposed Action in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at JBSA-LAK.

On JBSA-LAK, the Air Force considered reasonably foreseeable future actions to include the other development program recommendations put forth in the JBSA-LAK ADPs for the Kelly Field District, LAK-East, LAK-West, and CTA (Air Force, 2018a, 2018b, 2018c, 2018d) that have not yet been implemented at the Base. These include various short-, mid-, and long-term phase ADP projects not included in the Proposed Action. The Air Force also identified reasonably foreseeable environmental trends and planned actions external to JBSA-LAK that could overlap in time and space with the Proposed Action to result in adverse cumulative effects. **Table 3-1** briefly describes the proposed or planned projects identified by review of available online data that could combine with the Proposed Action on a regional scale.

**Table 3-1
Past, Present, and Reasonably Foreseeable Environmental Trends and Planned Actions**

Name	Description	Timeframe/ Duration	Approximate Distance from Proposed Action
B-9085 – Repairs	Repair BMT recruit housing and training facility.	Complete	N/A
B-9110 – Renovations	Repair and renovate recruit housing and training barracks.	Complete	N/A
Combat Air Forces Training	Provide dedicated contract sorties to improve the quality of training and readiness of 149 FW pilots at JBSA-LAK.	Ongoing	N/A
Security Hill Campus Development	Provide facilities to support the 16 AF units assigned to JBSA-LAK.	Within 1 Year	N/A
City of San Antonio District 4 Parks	Construct multiple parks within City of San Antonio District 4 through the 2022–2027 Parks, Recreation, and Open Spaces Bond Program. Two parks will be located just south of JBSA-LAK Main Base.	Ongoing	0.25 mi
SH 151 – Safety	Eliminate road hazards and make safety improvements on SH 151 from I-410 to the intersection with US 90, just north of Kelly Field.	Within 4 Years	0.25 mi
IH 410 Loop – Widening	Widen the I-410 Loop to add lanes from Ingram Road to the intersection of I-410 and US 90 between the LAK-West and CTA.	Within 1 Year	0.50 mi
US 90/ IH 410 Loop Interchange Improvements	Construct ramps as part of freeway operation improvements.	Within 10 Years	0.50 mi
Spurs Ranch Phase I	Reconstruct Spurs Ranch Road with curb, sidewalks, and drainage and operational improvements.	TBD	2.0 mi
Cagnon Road Bridge	Replace the existing low-water crossing at the Medina River with a bridge capable of withstanding 100-year storm levels.	TBD	2.0 mi

Source: Air Force, 2022; County of Bexar [COB], 2022; JBSA, 2019g, 2022; Texas Department of Transportation, 2022; VBX, 2021
16 AF = 16th Air Force; 149 FW = 149th Fighter Wing; BMT = Basic Military Training; I = Interstate; mi = mile; TBD = to be determined

3.2 RESOURCES ELIMINATED FROM DETAILED ANALYSIS

CEQ regulations state that federal agencies should “identify and eliminate from detailed study the issues which are not significant, or which have been covered by prior environmental review” ([40 CFR § 1501.9\(f\)\(1\)](#)). Accordingly, the Air Force considered but eliminated from further analysis the following resources:

- **Airspace Management** – The Proposed Action would not alter the current Kelly Field airspace configurations. The frequency, tempo, and volume of current aircraft training and operations would not change.
- **Socioeconomics** – The Proposed Action would not increase the number of military personnel or training activities at JBSA-LAK from the current state. During construction, minor, beneficial effects on local economic conditions would likely result from increased expenditures (e.g., procurement of construction materials and temporary jobs) and incidental spending. No adverse socioeconomic effects would be anticipated.
- **Coastal Zone Management** – JBSA-LAK lies outside the jurisdiction of the federally approved [Texas Coastal Zone Management Program](#).

3.3 RESOURCES CARRIED FORWARD FOR DETAILED ANALYSIS

Based on the results of internal and external scoping (see **Section 1.7**), the following resources were carried forward for analysis: land use; air quality; noise, earth, water, biological, and cultural resources; environmental justice and protection of children; infrastructure, transportation, and utilities; hazardous materials and waste, and safety. To provide context for the resource analysis sections, **Section 3.4** briefly describes the environmental setting on and around JBASA-LAK.

3.4 ENVIRONMENTAL SETTING

San Antonio is centrally located in Bexar County, Texas. JBASA-LAK is located southwest of downtown San Antonio and is bordered on the north by US Highway 90. Most of the Installation is contained together within the Interstate 410 Loop, however the CTA is located 1 mile west of the main Installation, just outside of the highway boundary. The entire Installation is part of the larger San Antonio-New Braunfels metropolitan statistical area.

The regional climate is typified by warm, temperate weather conditions. On average, temperatures range from 62 to 95 degrees Fahrenheit (°F) in the summer and from 39 to 74°F in the winter. Average annual precipitation is approximately 33 inches per year. Throughout the year, common weather conditions for San Antonio and the surrounding region include clear, sunny skies, and low wind speeds.

3.5 LAND USE

Land use describes the natural or developed condition of a given parcel of land or area and the type of functions and structures it supports. Land use designations vary by jurisdiction, but commonly used terms include residential, commercial, industrial, agricultural, and recreation/open space. Land use is typically guided and regulated by management plans, policies, regulations, and ordinances that determine the type and extent of land use allowable in specific areas, including specially designated or environmental conservation lands.

The ROI for land use includes the area within the JBASA-LAK Installation boundary.

3.5.1 Existing Conditions

The City of San Antonio Comprehensive Plan includes land within its municipal boundary and extraterritorial jurisdiction in unincorporated Bexar County. The plan establishes an overarching planning framework for the San Antonio metropolitan area and includes three main components: the Comprehensive Plan, Sustainability Plan, and Multimodal Transportation Plan. The Comprehensive Plan regulates and guides land use across the city through regional, functional, and more detailed sub-area plans applicable to specific geographies and functions. However, as a framework plan, it does not alter or negate land use plans for other jurisdictions within the city. With respect to development, Chapter 35 of the Municipal Code collates all associated ordinances to include zoning maps, subdivision regulations, and policies and plans (City of San Antonio [COSA], 2016).

As described in **Section 1.1**, JBASA-LAK is divided into four districts: Kelly Field, LAK-East, LAK-West, and the CTA (**Figures 3-1–3-4**).

JBASA-LAK as a whole contains 11 land use categories across the four districts: Administrative, Training, Aircraft Operations, Airfield Clearance, Airfield Pavement, Community Service, Housing, Industrial, Medical/Dental, Open Space/Buffer Zone, and Outdoor Recreation.

Land use at Kelly Field is partially developed and is primarily focused on the support of airfield missions, as it is home to one of the busiest airfields in the country (**Figure 3-1**). The district includes an 11,500-foot (ft) runway and a sizable area along Leon Creek for outdoor recreation (Air Force, 2019a).

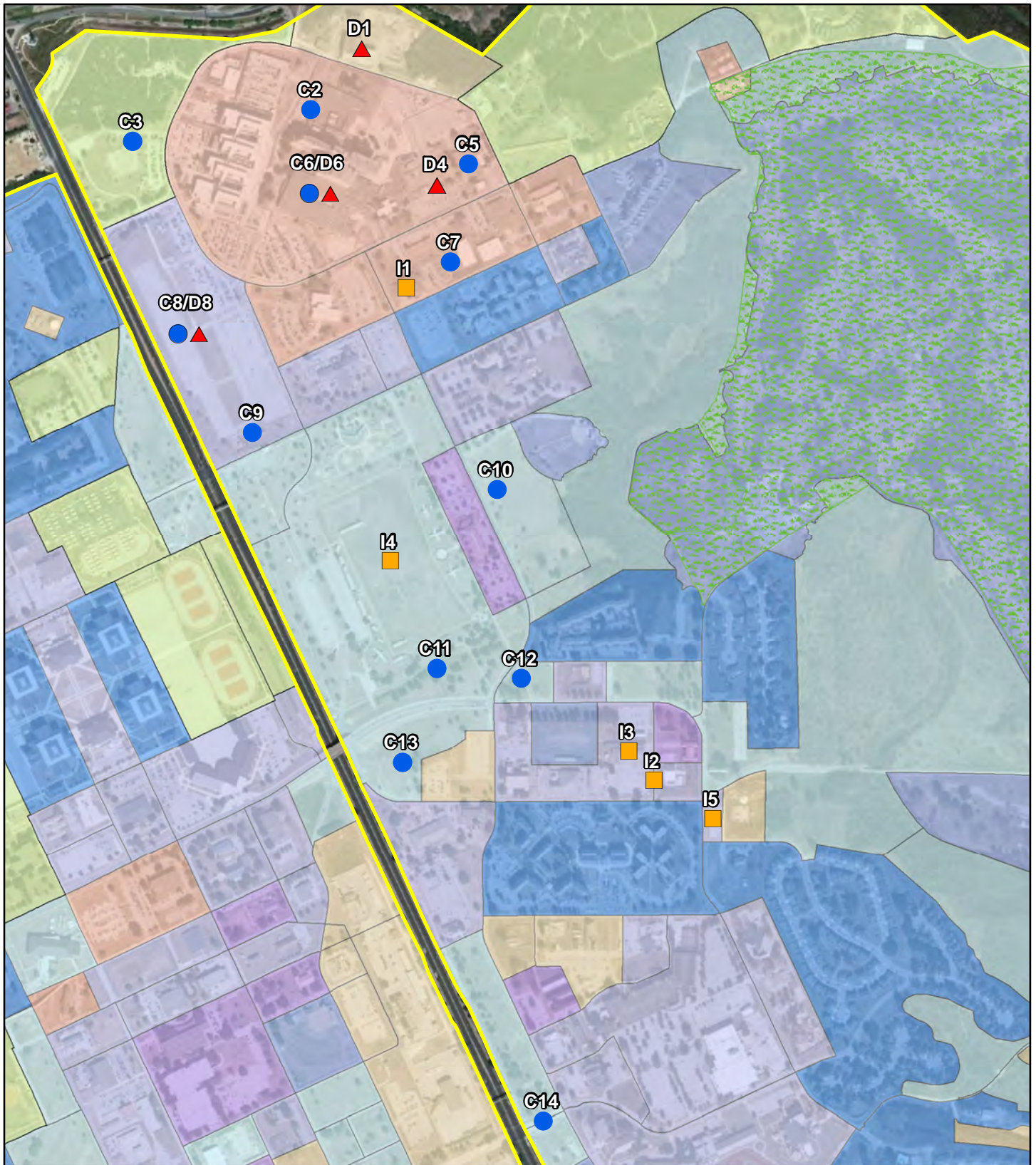
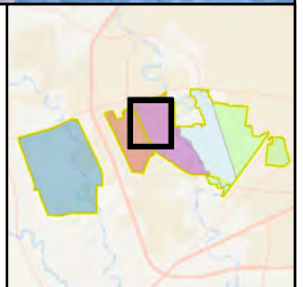


FIGURE 3-2
LAND USE
LAK-EAST

N
 Imagery: ESRI 2021
 Projection: WGS 1984
 Zone 14N
 0 0.05 0.1
 Miles

- | | |
|-----------------------------|--------------------------|
| ● Construction | ■ Golf Course |
| ▲ Demolition | ■ Housing |
| ■ Infrastructure | ■ Industrial Use Area |
| ■ JBSA-LAK | ■ Medical/Dental |
| ■ Administration | ■ Open Space/Buffer Zone |
| ■ Administration - Training | ■ Outdoor Recreation |
| ■ Community Service | |



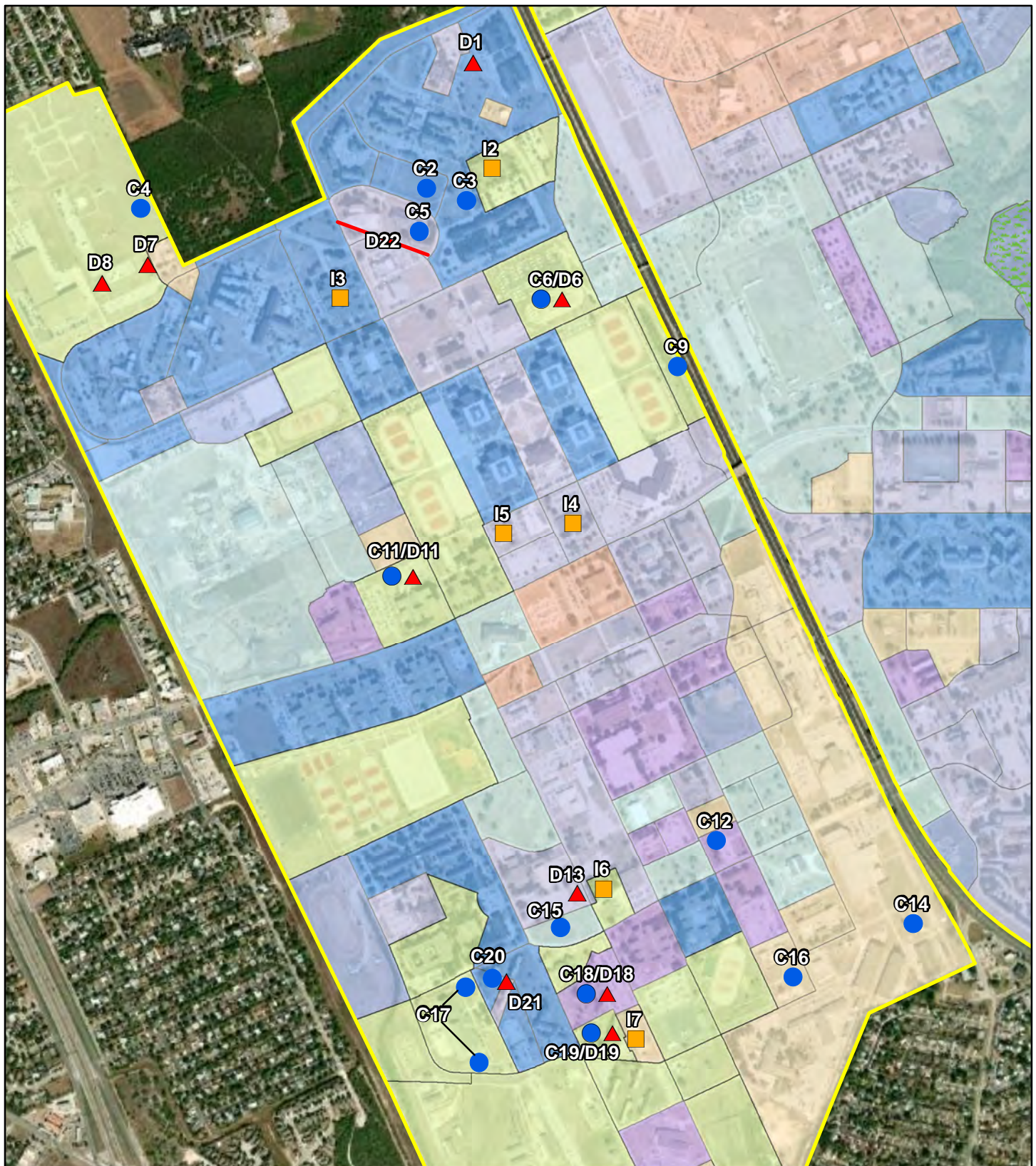
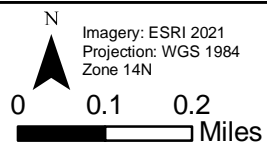
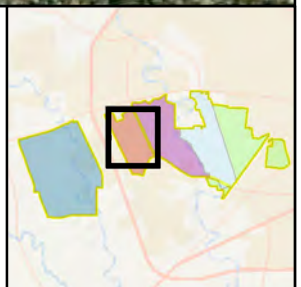


FIGURE 3-3
LAND USE
LAK-WEST



- | | |
|---------------------|-----------------------------|
| ● Construction | ■ Administration - Training |
| ▲ Demolition | ■ Community Service |
| ■ Infrastructure | ■ Housing |
| — Linear Demolition | ■ Industrial Use Area |
| □ JB-SA-LAK | ■ Open Space/Buffer Zone |
| ■ Administration | ■ Outdoor Recreation |



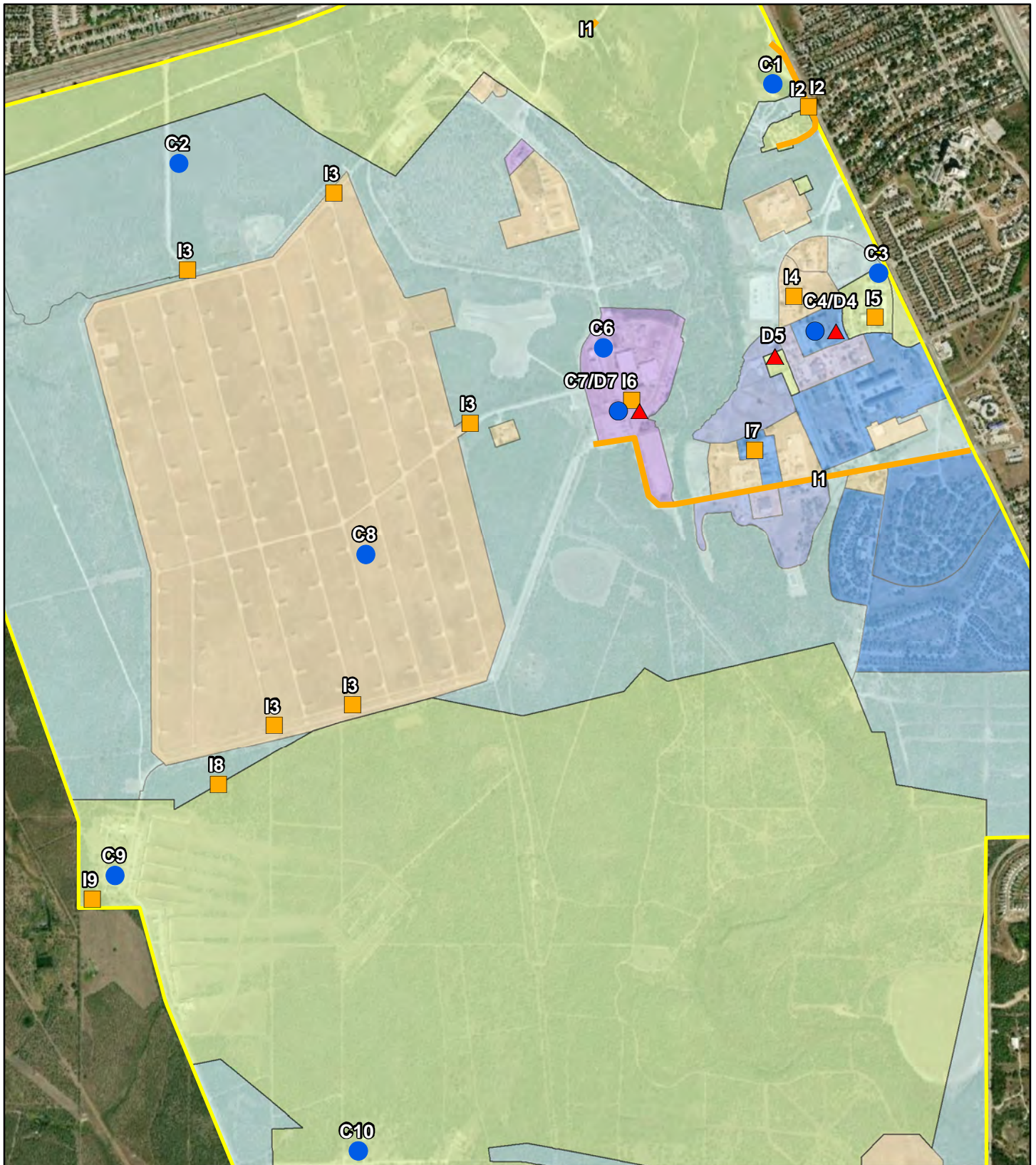
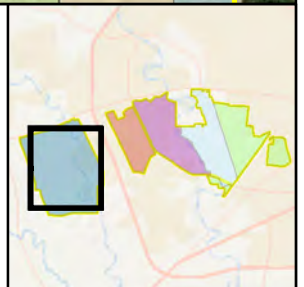


FIGURE 3-4
LAND USE
CTA

N
Imagery: ESRI 2021
Projection: WGS 1984
Zone 14N
0 0.1 0.2
Miles

- | | |
|-------------------------|-----------------------------|
| ● Construction | ■ Administration - Training |
| ▲ Demolition | ■ Community Service |
| ■ Infrastructure | ■ Housing |
| — Linear Infrastructure | ■ Industrial Use Area |
| ■ JBSA-LAK | ■ Open Space/Buffer Zone |
| ■ Administration | ■ Outdoor Recreation |



LAK-East and LAK-West contain the most developed areas of the Installation and together are considered the Main Base (**Figures 3-2 and 3-3**). LAK-East is considered the “Gateway to the Air Force.” It supports the largest training wing in the Air Force and is highly developed for education and training purposes (Air Force, 2019c). Development is mostly concentrated along the western side of the LAK-West planning district. The eastern portion of LAK-West is occupied by Gateway Hills Golf Course and the flood zone associated with Leon Creek, which has constrained development (Air Force, 2019b).

The CTA is located about 1 mile west of the Main Base and supports several key training and readiness functions for the Air Force. The CTA is primarily undeveloped but does contain a small cantonment area, storage bunkers, and firing ranges (**Figure 3-4**). A Ground Range covers most of the southern portion of the Annex.

General land use goals for JBSA-LAK include limiting development surrounding the Base that would otherwise interfere with Base operations, maintaining and continuing the missions and objectives of JBSA-LAK and its training facilities, ensuring global readiness, and continuing to support community economics and growth (Air Force, 2018b).

Land Use Restrictions

Land use at JBSA-LAK is generally restricted within the airfield clear zone (CZ) and associated accident potential zones (APZs) due to risks from aircraft accidents. However, there are exceptions to restrictions, and some types of land use are permitted depending on the zone. JBSA-LAK contains Military Influence Area Overlay Districts for air safety and noise around Kelly Field due to aircraft operation (COB, 2015).

The Air Installation Compatible Use Zones (AICUZ) Program recommends that noise levels, CZs, APZs, and flight clearance requirements associated with military airfield operations be incorporated into local community planning programs in order to maintain the airfield’s operational requirements while minimizing the impact to residents in the surrounding community. Aviation easements guide land use around the Base to applications that are compatible with an operational AFB and the AICUZ Program. The AICUZ report includes land use guidelines that help guide development in the neighboring jurisdictions.

Storage and transportation of munitions are important to operations at JBSA-LAK. ESQD arcs are constraints that can significantly restrain development within these areas. LAK-West contains an area just north of Security Hill that is encumbered by an ESQD arc from munitions storage. There are three explosives holding areas at Kelly Field and two aircraft loading areas that limit development in the southern part of the district. Approximately one-third of the CTA is covered by ESQD arcs from the munition storage and EOD range, with three routes that connect these areas within the CTA to the airfield.

3.5.2 Environmental Consequences

The Air Force defines a significant effect on or from land use within the ROI as one or both of the following:

- land use that would discontinue or substantially change existing or adjacent land use; and
- land use that would be inconsistent with applicable management plans, policies, regulations, and ordinances.

3.5.2.1 No Action Alternative

Under the No Action Alternative, the projects under the Proposed Action would not occur and the existing conditions would remain unchanged. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.5.2.2 Proposed Action

Under the Proposed Action, construction, demolition, and infrastructure activities would occur within the existing boundaries of the Installation. The projects that would occur under the Proposed Action would be implemented in areas of compatible existing land use, which have been previously established. In addition, there would be minor, beneficial long-term impacts with the implementation of the Proposed Action. Existing infrastructure within land use zones would be improved and allow for JBSA-LAK to continue to meet its mission goals. New construction and stabilizing activities would continue to be designed to meet the land use needs of the Base.

Existing land use and land use compatibility under implementation of the Proposed Action would remain generally unchanged. No impacts to land use outside of the boundary of JBSA-LAK would be anticipated. The Proposed Action would be consistent with applicable land use plans and policies on and around JBSA-LAK. Therefore, when considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions, potential cumulative effects to land use would not be likely to occur.

3.5.3 Best Management Practices and Mitigation Measures

Multiple planning documents contributed to the development of the JBSA IDP and JBSA-LAK ADP for all four planning districts: LAK-East, LAK-West, CTA, and Kelly Field. No additional best management practices (BMPs) are recommended for land use beyond those previously incorporated in these planning documents.

No mitigation measures for potential effects on land use under the Proposed Action are recommended.

3.6 AIR QUALITY

Ambient air quality refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) that occurs at a particular geographic location. The ambient air quality levels measured at a particular location are determined by the interaction of emissions, meteorology, and chemistry. Meteorological considerations include wind and precipitation patterns affecting the distribution, dilution, and removal of pollutant emissions. Chemical reactions can transform pollutant emissions into other chemical substances.

Air pollution is a threat to human health and damages trees, crops, other plants, lakes, and animals. It creates haze or smog that reduces visibility in national parks and cities and interferes with aviation. The CAA, passed in 1963 and amended in 1970 and 1980, sets regulatory limits on air pollutants and helps to ensure basic health and environmental protection from air pollution.

Criteria Pollutants

In accordance with CAA requirements, the air quality in a given region or area is measured by the concentration of various pollutants in the atmosphere. Measurements of these “criteria pollutants” in ambient air are expressed in units of parts per million or in units of micrograms per cubic meter. Regional air quality is a result of the types and quantities of atmospheric pollutants and pollutant sources in an area as well as surface topography and prevailing meteorological conditions.

The CAA directed the US Environmental Protection Agency (USEPA) to develop, implement, and enforce environmental regulations that would ensure clean and healthy ambient air quality. To protect public health and welfare, the USEPA developed National Ambient Air Quality Standards (NAAQS), numerical concentration-based standards, for pollutants that have been determined to impact human health and the environment and established both primary and secondary NAAQS under the provisions of the CAA. The primary NAAQS represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant

concentration necessary to protect vegetation, crops, and other public resources in addition to maintaining visibility standards. NAAQS are currently established for the criteria air pollutants ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter (including coarse particulates equal to or less than 10 microns in diameter [PM₁₀] and fine particulates equal to or less than 2.5 microns in diameter), and lead (**Table 3-2**).

Table 3-2
National Ambient Air Quality Standards

Pollutant	Primary/ Secondary ^{a,b}	Averaging Time	Level ^c	Form
Carbon monoxide	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead ^d	Primary and secondary	Rolling 3-month average	0.15 µg/m ³	Not to be exceeded
Nitrogen dioxide ^e	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and Secondary	1 year	53 ppb	Annual mean
Ozone ^f	Primary and Secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particulate matter (PM _{2.5})	Primary	1 year	12.0 µg/m ³	Annual mean, averaged over 3 years
	Secondary	1 year	15.0 µg/m ³	Annual mean, averaged over 3 years
	Primary and Secondary	24 hours	35 µg/m ³	98th percentile, averaged over 3 years
Particulate matter (PM ₁₀)	Primary and Secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur dioxide ^g	Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: [USEPA NAAQS table](#)

Notes:

- Primary Standards: the levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the USEPA.
- Secondary Standards: the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- Concentrations are expressed first in units in which they were promulgated.
- In areas designated nonattainment for the lead standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m³ as a calendar quarter average) also remain in effect.
- The level of the annual nitrogen dioxide standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
- Final rule was signed October 1, 2015, effective December 28, 2015. The previous (2008) ozone standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) ozone standards.
- The previous sulfur dioxide standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous sulfur dioxide standards or is not meeting the requirements of a SIP call under the previous sulfur dioxide standards (40 CFR 50.4(3)). A SIP call is a USEPA action requiring a state to resubmit all or part of its SIP to demonstrate attainment of the required NAAQS.

µg/m³ = micrograms per cubic meter; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; ppb = parts per billion; ppm = parts per million; SIP = state implementation plan

Ozone is not usually emitted directly into the air but is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants, or “ozone precursors.” These ozone precursors consist primarily of nitrogen oxides and volatile organic compounds that are directly emitted from a wide range of emission sources. For this reason, regulatory agencies limit atmospheric ozone concentrations by controlling volatile organic compound pollutants (also identified as reactive organic gases) and nitrogen oxides.

When a region or area meets NAAQS for a criteria pollutant, that region or area is classified as “attainment” for that pollutant. When a region or area fails to meet NAAQS for a criteria pollutant, that region or area is classified as “nonattainment” for that pollutant. In cases of nonattainment, the affected state, territory, or local agency must develop a state implementation plan (SIP) for USEPA review and approval. The SIP is an enforceable plan developed at the state level that lays out a pathway for how the state will comply with air quality standards. If air quality improves in region that is classified as nonattainment and the improvement results in the region meeting the criteria for classification as attainment, then that region is classified as a “maintenance” area.

Greenhouse Gas

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions are generated by both natural processes and human activities. The accumulation of GHGs in the atmosphere helps regulate the earth’s temperature and contribute to global climate change. GHGs include water vapor, carbon dioxide, methane, nitrous oxide, ozone, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth’s surface. The global warming potential of a particular gas provides a relative basis for calculating its carbon dioxide equivalent (CO₂e) or the amount of CO₂e of the emissions of that gas. Carbon dioxide has a global warming potential of 1 and is therefore the standard by which all other GHGs are measured. The GHGs are multiplied by their global warming potential, and the resulting values are added together to estimate the total CO₂e.

The USEPA regulates GHG primarily through a permitting program known as the GHG Tailoring Rule. This rule applies to GHG emissions from large stationary sources. Additionally, the USEPA promulgated a rule for large GHG emission stationary sources, fuel and industrial gas suppliers, and carbon dioxide injection sites if they emit 25,000 metric tons or more of CO₂e per year ([40 CFR § 98.2\(a\)\(2\)](#)).

3.6.1 Existing Conditions

JBSA-LAK is located in Bexar County in Texas, and within the Metropolitan San Antonio Intrastate Air Quality Control Region (AQCR) ([40 CFR § 81.40](#)). The ROI for air quality is JBSA-LAK and its environs. Effective 7 November 2022, Bexar County is classified as “moderate nonattainment” for ozone (O₃) (TCEQ, 2022). This new designation requires the San Antonio area to comply with new USEPA air quality regulations and meet the ozone standard of 70 parts per billion by 24 September 2024 (COSA, 2022). Bexar County is in attainment for other criteria air pollutants.

As a federal installation that is considered a “major source” contributor for air pollution, JBSA-LAK maintains a Title V Operating Permit, issued by the Texas Commission on Environmental Quality (TCEQ), which requires monitoring emissions and reporting the findings. Title V is a federal program designed to standardize air quality permits and the permitting process for major sources of emissions across the country and requires the USEPA to establish a national operating permit program. USEPA defines a major source as a facility that emits or has the potential to emit any criteria pollutant or hazardous air pollutant at levels equal to or greater than the major source threshold. The major source threshold for criteria pollutants may vary depending on the attainment status (e.g., marginal, serious, extreme) of the geographic area in which the facility is located.

3.6.1.1 Air Emission Sources at JBSA-LAK

JBSA-LAK operates under Title V Permit Number 01393/Regulatory Entity Number: RN100542729. There are numerous sources of air emissions at JBSA-LAK that contribute to the total emissions reported at the end of each calendar year. Emissions sources include, but are not limited to, the following:

- internal combustion sources; e.g., emergency generators (diesel fuel) and general-purpose generators (diesel fuel)
- external combustion sources; e.g., boilers, heaters, spray booth heaters and bake-off ovens
- munitions
- architectural coatings
- fuel storage tanks
- gasoline delivery vessel testing and use
- surface and spray coating operations; e.g., surface and spray coating (paint booth) operations
- solvent cleaning (degreasing) operations and material usage; e.g., solvent cleaning equipment
- miscellaneous chemical usage
- abrasive cleaning
- cooling tower operations
- woodworking operations; e.g., dust collection operations

3.6.1.2 Regional Meteorology

The region around JBSA-LAK has a transitional humid subtropical climate to a semi-arid climate that features very hot, long, and humid summers and mild-to-cool winters. The geographic area that encompasses JBSA-LAK is subject to descending northern cold fronts in the winter that result in cool-to-cold nights that reach temperatures at or near freezing. In the spring and fall, the region experiences high humidity and warm weather.

JBSA-LAK experiences about a dozen subfreezing nights each year, typically accompanied by snow, sleet, or freezing rain; accumulation of snow is very rare. Winters may pass without any frozen precipitation at all, and up to a decade has passed between snowfalls in the past. According to the National Weather Service, there have been 32 instances of snowfall (a trace or more) in San Antonio in the past 122 years. Prior to 2021, snow was most recently seen on 7 December 2017, when 1.9 inches of snow coated the city and surrounding areas.

In the geographic region of JBSA-LAK, July and August are the average warmest months, with an average high of 95°F. The highest recorded temperature was 111°F on 5 September 2000. The average coolest month is January. The lowest recorded temperature was 0°F on 31 January 1949. May, June, and October experience the most precipitation for that area, and flooding can occur. The average annual precipitation is 29.03 inches, with maximum and minimum annual accumulations of 52.28 inches and 10.11 inches, respectively.

3.6.2 Environmental Consequences

3.6.2.1 Evaluation Criteria

CAA Section 176(c), "General Conformity," requires federal agencies to demonstrate that their proposed activities would conform to the applicable SIP for NAAQS attainment. General Conformity applies to nonattainment and maintenance areas. If the emissions from a federal action proposed in a nonattainment

area exceed annual *de minimis* thresholds identified in the rule, a formal conformity determination is required of that action. The thresholds are more restrictive as the severity of the nonattainment status of the region increases.

In accordance with [40 CFR § 93.153](#) a conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or maintenance area caused by a federal action would be equal to or exceed any of the rates in paragraphs 40 CFR § 93.153(b)(1) or (2). Paragraph (b)(1) of 40 CFR § 93.153 lists *de minimis* values based on the severity of nonattainment. Bexar County, within the Metropolitan San Antonio Intrastate AQCR, is considered to be in “moderate nonattainment”; therefore, *de minimis* value for ozone is 100 tons per year (tpy).

For attainment area criteria pollutants other than lead, the project air quality analysis used USEPA's Prevention of Significant Deterioration (PSD) permitting threshold of 250 tpy as an initial indicator of the local significance of potential impacts to air quality. Due to the toxicity of lead, using the PSD of 250 tpy attainment area lead threshold as an indicator of potential air quality impact insignificance would not be protective of human health or the environment. Therefore, the *de minimis* value of 25 tpy is used instead.

In the context of criteria pollutants, the analysis compared the annual net increase in emissions estimated for the Proposed Action to the applicable threshold(s). If the annual net increase in emissions in Bexar County is below 100 tpy for ozone precursors (nitrogen oxides or volatile organic compounds), 25 tpy for lead, and 250 tpy for the remaining criteria pollutants, then the Proposed Action would not be subject to any further conformity determination, and the air quality impacts would not be considered significant.

The environmental impact methodology for air quality impacts presented in this EA is derived from Air Force Manual (AFMAN) 32-7002, *Environmental Compliance and Pollution Prevention* (2020). The Proposed Action is broken down into basic units. For example, a basic development project that consists of replacing a building with a new building could be broken down into demolition (sf), grading (sf), building construction (sf and height), architectural coatings (sf), and paving (sf). These data are then input into the Air Force's Air Conformity Applicability Model (ACAM), which models emissions based on the inputs and estimates air emissions for each specific criteria and precursor pollutant, as defined in the NAAQS. Assumptions of the model, methods, and detailed summary results are provided in **Appendix D** of this EA.

3.6.2.2 No Action Alternative

Under the No Action Alternative, the projects under the Proposed Action would not occur and the existing conditions would remain unchanged. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.6.2.3 Proposed Action

The Proposed Action would involve construction, demolition, and infrastructure projects at JBSA-LAK. Construction activities associated with the projects would occur in phases from approximately 2023 to 2027. The projects are in a conceptual phase and no construction schedule has been developed as of the writing of this EA. As such, the activities in the Proposed Action have been combined and entered into ACAM as one large project spanning 5 years. Under the Proposed Action, temporary construction workers would support the individual construction projects, but no permanent, long-term increase to the population of JBSA-LAK is anticipated to occur. **Table 3-3** summarizes the results of the ACAM analysis for JBSA-LAK for the duration of construction, demolition, and infrastructure projects under the Proposed Action.

**Table 3-3
ACAM Calculations for JBSA-LAK**

Year	Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
			Indicator (ton/yr)	Exceedance (yes or no)
NOT IN A REGULATORY AREA				
2023	VOC	4.513	100	No
	NOx	4.074	100	No
	CO	3.875	250	No
	SOx	0.010	250	No
	PM ₁₀	38.616	250	No
	PM _{2.5}	0.153	250	No
	Pb	0.000	25	No
	NH ₃	0.006	250	No
	CO _{2e}	807.4	N/A	N/A
2024	VOC	4.429	100	No
	NOx	2.786	100	No
	CO	3.004	100	No
	SOx	0.004	250	No
	PM ₁₀	38.525	70	No
	PM _{2.5}	0.061	250	No
	Pb	0.000	25	No
	NH ₃	0.006	250	No
	CO _{2e}	-389.8	N/A	N/A
2025	VOC	4.347	100	No
	NOx	1.526	100	No
	CO	2.137	100	No
	SOx	-0.002	250	No
	PM ₁₀	38.435	70	No
	PM _{2.5}	-0.029	250	No
	Pb	0.000	25	No
	NH ₃	0.006	250	No
	CO _{2e}	-1587.1	N/A	N/A
2026	VOC	4.293	100	No
	NOx	0.532	100	No
	CO	1.302	100	No
	SOx	-0.008	250	No
	PM ₁₀	38.359	70	No
	PM _{2.5}	-0.104	250	No
	Pb	0.000	25	No
	NH ₃	0.006	250	No
	CO _{2e}	-2784.3	N/A	N/A
2027	VOC	4.238	100	No
	NOx	-0.462	100	No
	CO	0.467	100	No
	SOx	-0.014	250	No
	PM ₁₀	38.283	70	No
	PM _{2.5}	-0.180	250	No
	Pb	0.000	25	No
	NH ₃	0.006	250	No
	CO _{2e}	-3981.6	N/A	N/A

Year	Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
			Indicator (ton/yr)	Exceedance (yes or no)
2028 – Steady State	VOC	-0.273	100	No
	NOx	-4.972	100	No
	CO	-4.177	100	No
	SOx	-0.030	250	No
	PM ₁₀	-0.378	70	No
	PM _{2.5}	-0.378	250	No
	Pb	0.000	25	No
	NH ₃	0.000	250	No
	CO _{2e}	-5986.1	N/A	N/A

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; N/A = not applicable; NH₃ = ammonia; NOx = nitrogen oxides; Pb = lead; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; SOx = sulfur oxide; VOC = volatile organic compound

Estimated total annual emissions would not exceed the *de minimis* or PSD permitting thresholds outlined in **Section 3.6.2.1** for any criteria pollutant or precursor for any of the years presented. Therefore, impacts from the Proposed Action on regional air quality would be expected to be minor and no adverse impacts would be expected to occur. Based on the ACAM modeling, the net change in emissions associated with this project would be anticipated to be beneficial in both the short and long term. The “steady-state” emissions calculations represent anticipated net change in long-term emissions resulting from the project, which would be anticipated to be beneficial for several criteria pollutants. The resulting ACAM steady-state emissions for some criteria pollutants would decline with implementation of the Proposed Action and are depicted by negative numbers in **Table 3-3**. The reduction in steady-state emissions would be attributed to the fact that the Proposed Action would reduce the square footage of the built environment through demolition. This reduction in building square footage would reduce the amount of energy required for maintenance, thereby reducing the anticipated overall emissions in the future. The calculated emissions would be minimal for the Proposed Action and would represent a conservative estimate of emissions as a byproduct of heating the buildings.

Emissions for CO_{2e} do not have a regulatory threshold; however, estimated emissions for CO_{2e} are presented in **Table 3-3** to demonstrate that CO_{2e} emissions would also be low when compared to GHG emissions of 25,000 metric tons or more associated with large GHG sources.

Under the Proposed Action, Bexar County and the City of San Antonio would continue to revise and implement the SIP for attainment of ozone and to maintain attainment status for all other criteria pollutants. Enforcement of the General Conformity Rule would also continue within Bexar County and the Metropolitan San Antonio AQCR. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions, potential cumulative effects to air quality would not be likely to occur.

3.6.3 Best Management Practices and Mitigation Measures

The Air Force would require contractors to implement the following BMPs to reduce the potential air quality effects of the Proposed Action:

- Comply with JBSA environmental specifications during construction projects.
- Minimize vehicle idling by turning off equipment and vehicles when not in use.
- Cover dump truck beds while in transit or not in use to minimize fugitive dust emissions.
- Regularly water stockpiles or unpaved areas to minimize fugitive dust emissions.

No mitigation measures for potential effects on air quality under the Proposed Action are recommended.

3.7 NOISE

Noise is undesirable or unwanted sound that interferes with verbal communication and hearing. Sound pressure level, described in decibels, is used to quantify sound intensity. Sound level measurements used to characterize sound levels sensed by the human ear are designated “A-weighted” decibels (dBA).

The *Noise Control Act of 1972* ([Public Law 92-574](#)) directs federal agencies to comply with applicable federal, state, and local noise control regulations. In 1974, the USEPA provided information suggesting continuous and long-term noise levels greater than 65 dBA are normally unacceptable for noise-sensitive receptors such as residences, schools, churches, and hospitals.

3.7.1 Existing Conditions

As is normal for military installations with a flying mission, the primary driver of noise at JBASA-LAK is aircraft operations. Kelly Field is equipped with one runway, Runway 16/34, which is located on the eastern side of the Base. The runway is approximately 11,550 feet long by 150 feet wide and services fixed-wing and rotary-wing aircraft. The normal hours of operation at the airfield are during acoustic daytime (from 7 am to 10 pm), seven days a week, except for in the observance of federal holidays. It is atypical, but the airfield may occasionally require operation during acoustic nighttime (10 pm to 7 am). The Installation performed a total of approximately 36,000 flight operations in 2018 (Air Force, 2018f).

Noise contours align with the runway at Kelly Field and follow the main flight paths for arrivals, departures, and other training flight patterns at the airfield. The highest noise levels are concentrated over the airfield and along the runways. The Air Force uses the Day-Night Average Sound Level (DNL) metric to describe the cumulative noise exposure that results from all aircraft operations. DNL is a standard noise metric created by the USEPA to describe the effects of noise on humans and is used throughout the US. DNL at JBASA-LAK and its environs has been reduced by approximately 70 percent from 2008 to 2019 as a result of improved utilization, reconfiguration of flight tracks to avoid sensitive areas, reduction in nighttime flying, and use of newer aircraft with quieter engines.

In addition to flight noise, other sources, such as day-to-day operations activities, maintenance, industrial functions associated with airfield operations, as well as ground equipment and vehicular transportation, also contribute to the noise environment at JBASA-LAK. Aircraft maintenance may require powered engine maintenance runs on aircraft parking ramps, run-up areas, parking pads, or just outside of maintenance hangars. High-powered engine maintenance runs are typically conducted in acoustical enclosures. These engine runs are also typically conducted during acoustical daytime hours.

The noise environment at JBASA-LAK contains different sources that are consider either continuous or impulsive. Impulsive noise refers to sudden or instantaneous noise events that occur intermittently and can be perceived as more disruptive than the continuous nature of aircraft operational noise. CTA houses four training areas—a small arms range, BEAST area, EOD training area, and security forces training area—that contribute to the impulsive noise environment of JBASA-LAK. Peak Sound Pressure Level is used by the Air Force as the primary metric for operational noise at CTA. The metric is used to quantify the short and instantaneous noise events, such as explosive detonation or large-caliber weapon firing. Existing noise impacts from each of the training locations extend beyond the Installation boundaries. Most of the training noise impacts occurs on undeveloped, agricultural, or commercial land south of CTA; however, in some instances, the noise impacts from these training activities may overlap with residential communities.

3.7.2 Environmental Consequences

3.7.2.1 Evaluation Criteria

When evaluating noise effects, several aspects are examined:

- the degree to which noise levels generated by training and operations, as well as construction, demolition, and renovation activities, would be higher than the ambient noise levels;
- the degree to which there would be hearing loss and/or annoyance; and
- the proximity of noise-sensitive receptors (e.g., residences, schools, hospitals, parks) to the noise source.

An environmental analysis of noise includes the potential effects on the local population and estimates the extent and magnitude of the noise generated by the Proposed Action and Alternatives.

3.7.2.2 No Action Alternative

Under the No Action Alternative, the projects included in the Proposed Action would not occur and the existing conditions would remain unchanged. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.7.2.3 Proposed Action

Proposed projects under the Proposed Action would include construction, demolition, and infrastructure activities that would occur entirely within the boundaries of JBSA-LAK. The affected environment for noise effects from the Proposed Action and ongoing operations is focused from 0.5 mile to 1 mile of the proposed projects.

Noise modeling results indicate that existing DNLs range from 60 dBA DNL to 85 dBA across JBSA-LAK and within the vicinities of the proposed projects (Air Force, 2019f). Noise associated with the operation of construction equipment is generally short term, intermittent, and localized, with the loudest machinery typically producing peak sound pressure levels ranging from 86 to 95 dBA at a 50-foot distance from the source (**Table 3-4**).

Table 3-4
Peak Sound Pressure Level of Construction Equipment from 50 Feet

Equipment	Sound Pressure Level (dBA)
Bulldozer	95
Scraper	94
Front Loader	94
Backhoe	92
Grader	91
Crane	86

Source: Reagan and Grant, 1977
dBA = A-weighted decibel

Construction noise typically does not generate a predicted noise exposure of 65 dBA DNL or greater even at extremely high rates of operation because the equipment itself does not generate noise that would produce a 65-dBA DNL when averaged over a year. Additionally, adherence to standard Air Force Occupational Safety and Health regulations that require hearing protection along with other personnel protective equipment and safety training would minimize the risk of hearing loss to construction workers. Noise associated with construction and demolition projects under the Proposed Action would not cause any significant direct or indirect impacts on noise-sensitive receptors. Projects would continue to be planned in accordance with local AICUZ studies to maintain the existing noise environment. Therefore, when considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions, potential cumulative effects to the noise environment would not be likely to occur.

There would be no operational increases in noise during aircraft operations or during explosive and munitions training resulting from implementation of the Proposed Action.

3.7.3 Best Management Practices and Mitigation Measures

No mitigation measures for potential effects on noise resources under the Proposed Action are recommended.

3.8 EARTH RESOURCES

Earth resources include geology, topography, and soils. Geology refers to the structure and configuration of surface and subsurface features. Characteristics of geology include geomorphology, subsurface rock types, and structural elements. Topography refers to the shape, height, and position of the land surface. Soil refers to the unconsolidated materials overlying bedrock or other parent material. Soils are defined by their composition, slope, and physical characteristics. Attributes of soil, such as elasticity, load-bearing capacity, shrink-swell potential, and erodibility, determine its suitability to support a particular land use.

Prime farmland, as defined by the US Department of Agriculture (USDA) in the *Farmland Protection Policy Act* ([7 USC §§ 4201–4209](#)), is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses (USDA, 1993).

The ROI for earth resources is the Installation boundaries of JBSA-LAK.

3.8.1 Existing Conditions

3.8.1.1 Geology

JBSA-LAK is situated just south of the edge of the Edwards Plateau, which is part of the Great Plains physiographic province. A large, faulted limestone formation, the Balcones Escarpment forms the southern and eastern portions of the Edwards Plateau. JBSA-LAK is located at the base of the Balcones Escarpment and within the Blackland Prairie physiographic area.

The geology underlying JBSA-LAK originated from several different geological periods. These formations primarily consist of limestone and marl, with lesser amounts of gravel, sand, silt, shale, and clay. JBSA-LAK lies within the Balcones Fault Zone. In this area, there are several northeast-trending normal faults. One of these faults crosses both JBSA-LAK Main Base and the CTA, although San Antonio has a very low earthquake risk, with a total of two earthquakes occurring since 1931.

3.8.1.2 Topography

The Blackland Prairie physiographic area is dominated by rolling hills that vary in elevation from 700 to 1,000 feet above mean sea level. The topography on JBSA-LAK is generally flat with lower elevations grading toward and occurring in stream beds at the eastern boundary of the Installation, where higher slopes are present in some areas. Elevation ranges from 630 to 790 feet above mean sea level across the Base.

3.8.1.3 Soils

Table 3-5 summarizes the soils found on LAK-East, LAK-West, and Kelly Field. **Table 3-6** summarizes the soils found at the CTA.

Table 3-5
Soil Types – Kelly Field, LAK-East, and LAK-West

Map Unit Symbol	Map Unit Name	Slope	Drainage Rating	Acres in AOI	Percent of AOI
Fr	Loire clay loam	0–2%	Well drained	229.7	4.6
HsB	Houston Black clay	1–3%	Moderately well drained	5.6	0.1
HtA	Branyon clay	0–1%	Moderately well drained	650.1	13.1
HtB	Branyon clay	1–3%	Moderately well drained	18.0	0.4
HuB	Houston Black gravelly clay	1–3%	Moderately well drained	1,547.8	31.2
HuC	Houston Black gravelly clay	3–5%	Moderately well drained	189.7	3.8
HuD	Houston Black gravelly clay	5–8%	Moderately well drained	461.9	9.3
LvA	Lewisville silty clay	0–1%	Well drained	1,233.9	24.9
LvB	Lewisville silty clay	1–3%	Well drained	61.2	1.2
PaB	Patrick soils	1–3%	Well drained	162.2	3.3
PaC	Patrick soils	3–5%	Well drained	65.3	1.3
Pt	Pits and Quarries	1–90%	Well drained	31.3	0.6
Tf	Tinn and Frio soils	0–1%	Moderately well drained	34.5	0.7
VcA	Sunev clay loam	0–1%	Well drained	37.9	0.8
VcB	Sunev clay loam	1–3%	Well drained	127.7	2.6
VcC	Sunev clay loam	3–5%	Well drained	98.9	2.0

Source: [USDA, Natural Resources Conservation Service's Web Soil Survey tool](#)

AOI = area of impact

Table 3-6
Soil Types – CTA

Map Unit Symbol	Map Unit Name	Slope	Drainage Rating	Acres in AOI	Percent of AOI
HgD	Rock outcrop-Olmos complex	5–25%	N/A	5.6	0.1
HnB	Heiden clay	1–3%	Well drained	23.9	0.6
HoD3	Heiden-Ferris complex	5–10%	Well drained	77.9	1.9
HsB	Houston Black clay	1–3%	Moderately well drained	204.9	5.1
HtB	Branyon clay	1–3%	Moderately well drained	265.1	6.6
HuB	Houston Black gravelly clay	1–3%	Moderately well drained	1,625.7	40.6
HuC	Houston Black gravelly clay	3–5%	Moderately well drained	723.6	18.1
HuD	Houston Black gravelly clay	5–8%	Moderately well drained	579.4	14.5
LvA	Lewisville silty clay	0–1%	Well drained	229.6	5.7
LvB	Lewisville silty clay	1–3%	Well drained	8.3	0.2
PaB	Patrick soils	1–3%	Well drained	14.0	0.3
Tf	Tinn and Frio soils	0–1%	Moderately well drained	249.2	6.2

Source: [USDA, Natural Resources Conservation Service's Web Soil Survey tool](#)

AOI = area of impact; N/A = not applicable

Soils present at Kelly Field, LAK-East, and LAK-West primarily consist of Houston Black gravelly clays and Lewisville silty clays of varying slopes. These two soil types alone make up over 70 percent of the soils within the three districts, with Branyon clay comprising an additional 13.5 percent. Houston Black gravelly clay is primarily found with low slopes ranging from 1 to 3 percent, while Lewisville silty clay is most commonly characterized by slopes between 0 and 1 percent. Houston Black gravelly clay is moderately well drained and characterized by black, silty clay that consists of 8–18 percent gravel concentrated mainly at the surface. Relatively lower slopes across the Base's topography limit erosion potential. Runoff is limited due to the gravel surface portion of these soils. Lewisville silty clay is a deep, well-drained clay that is predominantly found at Kelly Field beneath portions of the runway and western side of the planning district.

Branyon clay is moderately well-drained soil with minor hydric components that occur with ponding. The runoff potential for Branyon clay is very high on slopes between 1 and 3 percent.

More than 70 percent of the soils at the CTA consists of Houston Black gravelly clays of varying slopes, the most predominant being the lesser 1 to 3 percent slope. Lewisville silty clay and Branyon clay can also be found within the CTA. Along with Houston Black clay, these soils each make up an additional 5–7 percent of the CTA. Tinn and Frio soils follow the path of Medio Creek and Long Hollow Creek north to south on the east and west sides of the district, respectively.

3.8.1.4 Prime Farmland

Houston Black gravelly clay and Houston Black clay soils at JBSA-LAK are considered to have the potential to be prime farmland soils. Houston Black gravelly clay can be found in all planning districts, and Houston Black clay is found in small amounts across the Main Base. However, agriculture and irrigation are not current operations at JBSA-LAK and are not planned for future operations. Therefore, these soils would not be considered prime farmland (Lackland AFB, 2010d). Given JBSA-LAK's historic use for military training, these soils would not be considered prime farmland or warrant future designation under the *Farmland Protection Policy Act*.

3.8.2 Environmental Consequences

The Air Force defines a significant effect on earth resources within the ROI as one or more of the following:

- substantial alteration of unique or valued geologic or topographic conditions;
- substantial soil erosion, sedimentation, and/or loss of natural function (e.g., compaction); and
- development on soils with characteristics that do not support the intended land use.

3.8.2.1 No Action Alternative

Under the No Action Alternative, the projects under the Proposed Action would not occur and the existing conditions would remain unchanged. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.8.2.2 Proposed Action

The Proposed Action would involve earthwork, including excavation, backfilling, and compacting of soils or fill materials, on and immediately adjacent to the project sites. These activities would expose soils and increase their susceptibility to water and wind erosion. Inclement weather (e.g., rain or wind) could increase the probability and severity of these potential effects. The underlying geology of the area would not change under the Proposed Action.

All construction or demolition projects would likely involve soil-disturbing activities. The majority of the proposed projects at Kelly Field would occur in areas of Lewisville silty clay with 0 to 1 percent slopes due to the presence of the airfield (**Figure 3-5**). Thirteen construction or demolition projects would have the potential to temporarily disrupt these soils during construction activities; however, the potential for runoff on Lewisville silty clay is considered negligible on slopes less than 1 percent. The soil is well drained and the potential for erosion would be low in these areas. Infrastructure Project 17 would occur within an area of Sunev clay loam with 3 to 5 percent slopes that follows the path of Leon Creek between LAK-East and Kelly Field. This infrastructure project would improve soil stability through the construction of terraces, reducing the potential for erosion and resulting in a beneficial impact to the soils environment at this site.

At LAK-East, all 15 construction/demolition projects would have the potential to disrupt soils. In addition, infrastructure Project 14 would also disrupt soils through improvements to the Parade Field. Each of the

proposed projects would occur within areas containing Houston Black gravelly clay (**Figure 3-6**). Within the area of Houston Black gravelly clay, Projects D1 and C2 would occur within areas of 3 to 5 percent slopes, while all other projects would occur in areas with 1 to 3 percent slopes. The potential for erosion during project implementation would increase as the project location slope increases. All project locations would contain relatively low slopes; therefore, the implementation of the Proposed Action would be considered to have slight erosion potential and pose minimal risk to the existing soils environment. Proposed Project C2 would construct additional greenspace around the medical campus, reducing the amount of impervious surface within the planning district. This project would provide minor benefits by reducing the potential for stormwater runoff and erosion in this area while stabilizing soils through installation of additional vegetation.

At LAK-West, 22 construction and demolition projects would also involve soil-disturbing activities (**Figure 3-7**). Projects C4, D7, D8 would occur within areas of Branyon clay with 0 to 1 percent slopes. Due to the low slope in this area, erosion potential would be minimal. The remaining projects within LAK-West would occur within areas of the Houston Black gravelly clay, the majority in areas with 1 to 3 percent slopes. The potential for runoff is medium to low in these areas due to the gravel content of the soil, and it would not be anticipated that significant erosion impacts would result from the actions. Projects C17, C18/D18, and C19/D19 would occur in areas of Houston Black gravelly clay with 3 to 5 percent slopes. Higher slopes are more susceptible to water erosion and typically contain a larger proportion of pebbles on the surface layer; however, project actions primarily would be limited to the demolition of existing structures or constructing within an existing building footprint, limiting the amount of earthwork to be performed. Proposed Projects C11/D11 and C15 would have the potential to improve the conditions of earth resources by constructing and expanding detention ponds within the LAK-West district. These ponds would result in long-term beneficial impacts by reducing the speed of water runoff and sedimentation at LAK-West.

The construction and demolition activities at the CTA would have the potential to disrupt soils in the immediate vicinity of the project locations (**Figure 3-8**). The linear Project I1 would involve improvements to Medina Road and would cross multiple intersecting soil types. The project would improve an existing roadway, which would require less earthwork than would be needed to construct a new roadway. The same project would repair existing water crossing bridges in multiple locations along the roadway. These actions are coupled with bank stabilization measures and debris removal, which would reduce the long-term potential for erosion around these structures and embankments.

Although scattered across the district, multiple projects would occur in areas of Houston Black gravelly clay. Projects C1, C2, C8, C10, I2, I3, and I7 would occur in areas of 1 to 3 percent slope. The infrastructure projects would improve an existing roadway in the northeast corner of the Base, repair existing access control gates for the MSA, and renovate an existing building. Significant soil disturbance would not be anticipated for these actions. The construction actions in these areas would add new structures; however, due to the low slope, low erosion and runoff potential would be anticipated.

Projects C6, C7/D7, and I6 would occur in areas of Houston Black gravelly clay with 3 to 5 percent slopes. The construction and demolition actions would be considered to have slight erosion potential but would pose minimal risk to the existing soils environment due to the relatively low slopes. Project I6 would involve existing building renovations, and erosion potential would be minimal.

Projects C3, C4/D4, I4, and I5 would occur in areas of Houston Black gravelly clay with 5 to 8 percent slopes. The actions would involve small amounts of construction and demolition and renovation of two existing structures. This area is already highly developed, and the actions would not be expected to involve significant soil disturbance, limiting the potential for erosion.

Projects C9, I8, and I9 would take place within an area of Houston Black clay with 1 to 3 percent slope. Redundant power would be provided to an existing sanitary sewer lift station, an existing building would be renovated and expanded, and renovations and realignment of a training range would occur. Water erosion is considered a hazard for Houston Black clay with 1 to 3 percent slopes; however, runoff potential would be limited by the nature of the renovations and single building expansion.

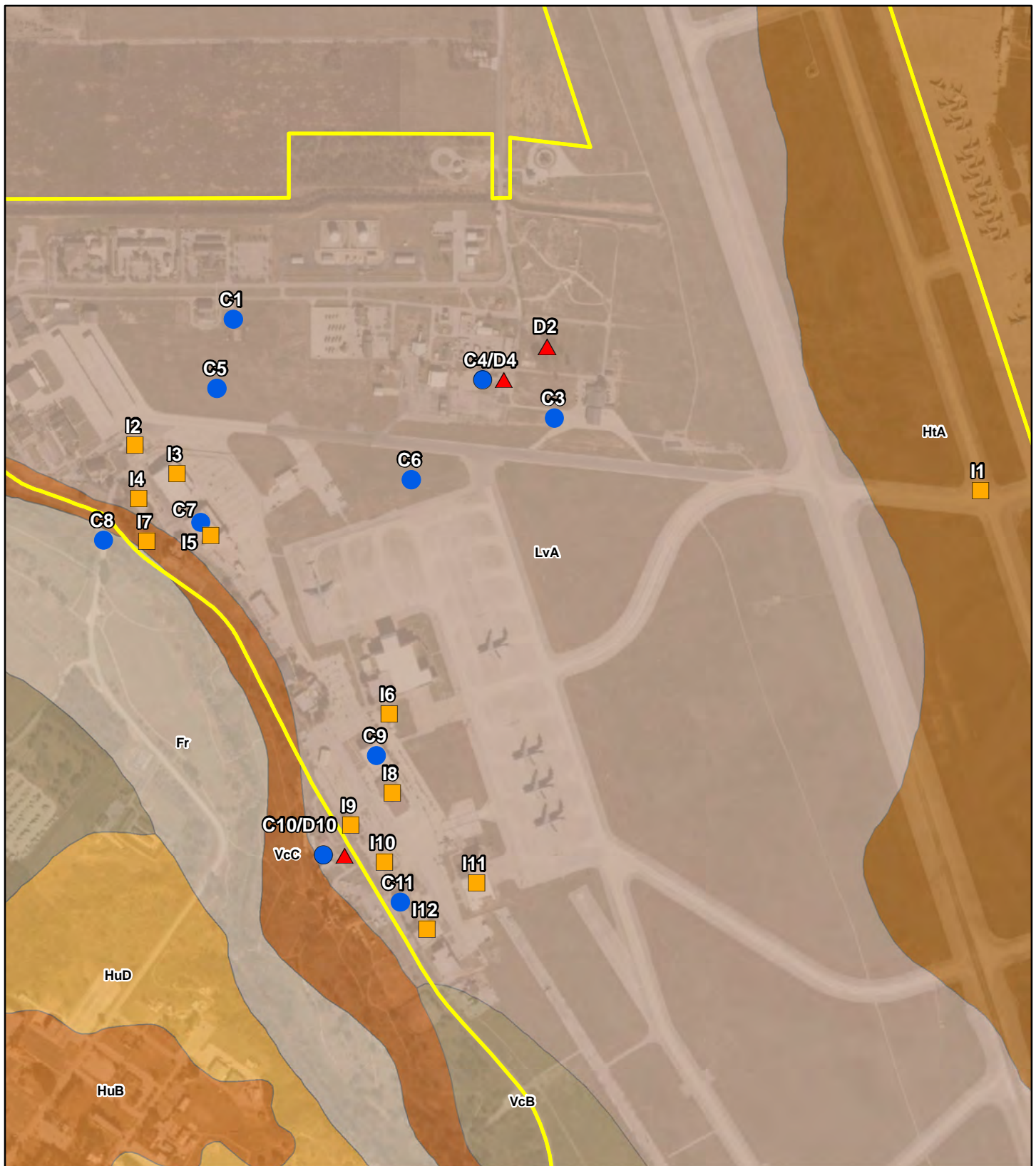
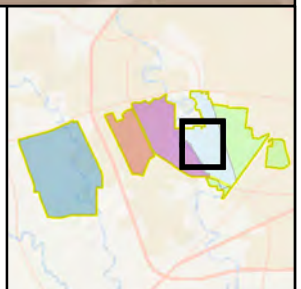


FIGURE 3-5
SOIL TYPES
KELLY FIELD

N
Imagery: ESRI 2021
Projection: WGS 1984
Zone 14N
0 0.05 0.1
Miles

- Construction
- ▲ Demolition
- Infrastructure
- ▬ JBSA-LAK
- Loire Clay Loam, 0-2% slopes
- Branyon Clay, 0-1% slopes
- Houston Black Gravelly Clay, 1-3% slopes
- Houston Black Gravelly Clay, 3-5% slopes
- Louisville Silty Clay, 0-1% slopes
- Sunev Clay Loam, 1-3% slopes
- Sunev Clay Loam, 3-5% slopes



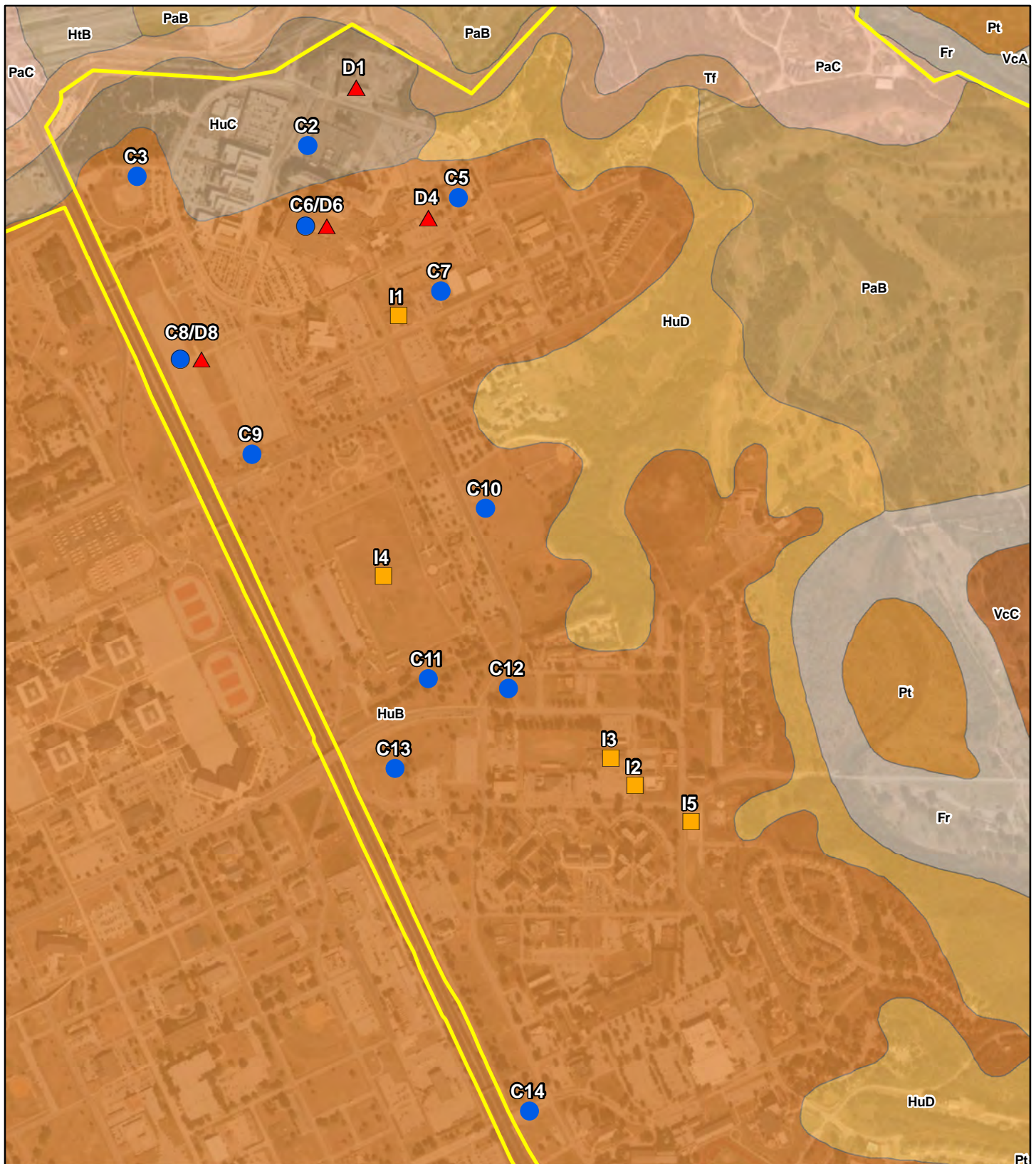
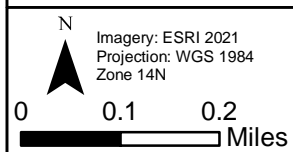
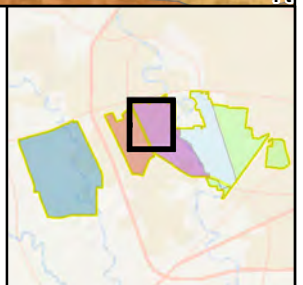


FIGURE 3-6
SOIL TYPES
LAK-EAST



- Construction
- ▲ Demolition
- Infrastructure
- JBSA-LAK
- Loire Clay Loam, 0-2% slopes
- Branyon Clay, 0-1% slopes
- Branyon Clay, 1-3% slopes

- Houston Black Gravelly Clay, 1-3% slopes
- Houston Black Gravelly Clay, 3-5% slopes
- Houston Black Gravelly Clay, 5-8% slopes
- Patrick Soils, 1-3% slopes
- Patrick Soils, 3-5% slopes
- Pits and Quarries, 1-90% slopes
- Tinn and Frio soils, 0-1% slopes



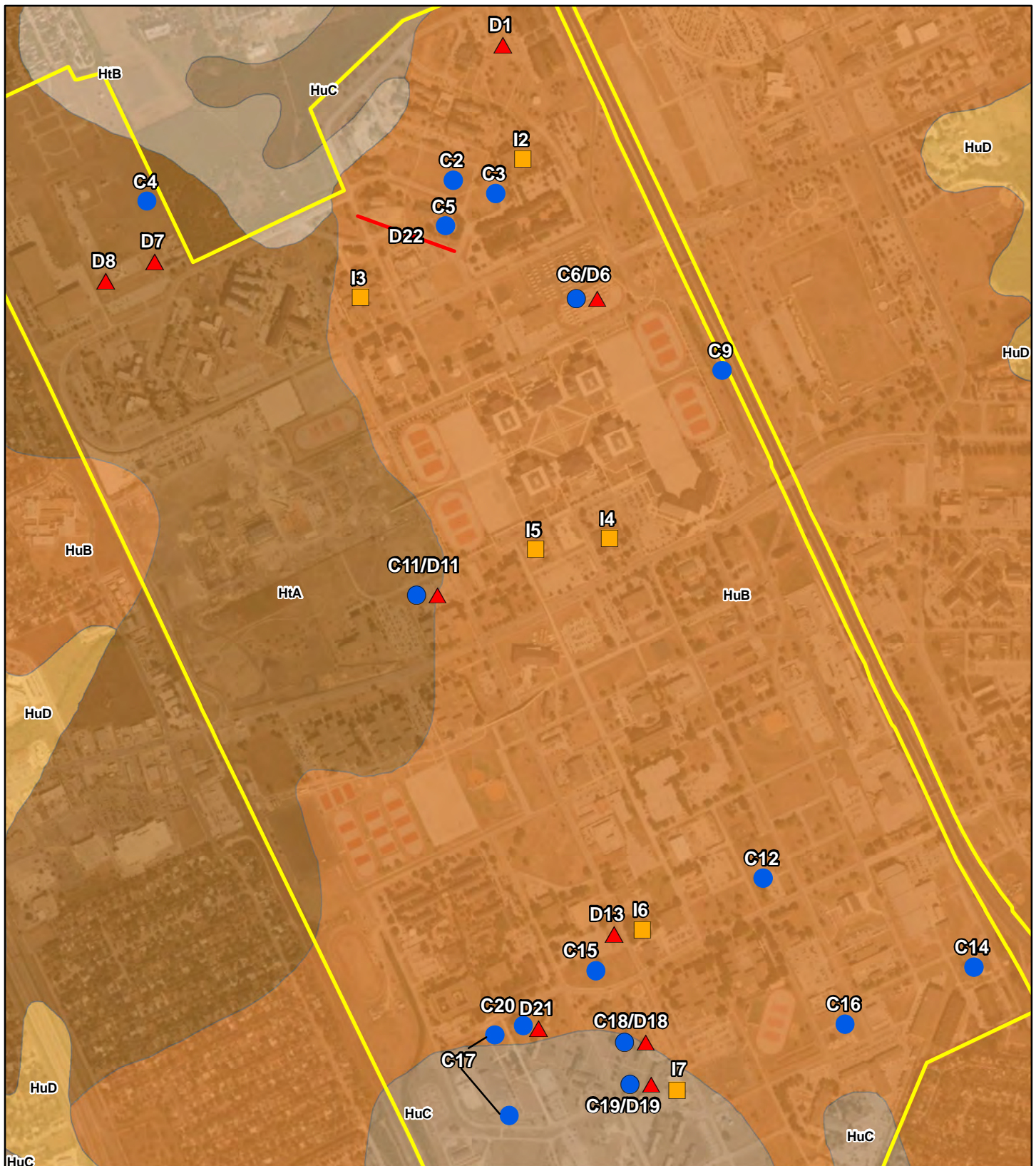
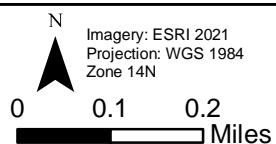
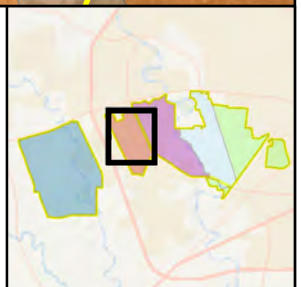


FIGURE 3-7
SOIL TYPES
LAK-WEST



- | | |
|-----------------------------|--|
| ● Construction | ■ Houston Black Gravelly Clay, 1-3% slopes |
| ▲ Demolition | ■ Houston Black Gravelly Clay, 3-5% slopes |
| ■ Infrastructure | ■ Houston Black Gravelly Clay, 5-8% slopes |
| — Linear Demolition | |
| □ JBSA-LAK | |
| ■ Branyon Clay, 0-1% slopes | |
| ■ Branyon Clay, 1-3% slopes | |



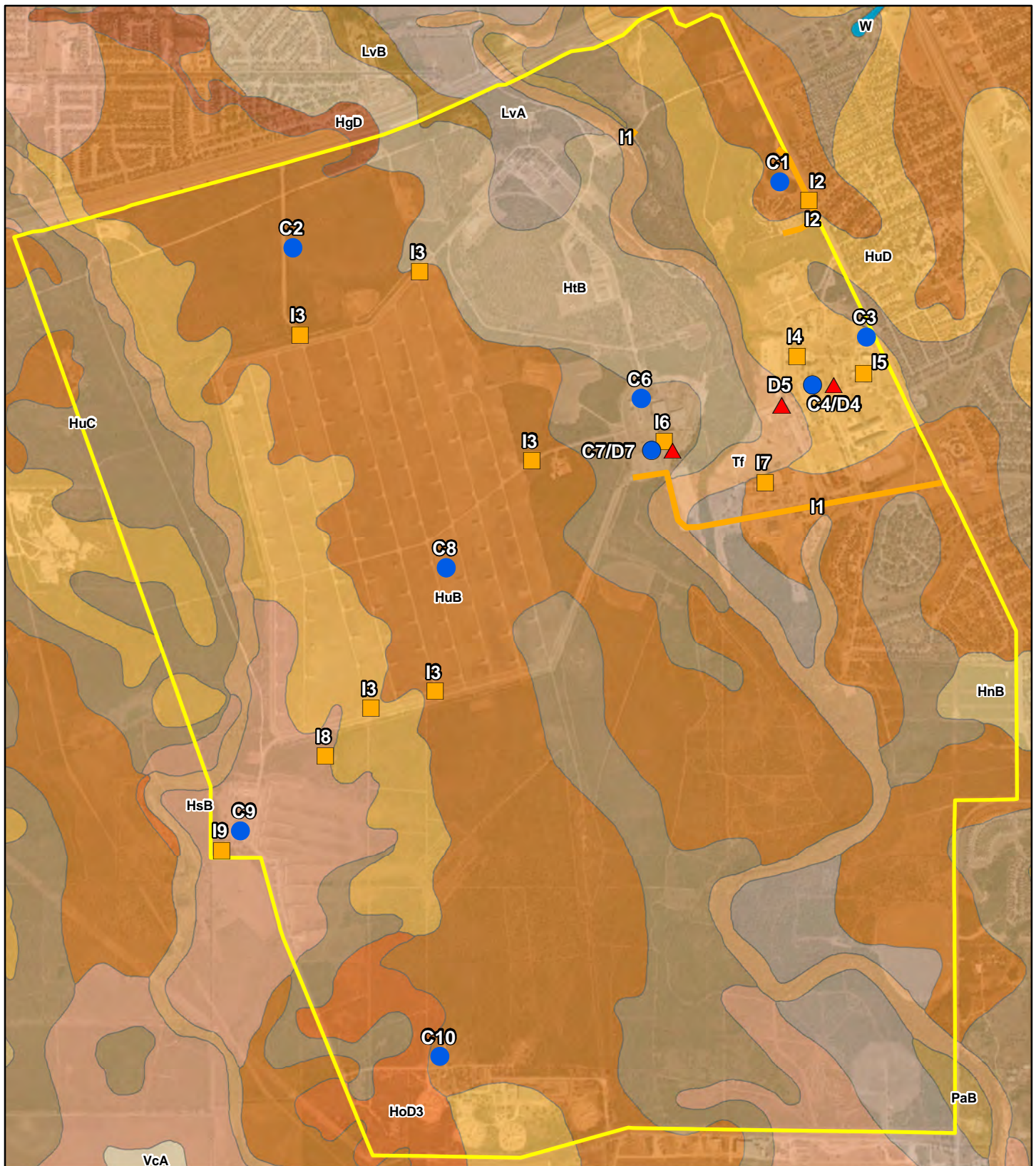
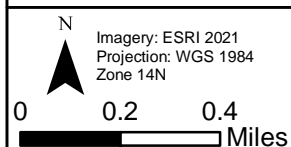
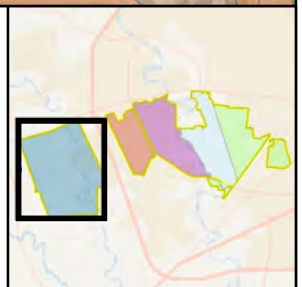


FIGURE 3-8
SOIL TYPES
CTA



- Construction
- ▲ Demolition
- Infrastructure
- Linear Infrastructure
- JBSA-LAK
- Rock Outcrop-Olmos complex, 5-25% slopes
- Heiden Clay, 1-3% slopes
- Heiden-Ferris Complex, 5-10% slopes
- Houston Black Clay, 1-3% slopes

- Branyon Clay, 1-3% slopes
- Houston Black Gravelly Clay, 1-3% slopes
- Houston Black Gravelly Clay, 3-5% slopes
- Houston Black Gravelly Clay, 5-8% slopes
- Lewisville Silty Clay, 0-1% slopes
- Lewisville Silty Clay, 1-3% slopes
- Patrick Soils, 1-3% slopes
- Tinn and Frio Soils, 0-1% slopes
- Sunev Clay Loam, 0-1% slopes



Where excavation and backfill are required, soil structure, composition, and function could be altered by the Proposed Action. All soils associated with the Proposed Action are previously disturbed and classified as well drained or moderately well drained; no soils are classified as hydric. No projects would be anticipated to occur in areas of soil with very high runoff potential. The soils at many project locations have been previously disturbed, developed, or used for military purposes. All project sites under the Proposed Action would be considered generally suitable for development; however, the Air Force would validate soil conditions at each site prior to construction to address any limiting factors by management or design.

Under the Proposed Action, potential adverse effects on soils, including soil loss, contamination, and structural alteration, would be managed at an individual project level. When applicable, the construction contractor would obtain and comply with a construction general permit (CGP) under the TCEQ-administered Texas Pollutant Discharge Elimination System (TPDES) program (see **Section 3.9.1.2**) when projects would disturb 1 acre or more of land. The CGP would require the preparation, approval, and implementation of a site-specific Stormwater Pollution Prevention Plan (SWP3) prior to construction, including appropriate structural and non-structural erosion, sediment, and waste control BMPs. Additional measures may include planning and operational considerations such as staging construction equipment and materials on existing gravel or paved surfaces or minimizing or restricting vehicle movements to select areas on JBSA-LAK.

During construction, crews would adhere to BMPs for soil erosion, as determined by the JBSA-LAK Natural Resources Officer, to minimize runoff potential. After placing and compacting reuse or fill soils, superficial soils would be graded to conform to local topography to maintain efficient drainage. Additionally, construction phasing under the Proposed Action would minimize potential adverse effects to soils. During implementation, project-specific measures would be taken and remain in place during all stages of the Proposed Action, resulting in negligible and temporary effects on soils in the ROI. No permanent, long-term effects on soils would occur under the Proposed Action.

Demolition and construction of facilities anticipated under the Proposed Action would not involve extensive modification of surface features. The Proposed Action would have the potential to increase soil erosion during the construction periods; however, impacts would be minimized by use of standard engineering practices (e.g., application of water for dust control) that reduce wind erosion or silt fences that reduce runoff erosion.

Under the Proposed Action, reasonably foreseeable development plans and projects within and around the San Antonio metropolitan area also would be subject to regulation under the National Pollution Discharge Elimination System (NPDES) permitting program. Depending on the nature and size of development, regulatory compliance measures would be in place to prevent or minimize potential effects on or from earth resources. Therefore, when considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions, potential cumulative effects to earth resources would not be likely to occur.

3.8.3 Best Management Practices and Mitigation Measures

The Air Force would require contractors to implement the following BMPs to reduce potential effects on or from earth resources under the Proposed Action:

- Comply with JBSA environmental specifications during construction projects.
- Prior to construction, obtain an applicable TPDES permit to manage stormwater on a site-specific basis. Prepare a TCEQ-approved SWP3 and submit a NOI as appropriate. Adhere to the permit conditions during construction to minimize soil erosion, sedimentation, and compaction under the Proposed Action.

- When practicable or in compliance with applicable laws and regulations, incorporate low impact development (LID)⁸ features and techniques into the design of the Proposed Action to increase stormwater retention and infiltration on the project sites.
- When practicable, identify and implement BMPs for construction and post-construction stormwater management in accordance with the [USEPA's National Menu of BMPs for Stormwater](#) or other technical guidance.

No mitigation measures for potential effects on earth resources under the Proposed Action are recommended.

3.9 WATER RESOURCES

Water resources include surface waters such as streams and wetlands, groundwater, and associated features and functions that protect water quality (e.g., floodplains and stormwater management).

The ROI for water resources includes JBSA-LAK and areas downstream that are entirely within the Medio Creek and Leon Creek watersheds (San Antonio River Authority [SARA], 2021) (**Figure 3-9**).

3.9.1 Existing Conditions

3.9.1.1 Watershed Management

Bexar County is part of the 4,180-square-mile San Antonio River Basin. One of 23 river basins in Texas, the San Antonio River Basin occupies a large swath of south-central Texas, draining portions of 14 Texas counties. The basin drains nearly all of Bexar County, in which JBSA-LAK is located. The principal tributaries of the basin include the Medina River, Leon Creek, Cibolo Creek, and Salado Creek. The eastern portion of JBSA-LAK drains to the Lower Leon Creek and Middle Leon Creek sub-watersheds; the western portion drains to the Medio Creek and Live Oak Slough-Medina River sub-watersheds (Air Force, 2020b).

The Texas Water Development Board ([TWDB](#)) administers a program for the long-term planning and development of state water resources. The TWDB divides Texas into 16 regional water planning areas for this purpose. Each regional water planning area is tasked with developing a regional water plan that feeds into a state water plan prepared by the TWDB. Bexar County is part of the [Region L regional water planning area](#).

3.9.1.2 Surface Waters and Water Quality

Surface Waters

No surface waters are located within Kelly Field, although for planning purposes Leon Creek is considered to encroach within the district. Leon Creek originates from a spring in the Edwards Plateau region in northern Bexar County. Leon Creek flows north to south through LAK-East, through the Gateway Hills Golf Course, until it joins with the Medina River south of the Installation (**Figure 3-9**). The Lower Leon Creek segment associated with JBSA-LAK is 32 miles long and drains approximately 228 square miles. The main portion of the creek enters the Installation from the northwest and is joined by intermittent tributaries from the north and east of the LAK-East planning district. Leon Creek is classified a 303(d) impaired waterway for polychlorinated biphenyls (PCBs) found in edible tissues of the fish present.

⁸ LID measures include filtration, infiltration, evaporation, plant transpiration, and rainwater reuse to retain and treat stormwater on site, in contrast to conventional management practices that temporarily store and ultimately discharge stormwater to receiving waterbodies.

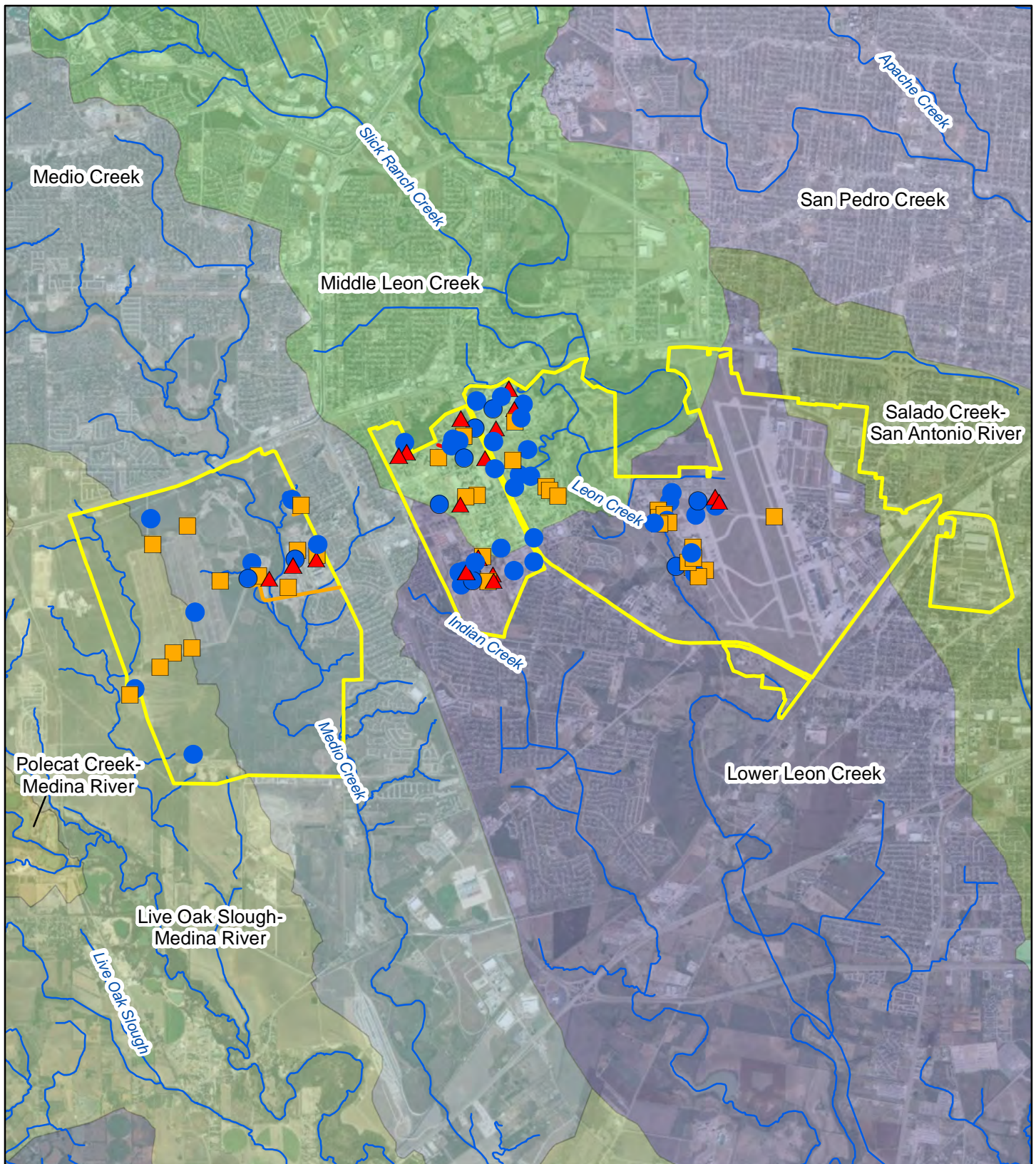
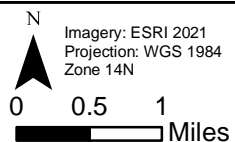
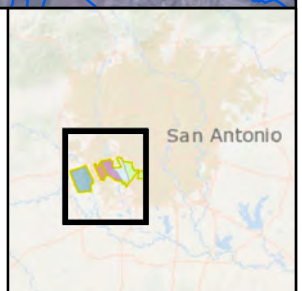


FIGURE 3-9
JBSA-LAK
DRAINAGE BASINS



- | | | |
|--------------------------------|--------------------------------|--------------------------------|
| ● Construction | Lower Leon Creek | Post Oak Creek-Elm Creek |
| ▲ Demolition | Medio Creek | Salado Creek-San Antonio River |
| ■ Infrastructure | Middle Leon Creek | San Pedro Creek |
| ▭ JBSA-LAK | Palo Blanco Creek-Medina River | |
| ▭ Live Oak Slough-Medina River | Polecat Creek-Medina River | |



Medio Creek is a perennial stream that flows north to south through CTA on the eastern side of the district. Long Hollow Creek also flows north to south through CTA on the western side of the district. Both waterways contain small impoundments within the Base, creating areas of standing water (Air Force, 2020b). There are no creeks or water systems located directly within the boundaries of LAK-West, although Indian Creek flows generally north to south just outside of the southwest border of the district.

Water Quality

Under the CWA, the TCEQ sets and enforces water quality standards for surface waters in Texas. Discharges to state waters are permitted under the TPDES permit program. TPDES permits are required for different types of pollutant-generating activities such as construction, industrial operations, and public-owned and -operated storm sewers (TCEQ, 2020a, 2021a).

Under Section 303(d) of the CWA, the TCEQ is required to identify and develop a list of waterbodies (or waterbody segments) that are impaired based on their intended use (e.g., swimming or fishing). Impaired waterbodies are those that are not in attainment with water quality standards promulgated by the TCEQ. To achieve attainment status, a total maximum daily load (TMDL) is developed for the impairment. TMDLs use science-based criteria to establish a regulatory ceiling for the impaired waterbody to achieve attainment of water quality standards; that is, the maximum pollutant loads a waterbody may receive from all or portions of a basin or sub-basin in attainment of water quality standards. TMDLs target specific pollutants and set enforceable limits to improve or maintain the current conditions of 303(d)-listed waterbodies. The TCEQ also implements a state-wide water quality sampling program for this purpose and requires sampling through the issuance of TPDES permits (USEPA, 2021a).

The water quality of the San Antonio River Basin has improved over historic levels, in large part due to more advanced wastewater treatment within the region. For example, dissolved oxygen concentrations in the surface waters of the basin have increased substantially in the last several decades. However, water quality in portions of the basin continues to be of management concern for low dissolved oxygen levels and contaminants such as fecal coliform and nutrients.

Leon Creek, which establishes the eastern border of the Main Base and passes through the southwestern portion of Kelly Field, has been classified as an impaired waterway by the TCEQ due to elevated levels of PCBs found in the edible tissues of fish from this body of water (Air Force, 2020b). More than half of the land surrounding Leon Creek is developed and urbanized, with impervious surfaces that contribute to exposure to surface-water runoff. This segment of Leon Creek is currently listed under 303(d) Category 5a, in which TMDLs are underway, scheduled, or will be scheduled (TCEQ, 2020b).

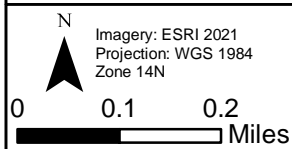
3.9.1.3 Wetlands

The US Army Corps of Engineers ([33 CFR § 328.3](#)) and USEPA ([40 CFR § 230.3](#)) define wetlands as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Wetlands are a subset of Waters of the US, and those deemed “jurisdictional” are regulated under Section 404 of the CWA. When a federal agency proposed action requires a Section 404 wetlands permit, states are provided authority to enforce surface-water quality standards under Section 401 of the CWA by review of the proposed action and permit application. The natural function benefits of wetlands include flood control, groundwater recharge, maintenance of biodiversity, wildlife habitat, recreational opportunities, and maintenance of water quality.

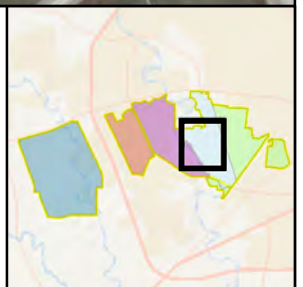
No wetlands are present within Kelly Field; however, 19 wetlands are found within LAK-East and LAK-West, totaling approximately 7.3 acres, and 37 wetlands, covering approximately 17.4 acres, are on the CTA (**Figures 3-10 through 3-13**, respectively, and **Tables 3-7 and 3-8**).



FIGURE 3-10
SURFACE WATERS
AND FLOODPLAINS
KELLY FIELD



- | | | |
|------------------|---------------------------------|---------|
| ● Construction | Wetland - Aquatic Bed | Zone A |
| ▲ Demolition | Wetland - Streambed | Zone AE |
| ■ Infrastructure | Wetland - Unconsolidated Bottom | |
| — Streams | | |
| □ JBSA-LAK | | |



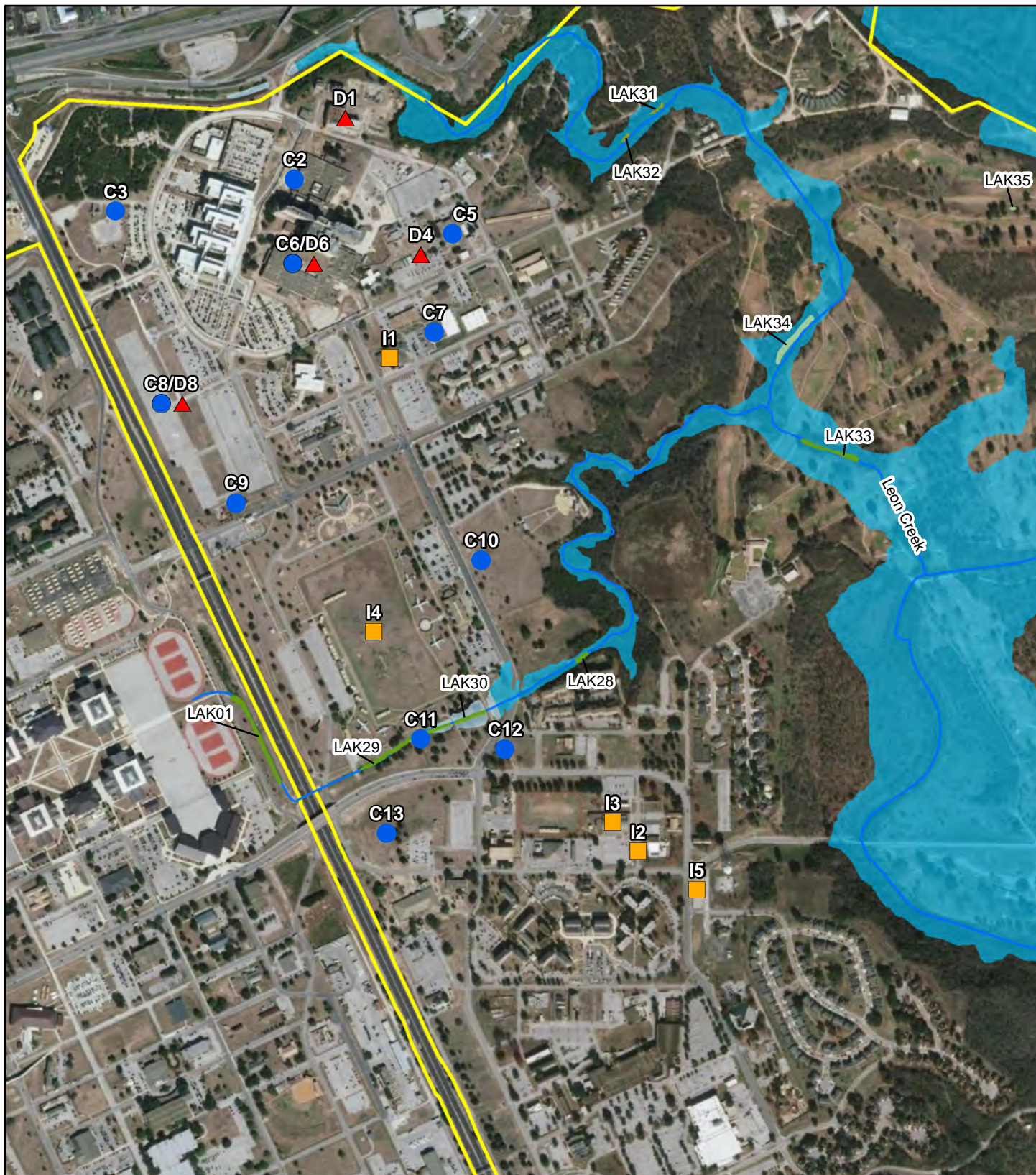
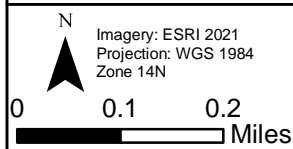
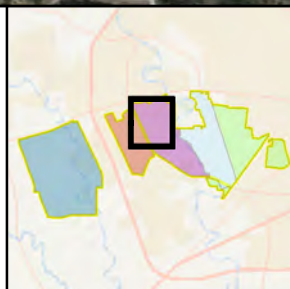


FIGURE 3-11
SURFACE WATERS
AND FLOODPLAINS
LAK-EAST



- | | | |
|------------------|---------------------------------|---------|
| ● Construction | Wetland - Emergent | Zone A |
| ▲ Demolition | Wetland - Forested | Zone AE |
| ■ Infrastructure | Wetland - Streambed | |
| — Streams | Wetland - Unconsolidated Bottom | |
| □ JBSA-LAK | | |



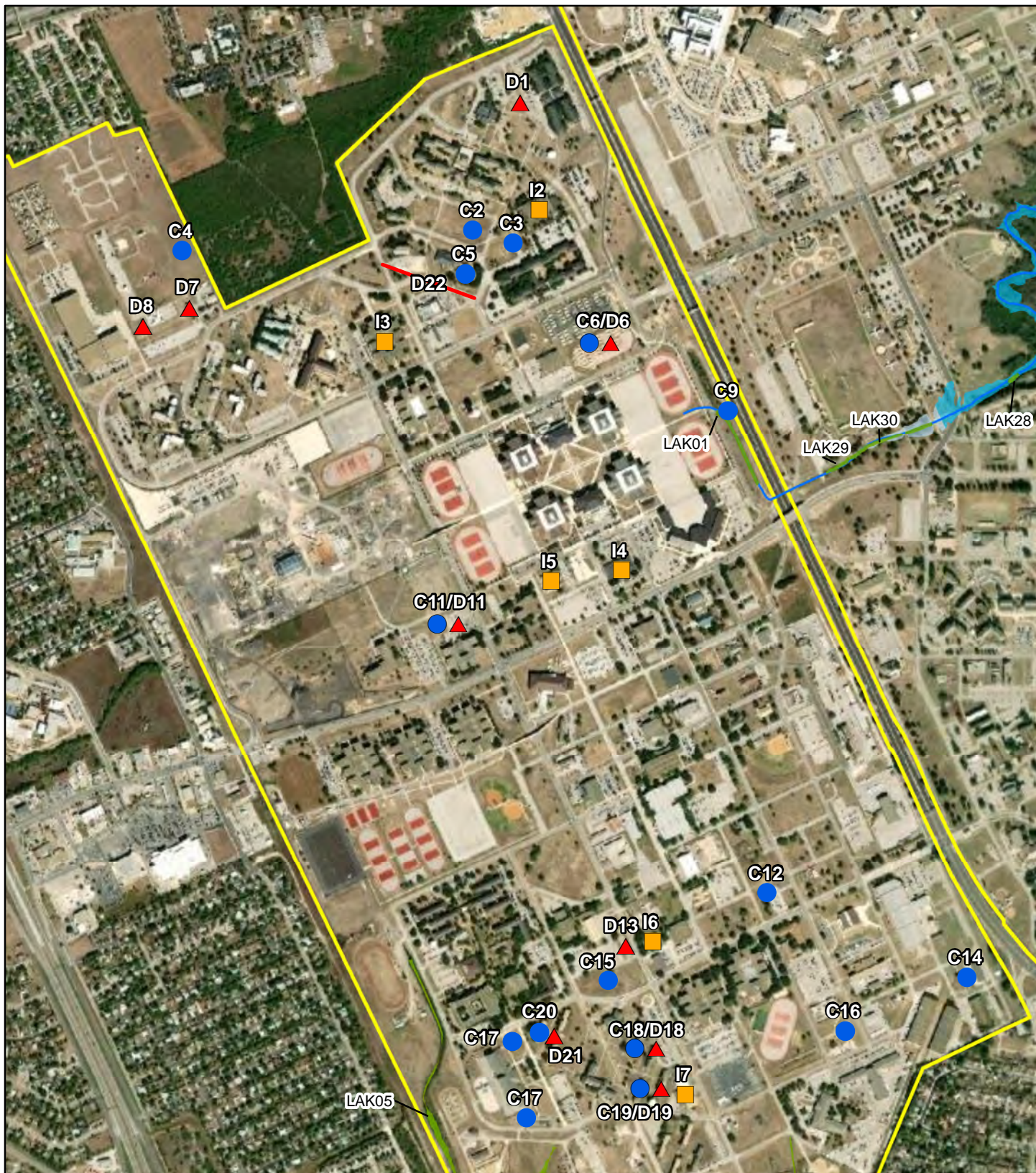
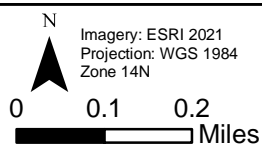
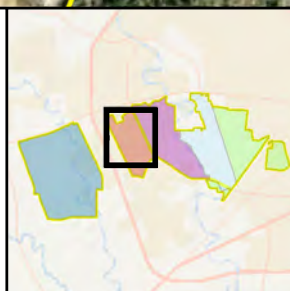


FIGURE 3-12
SURFACE WATERS
AND FLOODPLAINS
LAK-WEST



- Construction
- ▲ Demolition
- Infrastructure
- Streams
- Linear Demolition
- JBSA-LAK
- Wetland - Emergent
- Zone A
- Zone AE



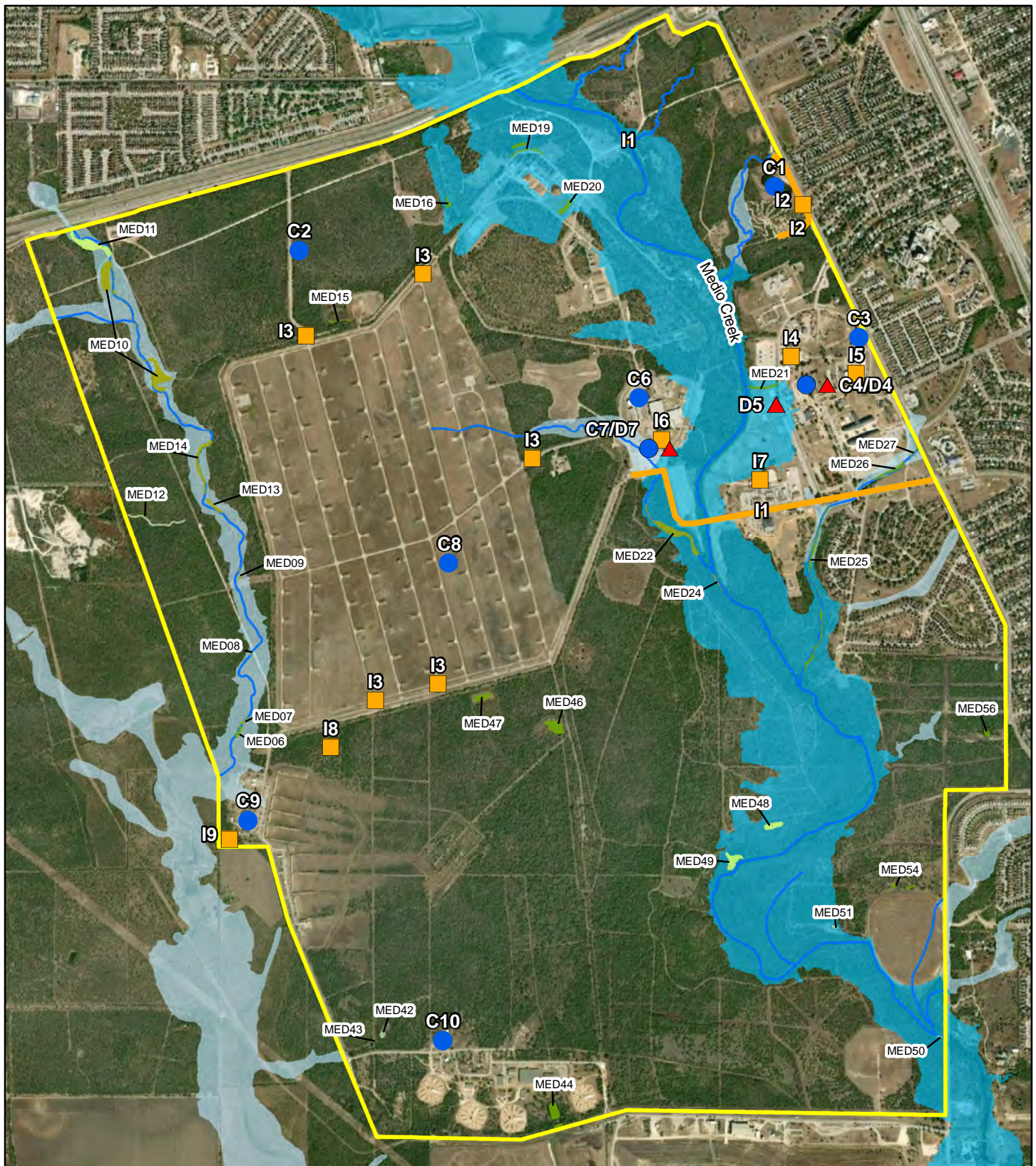
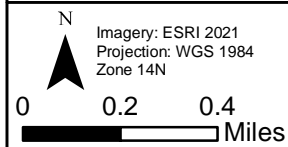
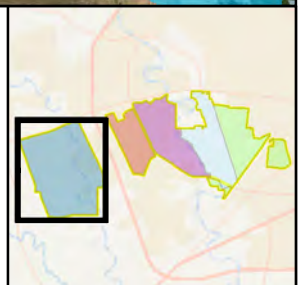


FIGURE 3-13
SURFACE WATERS
AND FLOODPLAINS
CTA



- | | | |
|-------------------------|-----------------------------------|-----------|
| ● Construction | ▭ JBSA-LAK | ▭ Zone A |
| ▲ Demolition | ▭ Wetland - Emergent | ▭ Zone AE |
| ■ Infrastructure | ▭ Wetland - Forested | |
| — Streams | ▭ Wetland - Streambed | |
| — Linear Infrastructure | ▭ Wetland - Unconsolidated Bottom | |



**Table 3-7
Wetlands – LAK-East and LAK-West**

Class	Acres	Number of Wetlands	Percent of AOI
Palustrine Wetlands			
Aquatic Bed	0.51	1	7.0
Emergent	4.12	8	56.3
Unconsolidated Bottom	1.89	6	25.8
Riverine Wetlands			
Streambed	0.80	4	10.9
TOTAL	7.32	19	

Source: JBSA, 2016
AOI = area of interest

**Table 3-8
Wetlands – CTA**

Class	Acres	Number of Wetlands	Percent of AOI
Palustrine Wetlands			
Emergent	6.46	20	37.1
Forested	3.04	4	17.4
Unconsolidated Bottom	1.11	4	6.4
Riverine Wetlands			
Streambed	6.82	9	39.1
TOTAL	17.43	37	

Source: JBSA, 2016
AOI = area of interest

The majority of the wetlands identified on LAK-East and LAK-West are within constructed shallow areas or part of the drainage along the golf course. Leon Creek is mostly vertical banks as it passes through the Base and does not provide area for wetland formation (JBSA, 2016).

Many of the identified wetlands on the CTA are associated with either Medio Creek to the east or Long Hollow Creek to the west and reside within their associated floodplains. Scattered wetlands exist within the undeveloped portions of the district (Air Force, 2020b). Emergent wetlands within the CTA often occur within constructed, low-lying areas. Multiple streambed wetlands can be found as a result of shallow, slow-moving water and emergent vegetation from Medio Creek and Long Hollow Creek.

Palustrine wetland systems include non-tidal wetlands that typically contain small trees, shrubs, persistent emergent plants, emergent mosses, or lichens. Aquatic bed wetlands are dominated by plants that grow on or below the surface of the water. Emergent wetlands are a class within these systems characterized by rooted, herbaceous plants that extend upward out of the water. Forested wetlands are primarily dominated by trees and vegetation that tolerates flooded conditions. Unconsolidated bottom wetlands typically lack large stable surfaces for plant attachment and may contain substrate on the bottom such as gravel or sand.

Riverine wetland systems are characterized by wetlands defined by a channel but are not dominated by the same plant life that would typically define an emergent wetland, like trees, shrubs, or mosses (JBSA, 2016). The streambed class of riverine wetlands is often associated with the channels of intermittent streams that are occasionally dewatered.

3.9.1.4 Stormwater Management

JBSA-LAK experiences approximately 30.5 inches of precipitation annually (Air Force, 2020b). Dependent on location and localized environmental conditions, stormwater originating on JBSA-LAK is subject to varying levels of infiltration and conveyance.

Leon Creek, Indian Creek, and Medio Creek receive storm- and surface-water drainage and runoff from within the Installation via outfalls or overland flow into grassy ditches. Leon Creek is the primary destination of stormwater discharge for Kelly Field, LAK-East, and LAK-West. Indian Creek connects with Leon Creek downstream, south of the Main Base, combining the discharge flows for these two creeks. Stormwater and surface water at the CTA flows to either Medio Creek or Long Hollow Creek, which flow into the Medina River south of the Installation. Additional stormwater catchment ponds within the Installation support runoff, including the golf course water hazards (Air Force, 2016). Stormwater is primarily conveyed through open ditches; however, some underground piping exists. Minor flooding can occur in some areas of the Base during periods of heavy rain (Air Force, 2018b).

Pursuant to the CWA, JBSA-LAK is regulated as a small municipal separate storm sewer system (MS4) operator and maintains a MS4 permit for its stormwater conveyance system. As a requirement of the MS4 permit, JBSA-LAK maintains a Base-wide SWP3. The SWP3 describes procedures for the management of stormwater on the Base, including stormwater conveyed to four regulated outfalls subject to compliance with JBSA-LAK's [Multi-Sector General Permit for Industrial Facilities \(TPDES General Permit No. TX05D855\)](#). Outfalls 1 and 2 discharge to Leon Creek, and outfalls 3 and 4 discharge to Indian Creek and Medio Creek, respectively (Air Force, 2018b).

Stormwater discharges from construction activities on JBSA-LAK are also permitted under the TPDES. The type and extent of a construction activity on the Base determines stormwater management requirements on a case-by-case basis as follows:

- Disturbance of **1 acre** to less than **5 acres** that are *not part of* a larger common plan of development requires preparation, implementation, and maintenance of a site-specific SWP3.
- Disturbance of **1 acre** to less than **5 acres** that are *part of* a larger common plan of development requires authorization under TPDES General Permit No. TXR150000, including a TCEQ-approved SWP3 and NOI publication prior to construction.
- Disturbance of **5 acres or more** requires authorization under TPDES General Permit No. TXR150000, including a TCEQ-approved SWP3 and NOI publication (i.e., whether part of a larger common plan of development or not) prior to construction.

These CGPs establish standard measures to prevent or minimize potential soil erosion and sedimentation from construction sites (TCEQ, 2021b).

Section 438 of the EISA directs federal agencies to incorporate, to the maximum extent technically feasible, LID measures to maintain the pre-development hydrology of a site for projects involving 5,000 sf or more of land disturbance. DoD technical criteria and requirements for compliance with Section 438 of EISA are provided in UFC 3-210-10, Change 1, *Low Impact Development*.

3.9.1.5 Floodplains

Floodplains are areas of low-lying, relatively flat ground adjacent to rivers, streams, large wetlands, or coastal waters with a potential for inundation due to rain or melting snow. In a natural vegetated state, floodplains slow the rate at which incoming overland flows reach the adjacent waterbody. Floodplains also function to recharge groundwater, maintain water quality, provide wildlife habitat, and support recreation. The Federal Emergency Management Agency (FEMA) defines the 100-year floodplain as an area that has a 1-percent chance of inundation in any given year; the area with a 0.2-percent chance of inundation in any given year is defined as the 500-year floodplain. FEMA designates 100-year floodplain zones to indicate the severity or type of flooding in an area. Zone A designates portions of 100-year floodplains where depths or base flood elevations (BFEs) are not yet known and require further study. Conversely, Zone AE portions of 100-year floodplains are those with defined BFEs. Beyond the 100-year floodplain, areas designated Zone X are either shaded to indicate the 500-year floodplain or unshaded to indicate a lower risk of flooding outside 100- and 500-year floodplains (FEMA, 2021).

EO 11988, [Floodplain Management](#), requires federal agencies to determine whether proposed development would occur within a floodplain and to avoid floodplains, to the maximum extent possible, when there is a practicable alternative. Where construction within the floodplain is unavoidable, development of a FONPA is required detailing no other alternatives. EO 13690, [Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input](#), further directs federal agencies to use higher standards for actions in floodplains by managing beyond the base flood to a higher vertical flood elevation and corresponding horizontal floodplain. The Federal Flood Risk Management Standard (FFRMS) describes varying ways to determine a higher flood elevation and extent for federally funded projects; however, the goal is to establish the level to which a structure or facility must be to minimize current and future flood risks. As a resilience standard, the FFRMS provides flexibility to use structural or non-structural methods to reduce or prevent damage, elevate a structure, or, if appropriate, consider adaptation or recovery by design.

The San Antonio River Basin is part of an area commonly associated with “flash” flooding from high-intensity, short in duration rainfall (SARA, 2021). In coordination with FEMA, SARA regulates floodplain use in Bexar County. SARA also functions as a technical resource for floodplain management regionally.

At JBSA-LAK, Kelly Field is bordered on the west by the 100-year floodplain associated with Leon Creek, which encroaches into the district boundary in some locations closest to the creek. LAK-East contains 100-year floodplains associated with Leon Creek, which runs north and south. The floodplain generally follows a north-to-south pathway through the Installation along the golf course. Stretches of floodplain associated with a small tributary also extend from Leon Creek through the middle of the district to the west, where it connects with Installation drainage structures. Leon Creek and its floodplain act as a boundary between LAK-East and Kelly Field. LAK-West does not contain floodplains within the district boundaries.

Floodplains are also present at the CTA and are primarily associated with Medio Creek and its associated tributaries. The CTA is divided north to south by Medio Creek, separating much of the developed portion of the district in the east from the undeveloped areas and training areas on the western and southern parts of the district. Long Hollow Creek also runs north to south along the western border of the district, within the Installation boundary, although no BFEs have been established for the floodplains associated with this creek.

3.9.1.6 Groundwater

Groundwater is water that collects or flows beneath the land surface. As precipitation occurs, water percolates through the ground and occupies porous space in soil, sediment, and rocks. Groundwater resources are often used for potable water consumption, agricultural irrigation, and industrial applications. An aquifer is a body of porous rock or sediment saturated with groundwater. In Texas, aquifers are a critical source of water, supplying more than 60 percent of annual water use (TWDB, 2022b). As defined by the TWDB, there are two “major” aquifers associated with Bexar County: the Trinity Aquifer and the Edwards (Balcones Fault Zone) Aquifer.

The Trinity Aquifer extends across central and northeastern Texas. This aquifer system occupies 21,308 square miles of subsurface area, underlying all or parts of 61 Texas counties. Because it is composed of several smaller aquifers within the Trinity Group, the Trinity Aquifer is referred to by several different names across the state. For example, in Bexar County, the aquifer is often referred to as the Glen Rose Aquifer. Regardless of nomenclature, the smaller aquifers that comprise the Trinity Aquifer consist of limestones, sands, clays, gravels, and conglomerates. The Trinity Aquifer discharges to numerous springs throughout its reach. There are no major concerns with respect to the water quality of the Trinity Aquifer; however, increased total dissolved solids and concentrations of sulfate and chloride have been detected in portions of the aquifer. The groundwater of the Trinity Aquifer primarily is used as a source of potable water. It is also a source of recharge for the Edwards Aquifer.

The Edwards (Balcones Fault Zone) Aquifer occupies a subsurface area of 2,314 square miles in south-central Texas. The Edwards Aquifer extends across 13 Texas counties, including Bexar County. Because

it primarily consists of partially dissolved limestone, the Edwards Aquifer is highly permeable and discharges to numerous springs throughout its reach. The water quality of the Edwards Aquifer is generally considered to be of a high quality. The groundwater of the aquifer is primarily used as a source of potable water and for agricultural irrigation; the City of San Antonio obtains nearly all its water supply from the Edwards Aquifer. Because of its high rate of permeability, water levels and spring flows in the Edwards Aquifer can fluctuate rapidly in response to rainfall, drought, or pumping. This characteristic also increases the aquifer's susceptibility to pollution from stormwater runoff or spills (TWDB, 2021).

JBSA-LAK overlies the confined or artesian zone of the Edwards Aquifer. Although the artesian zone falls within the jurisdictional boundary of the Edwards Aquifer Authority (EAA), this area is not subject to any EAA rules or regulations. The Edwards Aquifer is the primary source of water for JBSA-LAK (Air Force, 2020b). JBSA-LAK also overlies a portion of the Trinity Aquifer and falls within the jurisdictional boundary of the EAA. However, as an underlying layer of the Edwards Aquifer, the Trinity Aquifer is not subject to any EAA rules or regulations that apply only to the limestone layer of the Edwards Aquifer.

Kelly Field, LAK-East, and LAK-West contain mostly improved and impervious surfaces. The ability for water to permeate groundwater resources is limited. The golf course is considered an improved area, but water permeability would still be expected where impervious surfaces are absent. A large portion of the CTA contains unimproved areas where water infiltration is unimpeded by impervious surfaces.

3.9.2 Environmental Consequences

The Air Force defined a significant effect on water resources within the ROI as one or more of the following:

- substantial, permanent alteration, damming, diversion or redirection of jurisdictional stream segments or hydrological connections to Waters of the US;
- substantial changes to the volume, rate, or quality of stormwater discharges from a project site that degrade water quality, exceed pollutant TMDLs, and/or violate Section 438 of EISA, the conditions of JBSA-LAK's MS4 permit, or other applicable stormwater regulation or permit;
- development within a 100-year floodplain or jurisdictional wetlands without full consideration of other practicable alternatives or methods to avoid and minimize adverse effects;
- release of contaminants to groundwater underlying a project site exceeding applicable regulatory thresholds (i.e., maximum concentration levels); and
- noncompliance with applicable stormwater management requirements, including erosion and sedimentation controls.

3.9.2.1 No Action Alternative

Under the No Action Alternative, the projects under the Proposed Action would not occur and the existing conditions would remain unchanged. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. Detention pond facilities at LAK-West would not be improved or expanded and minor flooding during heavy rain would continue. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.9.2.2 Proposed Action

Watershed Management

The Proposed Action would involve construction-related activities such as grading, excavation, and similar earthwork. Some of these activities would occur within or immediately adjacent to water resources on JBSA-LAK. During construction, and for a period thereafter, soils would be exposed, increasing the potential for erosion and sedimentation of nearby surface waters. Projects C11/D11 and C15 at LAK-West would improve the watershed environment within the district by increasing detention pond capacity with additional

pond construction and expansions of existing facilities. The Proposed Action would not be anticipated to have significant adverse effects on the San Antonio River Basin.

Surface Waters

Project C8 at Kelly Field would involve construction within Leon Creek itself. The Proposed Action would construct a new elevated bridge along Hall Boulevard at the crossing of Leon Creek. The action would have the potential to directly impact Leon Creek during both the demolition and construction phases. Impacts to Leon Creek would be minimized to the extent practical during both construction of the new bridge and demolition of the existing bridge using BMPs. Surface water conveyance upstream and downstream of the crossing could be altered by bridge structures within the creek; these impacts would be considered and minimized during bridge design.

Additionally, Project C11 at LAK-East would construct a sidewalk and bridge to Truemper Street and the Parade Field located within LAK-West. This action would cross an ephemeral stream that serves as a tributary to Leon Creek. The open trench in which the stream resides would be spanned by the proposed project. LAK-West Project C9 would also construct a bridge structure for troop crossings across Military Drive, which divides LAK-East and LAK-West. This proposed project would span the same ephemeral stream as LAK-East Project C11, just farther north where the channel turns to be parallel to Military Drive. Both projects would have the potential to directly impact the tributary during the construction phase.

Proposed Project I1 within the CTA would rebuild Medina Road and multiple water crossing bridges across the district. The bridge improvements within the CTA would have the potential to impact surface waters spanned by bridges within the district. Impacts to these streams and tributaries would be minimized to the extent practical through the use of BMPs during renovation of existing bridges. Potential effects from the project implementation would be short term and would not be expected to be significant; however, some actions would have the potential to benefit surface waters in these locations. Actions include removal of debris from the water beneath the bridges and stabilization of banks to prevent erosion into the waters. Improving the condition of the bridges would prevent loose debris from falling from bridges into the streams.

No other proposed projects would have the potential to directly impact streams on the Installation; however, multiple projects would occur within proximity of streams and have the potential to indirectly affect surface-water resources due to runoff that could occur as a result of construction activities. One project at LAK-East, 10 projects at LAK-West, 14 projects at Kelly Field, and 13 projects at the CTA occur within 0.25 mile of a stream. Mitigation measures to control surface runoff from construction sites would reduce sedimentation potential and minimize opportunities for surface-water contamination. Construction laydown areas associated with the Proposed Action would be maintained by contractors and erosion potential would be minimized through BMPs, limiting the runoff potential into surface waters.

Waters of the US are present within the proposed project area boundaries; however, the need for a potential Section 404 permit would be determined closer to project implementation due to the long-range nature of the ADP projects. Coordination with the US Army Corps of Engineers, including detailed descriptions, maps, and impact characterizations, would be required as individual project plans are developed. Proposed projects with the potential to impact Waters of the US (e.g., bridge construction projects) would be evaluated for Section 404 permitting needs at the time of project implementation.

Water Quality

Under the Proposed Action, most projects would not directly affect surface waters at JBSA-LAK. Dependent on distance and localized environmental conditions such as erodibility and permeability of soils, slope, and imperviousness, stormwater generated at project sites could degrade water quality at and downstream of receiving waterbodies. The level of potential effects from sediments or contaminants transported overland in runoff and discharged to surface waters would depend on many factors.

However, the Air Force would prevent and reduce potential effects to the extent practicable by requiring that construction contractors obtain applicable TPDES permit(s), including a CGP for sites that individually or collectively disturb one or more acres of land. The CGP would identify measures to prevent and minimize

stormwater discharges during construction and, when appropriate, require preparation of a TCEQ-approved SWP3. Because SWP3s and other TPDES stormwater requirements would be required for each individual project site under the Proposed Action, the measures would account for localized environmental conditions and other determinants of water quality. With these measures in place, potential adverse effects on surface waters from most of the involved projects would be minor and short term. Revegetation with native grasses, shrubs, and trees post-construction would ensure potential long-term effects do not occur or are negligible.

To comply with Section 438 of EISA, LID measures would be incorporated into the applicable projects of the Proposed Action to the maximum extent technically feasible. These design measures would help to maintain or restore stormwater runoff such as the temperature, rate, volume, and duration of surface flows. Each of the involved project sites would use an analysis of pre-development hydrology to establish a baseline condition and set design objectives for stormwater management. Under the Proposed Action, if design objectives could not be met on one or more project sites, LID measures would be considered for application in areas downstream thereof (i.e., either on or in the vicinity of JBSA-LAK).

Most proposed projects would occur in previously developed and highly industrial areas away from surface waters. Changes to the overall surface-water quality would be minimal and short term, centered around construction and demolition projects within these resources. Mitigation measures to control surface runoff from construction sites would minimize the opportunities for sediment to contaminate stormwater and surface water. Adverse, long-term impacts to surface water and water quality would not be expected at JBSA-LAK.

Wetlands

No projects would occur directly within wetlands at Kelly Field; however, two projects would occur within 1,000 feet of existing wetlands (**Figure 3-10**). Project I7 would construct terraces along the hillside areas of Leon Creek, approximately 750 feet upstream of a riverine streambed wetland, LAK36, on the western border of Kelly Field. This action would result in a long-term beneficial impact to the wetland by limiting erosion and runoff potential. Project C10/D10 would involve construction and demolition approximately 900 feet from an aquatic bed wetland, LAK37, farther south along Kelly Field's western border. The proximity of steeper slopes in this area would increase the risk for impacts to this downstream resource. With appropriate BMPs in place to reduce the potential for runoff, impacts would be minor and short term. No additional projects at Kelly Field would occur within 1,000 feet of wetlands.

At LAK-East, Project C11 would have the potential to directly impact a wetland resource (**Figure 3-11**). Project C11 would construct a sidewalk and pedestrian bridge that would cross a small emergent wetland, LAK29, within a drainage ditch that runs parallel along the north side of Truemper Street on the eastern portion of the district. The project would construct the bridge perpendicular to the wetland and would have the potential to directly impact approximately 0.01 acre of this wetland. Installation of a dedicated sidewalk and pedestrian bridge in this location would have minor beneficial effects to the resource by reducing the potential for future damaging foot travel through the resource itself. Four other projects at LAK-East, C12, C13, I3, and I4, would occur within 1,000 feet of multiple emergent wetlands located within a drainage ditch that runs parallel to Truemper Street. Project C12 would construct a memorial park at the corner of Truemper Street and Kenly, approximately 500 feet from the eastern extent of wetland LAK30. Project C13 would construct temporary lodgings at the intersection of Truemper Street and Kenly Avenue, approximately 500 feet from the western extent of the wetland directly impacted by the pedestrian bridge, emergent wetland LAK29. Kenly Street and Truemper Street act as physical barriers that separate these wetlands from Projects C12 and C13, respectively, minimizing the potential for both construction impacts and sedimentation impacts to the resources. Project I3 would renovate an existing fitness center and would not have the potential for impacting the nearby wetlands. Project I4 would improve the Parade Field on the north side of emergent wetlands LAK29 and LAK30. The Parade Field is geographically bound on the south by the drainage ditch associated with these wetlands. Improvements to the Parade Field would have the potential to take place within 100 feet of the wetland at the closest; however, much of the improvements would take place farther north, up to 0.25 mile away. No other projects at LAK-East would directly impact wetlands or occur within 1,000 feet of wetlands. Potential effects on wetlands would be managed by individual project design and implementation of BMPs.

One project at LAK-West, Project C9, would have the potential to cause direct impacts to a wetland (**Figure 3-12**). Project C9 would construct a troop walk that spans a linear emergent wetland, LAK01, within the drainage ditch parallel to Military Highway. The bridge would be anticipated to directly impact 0.02 acre of the wetland. To minimize impacts to the wetland, the bridge design would cross perpendicularly to the resource, minimizing the overall footprint. Three other projects at LAK-West, C17, C20, and D21, would occur within 1,000 feet of another emergent wetland, LAK05. Project C17 would construct two parking lots approximately 500 feet from a linear wetland associated with an open drainage ditch along the southwestern edge of the district. Projects C20 and D21 would involve construction and demolition activities approximately 900 feet from this same southwestern wetland. The potential for effects from these actions to impact wetland resources would be managed by individual project design and implementation of BMPs. No other projects at LAK-West would directly impact wetlands or occur within 1,000 feet of wetlands.

No projects would occur directly within wetlands at the CTA; however, five projects would occur within 1,000 feet of wetlands (**Figure 3-13**). Project I7 would involve road maintenance and construction that would have the potential to occur within approximately 100 feet of a riverine streambed wetland, MED22. This wetland is associated with a tributary located just to the west of Medio Creek where Medina Road turns to the north. Infrastructure work on the existing roadway would have the potential to impact the nearby wetland through runoff or sedimentation. BMPs would be utilized to minimize the potential for impacts to the resource. Project I3 would involve repairs and upgrades to control gates located approximately 500 feet from emergent wetlands MED15 and MED47 on both the north and south sides of the MSA. The upgrade to existing infrastructure is not likely to impact these resources, which are physically separated from the project locations by the perimeter road around the MSA. Projects C4/D4, D5, and I4 would occur within approximately 100 to 500 feet of a linear emergent wetland, MED21, associated with an open drainage ditch in the developed northeastern portion of the CTA. Project D5 would demolish multiple small buildings and pool structures on a property on the southern border of the drainage ditch and its associated wetland, MED21. The construction, demolition, and renovation actions associated with Projects C4/D4 and I4 would be separated from the wetland by Eagle Drive. Indirect impacts to wetlands would have the potential to occur as a result of water runoff, erosion, and sedimentation; however, the Air Force would attempt to minimize indirect impacts through the use of BMPs.

Stormwater Management

Flooding is present in areas of the Installation during times of heavy rainfall; the Proposed Action would eliminate a parking lot on the south side of LAK-West under Project D13 that is prone to flooding during these periods. Two projects under the Proposed Action would address deficiencies in the existing stormwater infrastructure at JBSA-LAK. Project C11/D11 at LAK-West would construct an additional detention pond near the geographic center of the district. Project C15 would expand an existing detention pond at Selfridge Avenue and Carswell Avenue near the southern end of LAK-West. Implementation of the Proposed Action would reduce the amount of impervious surface across the Installation by approximately 100,000 square feet. This reduction would allow for greater stormwater infiltration into the soils and reduce the strain on the stormwater infrastructure and the potential for flooding. These projects would improve the capacity and efficiency of stormwater conveyance across the Installation, resulting in long-term beneficial impacts.

Floodplains

The Air Force has determined that certain facilities and infrastructure proposed in the ADP necessitate development within or near the 100-year floodplains on JBSA-LAK. In such cases, alternative sites were considered to avoid or minimize potential adverse effects on floodplain resources. The planning process for this EA began with development of the ADP and discussions regarding where to site new facilities and infrastructure, including issuance of an EPN to solicit input on potential effects on floodplains and wetlands from the Proposed Action (see **Appendix B**). The resultant location recommendations considered multiple factors, including mission, safety, and relevant environmental constraints. Under the Proposed Action, some project sites within or proximate to floodplains were determined necessary to maintain mission support capabilities. The majority of construction, demolition, and infrastructure projects under the Proposed Action would not occur directly within a regulatory floodplain on JBSA-LAK; however, a small

number of project actions would occur either directly within the 100-year floodplain or would have the potential to impact nearby floodplains.

Two projects at Kelly Field, Projects C8 and I7, would occur directly within the 100-year floodplain (**Figure 3-10**). Project C8 would be located fully within the floodplain and construct a new bridge across Leon Creek. The project would be constructed to accommodate a 25-year flood design, directly impacting approximately 0.13 acre of the floodplain. The project would result in a long-term beneficial impact to the floodplain environment by improving the readiness of the Installation to navigate future floodplain issues and limiting the potential for floodwater conflicts with the transportation infrastructure. Project I7 would occur fully within the floodplain and would disturb approximately 50,000 cubic yards of soil; however, the goal of the project is to stabilize these soils through the construction of terraces, reducing the soil's susceptibility to future erosion and sedimentation into the floodplain. Of the 21 remaining construction, demolition, and infrastructure projects at Kelly Field, 15 are located within a quarter mile of the floodplain associated with Leon Creek. These projects would not result in direct impacts to the floodplains and would only have slight potential for sedimentation and runoff. With the exception of Project C10/D10, these projects would occur in areas of 0 to 1 percent slopes associated with the airfield, limiting the potential for erosion and runoff impacts during construction. Project C10/D10 occurs in an area of steeper slope, and the potential for indirect impacts would be managed by implementation of BMPs during project construction.

LAK-East Project C11 would have the potential to directly impact the 100-year floodplain through the construction of a bridge that spans the associated drainage ditch (**Figure 3-11**). Up to 0.03 acre of floodplain would have the potential to be directly impacted by the construction of this bridge. The potential for runoff would be high during project construction; however, construction of a pedestrian bridge that traverses the area would not impact the long-term function of the floodplain because water would be allowed to pass beneath the structure. Of the remaining 14 projects at LAK-East, 9 would occur within 0.25 mile of the 100-year floodplain but would not result in direct impacts. Potential effects on floodplain resources near these projects as a result of construction activities, such as sedimentation and runoff, would be managed by individual project design and implementation of BMPs. There are no floodplains present within the boundaries of LAK-West (**Figure 3-12**), and no direct or indirect impacts would be anticipated to floodplain resources as a result of the Proposed Action.

Project I1 at the CTA would involve repairing water crossing bridges across the district (**Figure 3-13**). The floodplains within CTA closely follow the pattern of the surface waters flowing through the district. Improvements to bridges passing over streams within the CTA would necessitate construction within a 100-year floodplain. The overall function of the floodplains would be improved by the removal of flood debris that presently block water flow, as well as bank stabilization measures to reduce erosion and sedimentation into the floodplain. Combined with the associated roadway repairs, Project I1 would have the potential to impact approximately 1.26 acres of existing floodplain. Short-term erosion and sedimentation impacts would be managed during construction and repair activities; however, the renovation of Medina Road would have the potential to provide minor, long-term beneficial impacts to the floodplain through more effective conveyance of storm and floodwaters across its surface to the nearby tributaries. Project D5 would demolish an abandoned pool and associated buildings within the floodplain and would have the potential to directly impact approximately 0.46 acre within the floodplain. There would be the potential for sedimentation and erosion impacts during demolition; however, removal of abandoned structures from within the floodplain would reduce the potential for buildings in disrepair to further degrade within the floodplain. With the exception of Projects C2 and C8, which would occur within the central portion of the district, all other projects within the CTA would take place within 0.25 mile of an existing floodplain due to the nature of surface-water flow across the district. The remaining actions primarily would take place in previously developed areas within the CTA. While runoff and sedimentation would have the potential to occur during project construction for many of these actions, the potential for these effects would be managed by implementation of BMPs.

Proposed project actions that would directly impact floodplains would require JBSA Environmental to coordinate through the Bexar County Floodplain Administrator for compliance under EO 11988. Additional specific requirements may emerge from this coordination and would potentially include hydraulic modeling and floodplain map revisions.

Additional options for project locations were also evaluated during the ADP planning process. However, the nature of the projects directly impacting floodplains involves the construction or renovation of infrastructure specifically in place to traverse these areas. Due to various planning constraints and the importance of other factors such as land use and the military mission, no other practicable alternatives for siting these projects were identified under the Proposed Action.

No other projects at JBSA-LAK would have the potential to cause direct or indirect impacts to floodplains. Impacts centered around construction or demolition activities within the mapped floodplains would be minimal and short term and managed by implementation of BMPs; however, the implementation of the Proposed Action would provide multiple long-term beneficial impacts to the continued function of existing floodplains.

To document planning conducted to avoid and minimize potential adverse effects of the Proposed Action on 100-year floodplains, the Air Force prepared a FONPA. The FONPA also identifies and documents the measures the Air Force would take to avoid and minimize adverse effects.

Groundwater

Construction, demolition, and infrastructure activities associated with the Proposed Action would create the potential for contaminants to leach or discharge to groundwater of the Edwards Aquifer and Trinity Aquifer. All projects at JBSA-LAK would occur within the artesian zone of the Edwards Aquifer, which has a low potential for permeability of surface water. Therefore, contamination from surface- and stormwater runoff is unlikely to have a significant adverse effect on the groundwater supply or quality in the ROI, and JBSA-LAK is not subject to any EAA rules or regulations. With BMPs in place, potential adverse effects on groundwater resources under the Proposed Action would be minor and short term.

Groundwater monitoring and extraction wells could potentially be located within the proposed construction footprint of Project C6. Replacement of these wells would potentially be required as a result of the taxiway extension. This action would need to be coordinated with the Former Kelly AFB Base Realignment and Closure Team prior to project implementation.

Under the Proposed Action, reasonably foreseeable development plans and projects within and around the San Antonio metropolitan area also would be subject to regulation under the NPDES permitting program. These regulatory compliance measures would serve to prevent or minimize potential effects on water resources from development on a regional scale. Therefore, in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions, potential cumulative effects on water resources would not be likely to occur.

3.9.3 Best Management Practices and Mitigation Measures

The Air Force would require contractors to implement the following BMPs to reduce potential effects on water resources under the Proposed Action:

- Comply with JBSA environmental specifications during construction projects.
- Comply with Sections 404/401 of the CWA including any site-specific BMPs established through the permitting process.
- Construction sites are inspected for proper use and implementation of stormwater pollution prevention BMPs.
- Prior to construction, obtain an applicable TPDES permit to manage stormwater on a site-specific basis; prepare a TCEQ-approved SWP3 and submit a NOI as appropriate; and adhere to permit conditions during construction to minimize soil erosion, sedimentation, and compaction under the Proposed Action.

- Comply with Section 438 of EISA to maintain the pre-development hydrology of each applicable project site to the maximum extent technically feasible and incorporate LID measures and techniques into the design of the Proposed Action to increase onsite infiltration of stormwater.
- When possible, establish construction staging areas on existing hardscape and at least 100 feet away from surface-water resources.

No mitigation measures for potential effects on water resources under the Proposed Action are recommended.

3.10 BIOLOGICAL RESOURCES

Biological resources include native or invasive plants, animals, and the habitats upon which they rely for sustenance and survival. These resources include terrestrial and aquatic species; game and non-game species; special status species (i.e., state or federally listed species and species of concern such as migratory birds); and environmentally sensitive habitats or natural areas that have functional or intrinsic value to humans.

Pursuant to the *Sikes Act* ([16 USC § 670a](#)), JBSA maintains an Integrated Natural Resources Management Plan (INRMP) to guide the use and management of natural resources within the Joint Region, including JBSA-LAK (Air Force, 2020b). The ESA, as amended by the *National Defense Authorization Act for Fiscal Year 2004* ([Public Law 108-136](#)), exempts military installations from “critical habitat” designations in cases where a Sikes Act-compliant INRMP provides a demonstrable benefit to one or more ESA-listed species.

The ROI for biological resources includes JBSA-LAK and the immediately adjacent areas that contain sensitive or beneficial natural resources. Beyond this ROI, the potential for adverse impacts on biological resources would not be anticipated.

3.10.1 Existing Conditions

JBSA-LAK resides within the Texas Blackland Prairie ecoregion. An ecoregion is geographically defined by an area with similar atmospheric and environmental conditions. Texas Blackland Prairies is a subsection of the South Central Semi-Arid Prairies characterized by a mild, humid, and subtropical climate. The ecoregion is now urbanized but was historically covered in tallgrass prairies. Much of this land is low to moderate in grade and currently supports low wildlife and vegetative diversity. Management practices are needed around aircraft movement areas because an abundance of biological resources could be detrimental to the safe launch of aircraft from the Installation (Air Force, 2014).

3.10.1.1 Vegetation

Approximately 40 percent of total land area on JBSA-LAK is developed. Vegetation within these portions of the Base primarily consists of managed grasses and varying types of ornamental plants and trees, including native and non-native species. Maintained grass areas associated with the built environment typically support the military population working or living on the Base (e.g., community or recreational areas). Common grass species on JBSA-LAK include Bermuda grass (*Cynodon dactylon*), Buffalo grass (*Bouteloua dactyloides*), St. Augustine grass (*Stenotaphrum secundatum*), and zoysiagrass (*Zoysia* sp.). Common ornamental plant and tree species include ball moss (*Tillandsia recurvata*), mistletoe (*Phoradendron tomentosum*), Arizona ash (*Fraxinus velutina*), cedar elm (*Ulmus crassifolia*), plateau live oak (*Quercus fusiformis*), and Texas persimmon (*Diospyros texana*).

To a lesser extent, undeveloped lands on JBSA-LAK contain herbaceous grasslands, shrubland, and woodland forest and riparian vegetation. These lands are primarily associated with the CTA, where operational constraints limit development (Air Force, 2020b).

3.10.1.2 Wildlife Species and Habitat

There is limited habitat availability for wildlife and fish species on JBSA-LAK because the majority of land on the Installation is developed. Impervious surfaces, infrastructure, and lack of vegetation within Kelly Field, LAK-East, and LAK-West require species to adapt to urban landscapes; however, the CTA experiences more species diversity than other areas of JBSA-LAK due to being largely undeveloped. The Installation contains both native and non-native species, including birds such as mourning doves, crows and hawks, and grackles; mammals such as bats, rabbits and squirrels, and coyotes; and various reptiles and amphibians. Installation-specific species are recorded in the appendices of the JBSA INRMP (Air Force, 2020b).

Non-native, nuisance species of wildlife and insects on JBSA-LAK are managed in accordance with JBSA's Integrated Pest Management Plan. At the CTA, feral hogs have become a landscape sustainability and mission concern; their rooting and wallowing behaviors increase soil erosion and negatively impact water quality. Wild hogs also prey on small vertebrate animals and eat the eggs of ground nesting birds. As a result, JBSA has implemented a feral hog management program to manage populations across the Installation, primarily through trapping. The red imported fire ant (*Solenopsis invicta*) is the primary invertebrate pest species subject to management on JBSA-LAK.

3.10.1.3 Threatened and Endangered Species

Threatened and endangered species include plants and animals that receive protection under federal or state laws and regulations. These include the ESA, MBTA, EO 13186, [Responsibilities of Federal Agencies to Protect Migratory Birds](#), and the Texas Parks and Wildlife Code (Title 5, Chapters 67 and 68). No plant or animal species protected under state or federal law are known to occur on or adjacent to JBSA-LAK; however, several species are known to exist in Bexar County and may be observed in the vicinity of the Base (Table 3-9).

Table 3-9
Threatened or Endangered Species within Bexar County, Texas

Common Name	Scientific Name	Federal Status	State Listed
Birds			
Golden-Cheeked Warbler	<i>Setophaga chrysoparia</i>	E	E
Least Tern	<i>Sterna antillarum</i>	E	E
Piping Plover	<i>Charadrius melodus</i>	T	T
Red Knot	<i>Calidris canutus rufa</i>	T	T
Whooping Crane	<i>Grus americana</i>	E	E
Wood stork	<i>Mycteria americana</i>	E	T
Tropical parula	<i>Setophaga pitiayumi</i>	-	T
White-faced Ibis	<i>Plegadis chihi</i>	-	T
Zone-tailed hawk	<i>Buteo albonotatus</i>	-	T
Amphibians			
San Marcos Salamander	<i>Eurycea nana</i>	T	T
Texas Blind Salamander	<i>Eurycea rathbuni</i>	E	E
Reptiles			
Texas horned lizard	<i>Phrynosoma cornutum</i>	-	T
Texas indigo snake	<i>Drymarchon malanurus erebennus</i>	-	T
Texas Tortoise	<i>Gopherus berlandieri</i>	-	T
Cagle's map turtle	<i>Graptemys caglei</i>	-	T
Fish/Crustaceans			
Fountain Darter	<i>Etheostoma fonticol</i>	E	-
Peck's Cave Amphipod	<i>Stygobromus pecki</i>	E	-
Texas fatmucket	<i>Lampsilis bracteata</i>	C	-
Texas pimpleback	<i>Quadrula petrina</i>	C	-
Toothless blindcat	<i>Trogloglanis pattersoni</i>	-	T

Common Name	Scientific Name	Federal Status	State Listed
Widemouth blindcat	<i>Satan eurystomus</i>	-	T
Mammals			
Black bear	<i>Ursus americanus</i>	-	T
White-nosed coati	<i>Nasua narica</i>	-	T
Insects			
Ground beetle [unnamed]	<i>Rhadine exilis</i>	E	-
Ground beetle [unnamed]	<i>Rhadine infernalis</i>	E	-
Comal Springs dryopid beetle	<i>Stygoparnus comalensis</i>	E	-
Comal Springs riffle beetle	<i>Heterelmis comalensis</i>	E	-
Helotes mold beetle	<i>Batrissodes ventyivi</i>	E	-
Monarch butterfly	<i>Danaus plexippus</i>	C	-
Arachnids			
Braken Bat Cave meshweaver	<i>Cicurina venii</i>	E	-
Cokendolpher Cave harvestman	<i>Texella cokendolpheri</i>	E	-
Government Canyon Bat Cave meshweaver	<i>Cicurina vespera</i>	E	-
Government Canyon Bat Cave spider	<i>Neoleptoneta microps</i>	E	-
Madia's Cave meshweaver	<i>Cicurina madia</i>	E	-
Robber Baron Cave meshweaver	<i>Cicurina baronia</i>	E	-
Flowering Plants			
Bracted Twistflower	<i>Streptanthus bracteatus</i>	C	-
Texas Wild-rice	<i>Zizania texana</i>	E	-

Source: USFWS, 2022; TPWD, 2022

C = Candidate; E = Endangered; F = Federal; S = State; SC = Special Concern; T = Threatened

Eleven federal- and/or state-listed species may be impacted by JBSA's withdrawal from the Edwards Aquifer. JBSA currently has one final Biological Opinion in place, *The Effects of JBSA Water Draw on Listed Species of the Edwards Aquifer* (Consultation No. 02ETAU00-2013-F-0060). The Biological Opinion pertains to water draw limits for all of JBSA, including any new landscaping, and addresses effects of JBSA water withdrawal from the Edwards Aquifer on federally protected species.

Critical species habitat in Bexar County coincides with many cave-dwelling and insect species. These species have not been observed on JBSA-LAK; thus, further consideration of critical species habitat is not needed.

3.10.1.4 Migratory Birds

Migratory birds are protected under the MBTA. JBSA-LAK has limited habitat for birds within the developed portions of the Installation; however, the undeveloped land at the CTA provides ample roosting and nesting habitat for migratory birds. According to the USFWS' [Birds of Conservation Concern 2021](#) and the JBSA INRMP appendices, eight such species occur within the Edwards Plateau region and have the potential to occur on JBSA-LAK. These species include the American kestrel (*Falco sparverius*), Bewick's wren (*Thyomanes bewickii*), common nighthawk (*Chordeiles minor*), eastern meadowlark (*Sturnella magna*), great blue heron (*Ardea herodias*), little blue heron (*Egretta caerulea*), loggerhead shrike (*Lanius ludovicianus*), and northern bobwhite (*Colinus virginianus*) (Air Force, 2020b; USFWS, 2021).

3.10.2 Environmental Consequences

Potential adverse effects on biological resources would depend on factors unique to an individual or population of plant(s) or animal(s). These include the resource's value or importance to humans (e.g., commercial, recreational, ecological, and scientific); legal status under federal, state, or local law and/or international treaty; range and abundance across geography or jurisdiction; and vulnerability or sensitivity to a particular activity considering distance from source, exposure duration, and a myriad of other variables.

The Air Force defines a significant effect on biological resources within the ROI as one or more of the following:

- mortality or diminishment of regionally or locally important plant or animal species
- substantial amount of vegetation removal from riparian habitats
- direct loss or substantial degradation of terrestrial (e.g., fragmentation) or aquatic (e.g., wetlands) habitats
- an adverse effect on the recovery of a federally listed or candidate species

3.10.2.1 No Action Alternative

Under the No Action Alternative, the projects under the Proposed Action would not occur, and biological resources at JBSA-LAK would continue to be managed in accordance with the JBSA INRMP guidelines. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.10.2.2 Proposed Action

Construction projects involving new buildings and structures have the potential to impact biological resources through new land disturbances. Infrastructure projects typically involve renovation and maintenance on existing buildings and structures and are less likely to create new disturbances and potential impacts.

Vegetation

Under the Proposed Action, effects to native or non-native plant species would be minimal at Kelly Field, LAK-East, and LAK-West. These districts are highly developed and proposed projects primarily would occur on previously disturbed land. Although CTA is largely undisturbed and experiences more vegetative diversity than the other districts at JBSA-LAK, the projects under the Proposed Action would occur in previously developed areas of CTA and any impacts to undisturbed vegetation would be short term and temporary.

Wildlife Species and Habitat

Adverse effects to wildlife species and habitat would not be anticipated under the Proposed Action. Kelly Field, LAK-East, and LAK-West are mostly developed and located in an urbanized environment not suitable for diverse species habitation. With the exception of CTA, species located on JBSA-LAK have had to adapt to an urban environment and are adjusted to cohabitation with humans. While CTA is more susceptible to wildlife species and habitat disruption; projects under the Proposed Action would occur in previously disturbed areas with minimal changes to the current landscape and available habitat. No adverse, long-term impacts to the wildlife present on the Installation would be expected.

Threatened or Endangered Species

Federally listed threatened or endangered species are not known to occur within the boundaries of the Installation; therefore, the Proposed Action at JBSA-LAK would not be expected to impact these resources. Additionally, the Installation's daily water usage only consumes 10 to 15 percent of the maximum capacity. Water consumption from Edwards Aquifer would not be anticipated to change substantially, and the 11 federally and/or state-listed species within Edwards Aquifer would not be impacted by any minor changes.

The potential occurrence of state-listed species in the project area is primarily dependent upon the availability of suitable habitat. There would be the potential to encounter state-protected species within the undeveloped portions CTA. These species could potentially include state-protected reptile species, such as the Texas horned lizard, Texas indigo snake, Texas tortoise, or the Cagle's mapped turtle, all of which have been known to occur within Bexar County and may have suitable habitat within CTA. State-listed reptiles that are typically slow moving or unable to move due to cool temperatures are especially susceptible to being directly impacted during site preparation activities.

Small wildlife such as lizards, turtles, and snakes are susceptible to falling into open pits, excavations, and trenches left open and/or uncovered in a project area. The capture, trap, take, or killing of state-listed threatened and endangered animal species is unlawful unless expressly authorized under a permit issued by the USFWS or TPWD. The construction contractor would take measures to minimize interference, disturbance, or damage to wildlife species in areas where risk of encountering the species would be greater.

Migratory Birds

The JBSA INRMP details construction restrictions that are in place to protect migratory birds during the bird breeding season, which generally occurs 1 March through 15 August. Restrictions during this period aim to reduce disturbance of bird habitat and include limitations on vegetation and brush removal, vehicle use, equipment locations and duration of use, and the use of chemical substances. Outside of the breeding season (16 August through 28 February), vegetation and brush removal and vehicle use are still restricted. Under the Proposed Action, construction and demolition activities would proceed under the terms of the existing restrictions in order to minimize the potential for impacts to migratory birds.

Under the Proposed Action, conservation laws and initiatives would continue to limit, control, or guide development in a manner that protects natural resources in the public interest. JBSA-LAK would continue to maintain and implement a USFWS-approved INRMP. These measures would ensure biological resources on and around JBSA-LAK would be maintained at levels commensurate with the objectives of the natural resources management plans. Therefore, when considered in conjunction with other, past, present, and reasonably foreseeable environmental trends and planned actions, potential cumulative effects on biological resources would not be likely to occur.

3.10.3 Best Management Practices and Mitigation Measures

The Air Force would require contractors to implement the following BMPs to reduce potential effects on biological resources under the Proposed Action:

- Comply with JBSA environmental specifications during construction projects.
- Revegetate disturbed areas with native species; TPWD recommends incorporating pollinator conservation and management into revegetation and landscaping plans.
- Limit or avoid construction (e.g., tree removal or noise-intensive activities) within the nesting season of migratory birds observed on or near project sites.
- Design, construct, and maintain project-specific stormwater management features to the benefit of wildlife habitat, when applicable and possible.

No mitigation measures for potential effects on biological resources under the Proposed Action are recommended.

3.11 CULTURAL RESOURCES

Cultural resources are any prehistoric or historic district, site, building, structure, or object considered important to a culture or community for scientific, traditional, religious, or other purposes. These resources are protected and identified under several federal laws and EOs. Cultural resources include the following subcategories:

- Archaeological (i.e., prehistoric or historic sites where human activity has left physical evidence of that activity, but no structures remain standing);
- Architectural (i.e., buildings, structures, groups of structures, or designed landscapes that are of historic or aesthetic significance); and
- Traditional Cultural Properties (TCPs) (resources of traditional, religious, or cultural significance to Native American Tribes).

Significant cultural resources are those that have been listed on the National Register of Historic Places (NRHP) or determined to be eligible for listing. To be eligible for the NRHP, properties must be 50 years old and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. They must possess sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historical significance, and meet at least one of four criteria for evaluation:

- A Associated with events that have made a significant contribution to the broad patterns of our history
- B Associated with the lives of persons significant in our past;
- C Embody distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; and/or
- D Have yielded or be likely to yield information important in prehistory or history.

Properties that are less than 50 years old can be considered eligible for the NRHP under Criterion G if they possess exceptional historical importance. Those properties must also retain historic integrity and meet at least one of the four NRHP criteria (Criteria A, B, C, or D). The term “historic property” refers to National Historic Landmarks, NRHP-listed, and NRHP-eligible cultural resources.

Federal laws protecting cultural resources include the *Archaeological and Historic Preservation Act of 1960*, as amended ([54 USC § 300101](#) et seq.), the *American Indian Religious Freedom Act of 1978* ([42 USC § 1996](#)), the *Archaeological Resources Protection Act of 1979*, as amended ([16 USC §§ 470aa–470mm](#)), the *Native American Graves Protection and Repatriation Act of 1990* ([25 USC §§ 3001–3013](#)), the NHPA, as amended through 2016, and associated regulations ([36 CFR Part 800](#)). The NHPA requires federal agencies to consider effects of federal undertakings on historic properties prior to making a decision or taking an action and integrate historic preservation values into their decision-making process. Federal agencies fulfill this requirement by completing the NHPA Section 106 consultation process, as set forth in 36 CFR Part 800. NHPA Section 106 also requires agencies to consult with federally recognized Native American Tribes with a vested interest in the undertaking. NHPA Section 106 requires all federal agencies to seek to avoid, minimize, or mitigate adverse effects to historic properties ([36 CFR § 800.1\(a\)](#)).

For cultural resources analysis, the ROI is defined by the APE. The APE is defined as the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist” ([36 CFR § 800.16\(d\)](#)) and thereby diminish their historic integrity. The direct and indirect APE for JB-SA-LAK for this EA includes 50 meters and 0.5-mile around each project location, respectively.

The ROI for cultural resources is commensurate with the APE for the Proposed Action. No adverse impacts on cultural resources would be anticipated beyond the ROI.

3.11.1 Existing Conditions

Under the NHPA, “significant” cultural resources are those listed or determined eligible for listing on the NRHP. Historic properties 50 years or older that have national, state, or local significance in American history, architecture, archaeology, engineering, or culture are potentially eligible for listing on the NRHP; however, properties less than 50 years old that possess exceptional historical importance may also qualify as eligible for listing.

Under the NHPA, a property or site to be listed or eligible for listing on the NRHP must possess sufficient integrity of location, design, setting, materials, workmanship, feeling, and association, and meet one or more of the NRHP significance criteria ([54 USC § 302103](#)).

Section 106 requires federal agencies to consider and assess the effects an undertaking may have on historic properties. It also requires federal agencies to consult with the SHPO to avoid, reduce, or minimize adverse effects. Further, federal agency consultations under Section 106 provide an opportunity for public involvement. The SHPO, federally recognized Native American Tribes, representatives of local governments, other federal agencies with jurisdiction related to the undertaking, and individuals and organizations with a demonstrated interest in the undertaking may participate in the Section 106 process as “consulting parties.” Through the scoping process for this EA, these stakeholders were identified and invited to participate in the Section 106 and EIAP processes for the Proposed Action (see **Appendix A**).

In accordance with [36 CFR Part 800](#), the Air Force fulfills its obligations under Section 106 at JBSA by PA with the Texas SHPO. The PA applies to operation, maintenance, and development activities on JBSA. Under the Proposed Action, the Air Force would adhere to the project review process as stipulated in the PA. This process outlines the agreed upon procedures for monitoring, recording, qualifying, and mitigating for potential adverse effects on cultural resources under JBSA’s management, including those associated with JBSA-LAK. The PA also identifies development program activities that are “exempted” from Section 106 requirements.

3.11.1.1 Archaeological Resources

A total of 76 archaeological sites have been identified across JBSA-LAK. Of these, six sites are eligible for listing in the NRHP, and nine sites are currently under review (Air Force, 2020c). The Cultural Resources Manager (CRM) is currently evaluating these nine sites as part of a JBSA-wide project. The results of the study will be documented in the JBSA Integrated Cultural Resources Management Plan (ICRMP). The CTA contains 47 of the identified sites across JBSA-LAK, the majority of which are ineligible prehistoric quarry areas and campsites (Air Force, 2020c).

3.11.1.2 Architectural Resources

JBSA-LAK contains two historic districts and multiple individually eligible architectural resources across the Installation (**Table 3-10, Figures 3-14–3-17**).

Table 3-10
Individually Eligible Architectural Resources at JBSA-LAK

District	Building Number	Description	Year Built
Kelly Field	910	Reserve forces general training support	1942
LAK-West	5206	Museum building	1942
LAK-West	5432	Base chapel	1942
CTA	301	Telecommunications facility	1955
CTA	421	Missile assembly shop	1954
CTA	431	Combat arms training maintenance building	1954
CTA	433	Base engineer covered storage facility	1959
CTA	444	Munitions maintenance administration	1961

Note: Table does not include the individually eligible infrastructure.

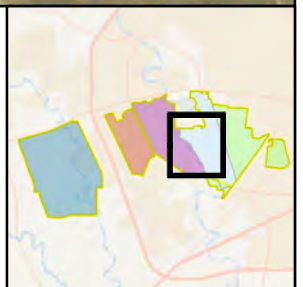
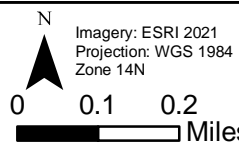
The Security Hill Historic District is located in the southeast corner of the Base at the border of Kelly Field and LAK-East. Security Hill contains 32 buildings and was recommended eligible as a historic district as part of a 1998 assessment (Earth Tech, 1998). Although within LAK-East, Security Hill is also considered to be a significant resource area for the old Kelly Field hill area (**Figure 3-14**). Kelly Field contains only one individually eligible building, B-910 (JBSA, 2020c). LAK-East contains no individually eligible architectural resources (**Figure 3-15**). LAK-West contains only two individually eligible historic properties, the Chapel and the Museum, both located centrally within the district (**Figure 3-16**). There are also an individually eligible utility distribution line and two individually eligible driveways within JBSA-LAK. The CTA contains five individually eligible resources, as well as the Q-Area Historic District located centrally within the district.



FIGURE 3-14

CULTURAL RESOURCES
KELLY FIELD

- | | |
|---------------------|------------------------|
| ● Construction | Historic District |
| ▲ Demolition | JBSA-LAK |
| ■ Infrastructure | 50-meter Direct APE |
| ⬡ Historic Building | 800-meter Indirect APE |



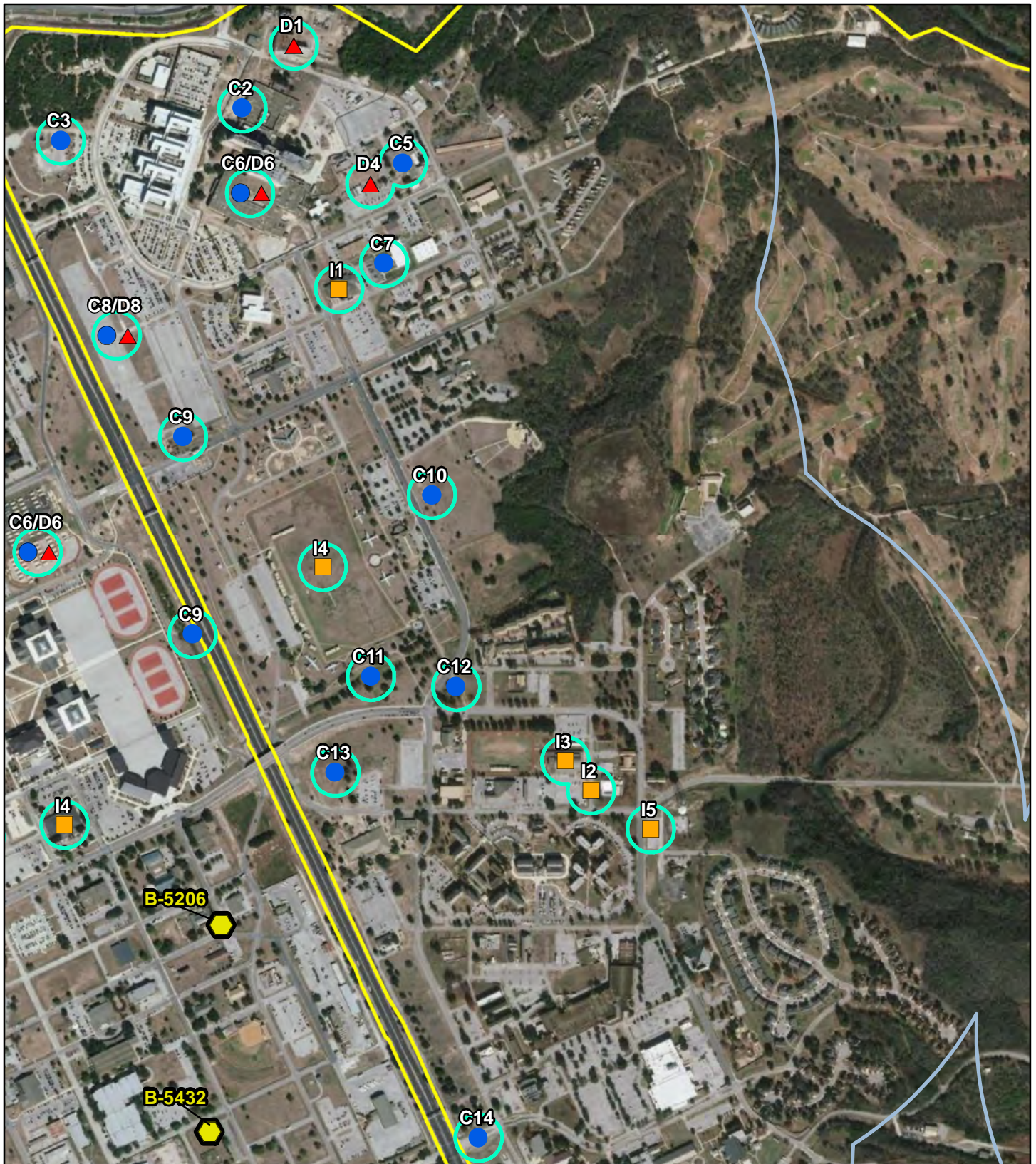


FIGURE 3-15

CULTURAL RESOURCES
LAK-EAST

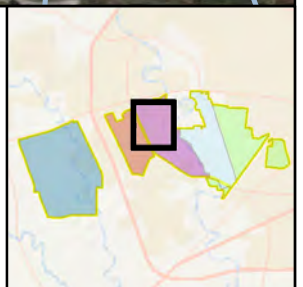
N

Imagery: ESRI 2021
Projection: WGS 1984
Zone 14N

0 0.05 0.1

Miles

- | | |
|---------------------|--------------------------|
| ● Construction | ▭ JBSA-LAK |
| ▲ Demolition | ▭ 50-meter Direct APE |
| ■ Infrastructure | ▭ 800-meter Indirect APE |
| ⬡ Historic Building | |



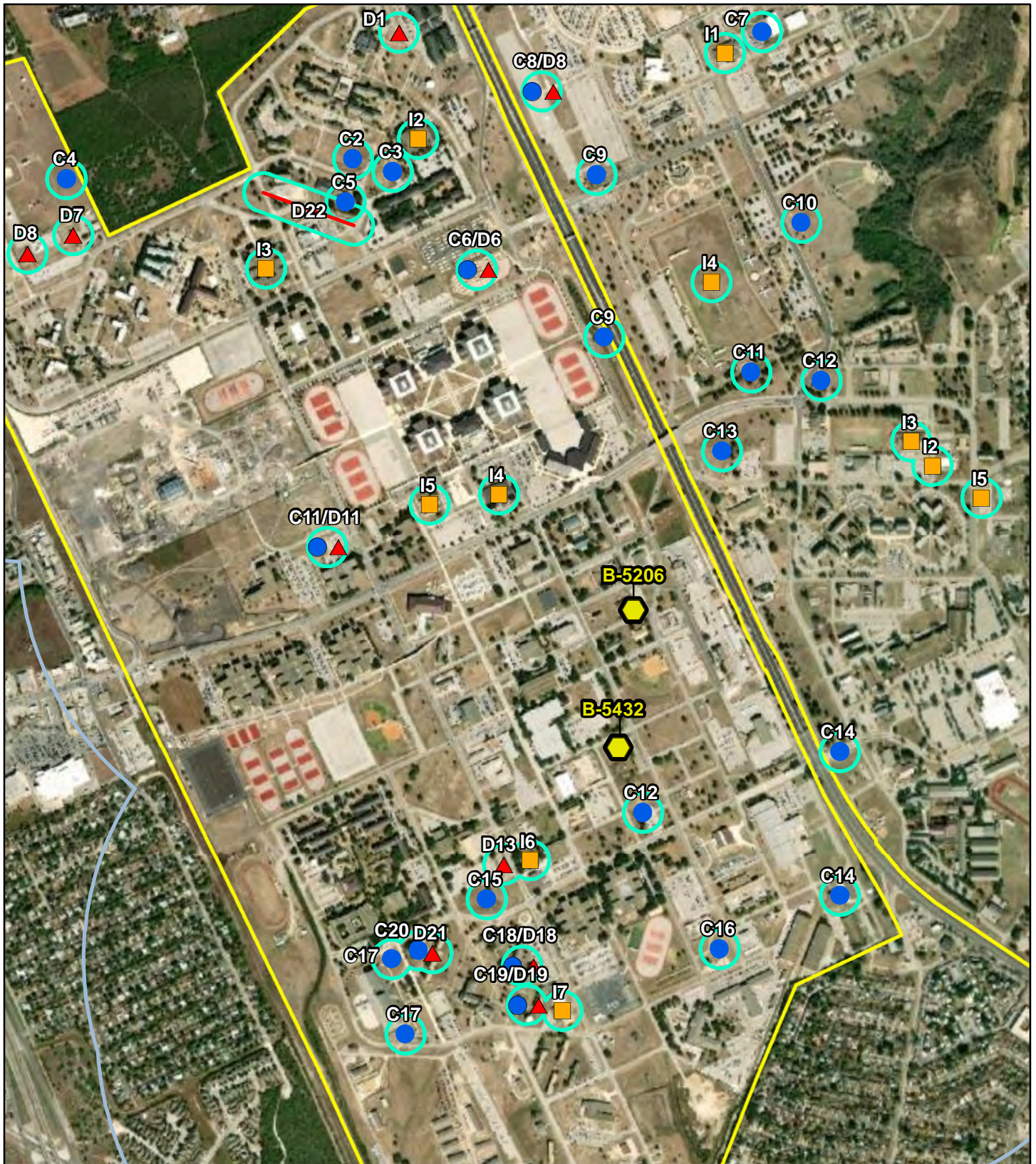
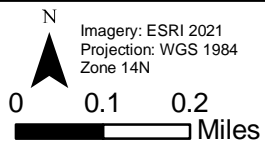
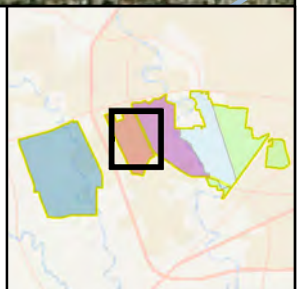


FIGURE 3-16

CULTURAL RESOURCES
LAK-WEST



- | | |
|---------------------|--------------------------|
| ● Construction | ▭ JBSA-LAK |
| ▲ Demolition | ▭ 50-meter Direct APE |
| ■ Infrastructure | ▭ 800-meter Indirect APE |
| ⬡ Historic Building | |
| — Linear Demolition | |



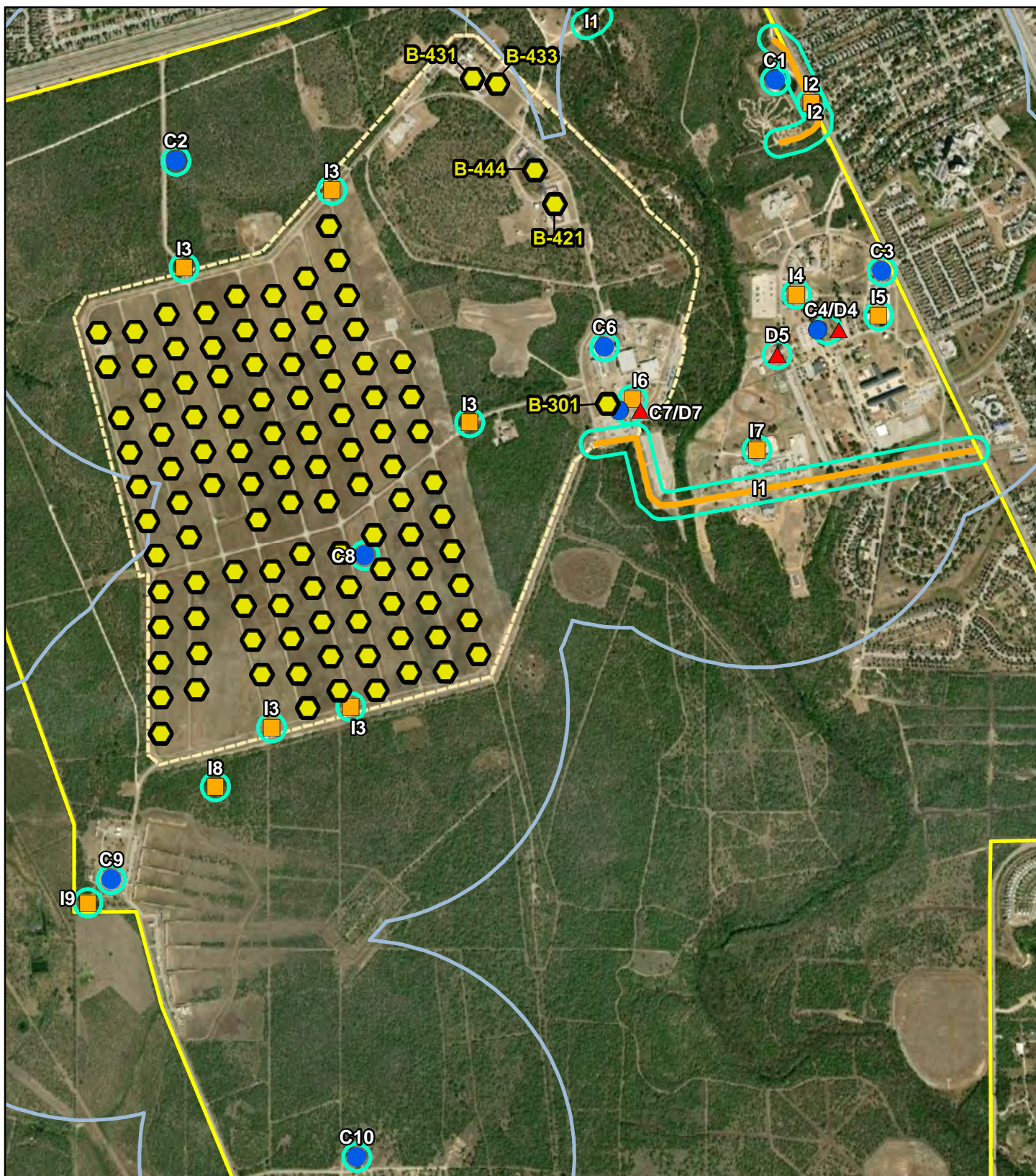


FIGURE 3-17

CULTURAL RESOURCES
CTA

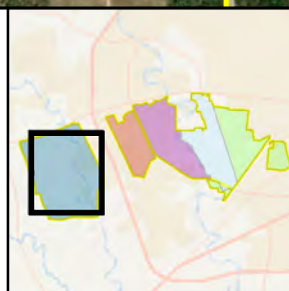


Imagery: ESRI 2021
Projection: WGS 1984
Zone 14N

0 0.1 0.2

Miles

- | | |
|-------------------------|------------------------|
| ● Construction | Historic District |
| ▲ Demolition | JBSA-LAK |
| ■ Infrastructure | 50-meter Direct APE |
| ⬡ Historic Building | 800-meter Indirect APE |
| — Linear Infrastructure | |



(**Figure 3-17**). The ammo bunkers located within this district are covered under the ACHP Program *Comment for World War II and Cold War Era (1939–1974) Ammunition Storage Facilities* and are no longer required to follow case-by-case Section 106 review processes for construction, demolition, or rehabilitation activities (ACHP, 2006).

A full inventory of the NRHP properties that are either individually eligible, listed, or contributing is recorded in the JBSA ICRMP appendices (Air Force, 2020c).

3.11.1.3 Native American Sacred Sites and Properties of Traditional and Religious Cultural Importance

Native American Tribes identified as having a historical association with the JBSA area include three federally recognized Tribes: Comanche Nation, Oklahoma; Mescalero Apache Tribe of the Mescalero Reservation, New Mexico; and Tonkawa Tribe of Indians of Oklahoma. These Tribes have been identified as having an interest in area activities and historic properties. The Air Force consults with the Comanche Nation, Mescalero Apache Tribe of the Mescalero Reservation, and Tonkawa Tribe of Indians on federal actions occurring at JBSA.

No TCPs or sacred sites have been identified at JBSA-LAK. No specific NAGPRA-related studies have been conducted. The Air Force maintains continued government-to-government communication to ensure compliance with applicable regulations (Air Force, 2020c).

3.11.2 Environmental Consequences

Adverse impacts on cultural resources might include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or audible elements that are out of character with the property or alter its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of the property out of agency ownership (or control) without adequate enforceable restrictions or conditions to ensure preservation of the property's historic significance. For the purposes of this EA, an impact is considered significant if it alters the integrity of a NRHP-listed, eligible, or potentially eligible resource or potentially impacts TCPs.

Currently the Proposed Action encompasses implementation of an ADP, outlining projects for the next 10 years. Some projects may have the potential to affect historical resources. **NEPA** is being accomplished at this point for **efficiency**, though JBSA is pursuing Section 106 consultations for each separate project as they are developed and project details and designs become available. JBSA shall follow the agreed upon guidelines from the PA for accomplishing the NHPA and Section 106 requirements.

3.11.2.1 No Action Alternative

Under the No Action Alternative, the projects under the Proposed Action would not occur, and cultural resources at JBSA-LAK would continue to be managed in accordance with the Installation's ICRMP guidelines. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.11.2.2 Proposed Action

Archaeological Resources

No projects would occur within the direct APE of any identified archaeological resources under the Proposed Action. In the event of an unanticipated discovery of an archaeological resource during demolition or construction, ground-disturbing activities would be suspended, and a cultural resources meeting called to determine if an Unanticipated Discovery Plan would be developed and implemented. No sites have been

found at Kelly Field and, although the presence of archaeological sites is always possible, the likelihood of discovery is low in this location due to extensive previous land disturbance.

Architectural Resources

Under the Proposed Action, one individually eligible property would be located within the direct APE of a proposed project, B-910 at Kelly Field. Project I3 proposes to renovate B-910, which would result in a long-term beneficial impact to historic resources by improving the condition of the building and ensuring the continued operation within the district.

No actions are planned within the Security Hill Historic District, although the indirect APE of some actions at Kelly Field overlaps with the historic district boundaries. The project actions would be unlikely to impact the viewshed of the historic district. Projects C9 and C11 would construct additions to existing facilities, and Project C10/D10 would demolish and replace an existing storage facility. Projects I8, I9, I10, and I11 would renovate existing buildings, and Project I12 would consolidate the functions of two other facilities. These actions would not be anticipated to have an effect on the visual environment surrounding the Security Hill Historic District.

There are no individually eligible properties located within LAK-East; therefore, no impacts are anticipated. The Museum and Chapel located at LAK-West fall within the indirect APE of multiple actions. LAK-West is highly developed, and the implementation of projects would not introduce new visual elements to the planning district. Therefore, the Proposed Action would not result in direct or indirect impacts to resources within the Main Base.

At the CTA, Projects C7/D7 and I6 would occur within approximately 500 feet of B-301, an individually eligible resource. Project C7/D7 would demolish a small building and reconfigure the fencing. This action would be unlikely to have any effect on B-301. Project I6 would renovate B-310, approximately 500 feet to the east of B-301, and would have no effect on the eligible resource. These actions would fall within the Q-Area Historic District, along with Projects C6, C8, and I3. Project C6 would construct an administrative building on the eastern side of the historic district near other existing administrative facilities, and Project C8 would construct a new munitions inspection facility within the middle of the MSA to support future mission growth. Project I3 would involve repairs to multiple gate access points for the MSA. These actions would occur within the historic district; however, these actions would not be anticipated to result in adverse impacts to the historic district, as they would continue to support the historic function of the area. The indirect APE of Projects C2, C9, I1, I7, and I9 overlaps with the historic district. Due to the undeveloped nature of the CTA and vegetative cover, it is not anticipated that viewshed impacts would occur as a result of project implementation.

Multiple project actions would impact buildings that would be 50-years of age or older by the time project implementation would occur. Projects C4/D4, C10/D10, and I4 at Kelly Field and Projects D5 and I4 at the CTA would demolish or renovate structures not yet evaluated for eligibility for listing on the NRHP. These structures would be evaluated for eligibility prior to project implementation.

JBSA maintains a PA with the Texas SHPO for the management of cultural resources on its properties. The PA outlines procedures and protocols within and between the parties for this purpose, including the Section 106 consultations under the NHPA. The current PA is in effect through January 2023. The need for SHPO consultation would be evaluated on a project level basis by the JBSA Cultural Resources team as individual ADP project plans are developed. The applicability of the existing PA and eligibility determinations would be considered, and where adverse effects cannot be avoided to eligible resources, JBSA would develop mitigation measures acceptable to the SHPO. With the SHPO's acceptance of mitigation measures, individual Section 106 Memoranda of Agreement would not be needed under the PA.

[Placeholder for info about any SHPO responses?]

Native American Sacred Sites and Properties of Traditional and Religious Cultural Importance

No TCPs or sacred sites have been identified at JBSA-LAK; therefore, no effect to these properties would be anticipated. In the event of an unanticipated discovery of an archaeological resource during demolition or construction activities, ground-disturbing activities would be suspended, and a cultural resources meeting would be called to determine if an Unanticipated Discovery Plan would be developed and implemented.

Under the Proposed Action, historic preservation laws and initiatives would continue to limit, control, or guide development in a manner that protects cultural resources in the public interest. JBSA-LAK would continue to maintain and implement its ICRMP and PA in coordination with the SHPO and other interested consulting parties, including its obligations under Section 106 of the NHPA. These measures would ensure that cultural resources would continue to be evaluated and considered in planning for future actions that could affect such resources on or around JBSA-LAK. Therefore, when considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions, potential cumulative effects on cultural resources would not be likely to occur.

3.11.3 Best Management Practices

The Air Force would implement the following BMPs to reduce potential effects on cultural resources under the Proposed Action:

- Renovate historic properties listed or eligible for listing on the NRHP to meet the Secretary of the Interior standards, as applicable.
- Adhere to the stipulated procedures and protocols established within the PA between JBSA and the Texas SHPO for all project-related construction, demolition, and renovation activities.

No mitigation measures for potential effects on cultural resources are recommended.

3.12 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

EO 12898, [*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*](#) (1994), as amended by EO 14008, [*Tackling the Climate Crisis at Home and Abroad*](#) (2021), directs federal agencies to address disproportionate adverse human health, environmental, and climate-related impacts on disadvantaged communities. As part of these directives, federal agencies are required to consider low-income and minority populations when implementing a federal action with the potential to affect the environment. Because children are more susceptible to environmental contaminants than adults, EO 13045, [*Protection of Children from Environmental Health Risks and Safety Risks*](#), provides similar direction to federal agencies to address these risks when implementing a federal action.

For the purposes of this analysis, minority populations are defined as Alaska Natives and American Indians, Asians, Blacks or African Americans, Native Hawaiians, and Pacific Islanders or persons of Hispanic origin (of any race); low-income populations include persons living below the poverty threshold as determined by the US Census Bureau (USCB); and youth populations are children under the age of 18 years.

The ROI for environmental justice and the protection of children is the San Antonio Central CCD. The communities in the CCD would be most likely to receive a disproportionate share of impacts associated with the Proposed Action (e.g., traffic congestion, reduced water and air quality).

3.12.1 Existing Conditions

3.12.1.1 Environmental Justice

The San Antonio Central CCD, in which JBSA-LAK is located, reports approximately 41.9 percent of the population as minority; however, this percentage is slightly lower than that of surrounding Bexar County at

45.8 percent (**Table 3-11**) and approximately 8.2 percent lower than that of the state of Texas. The San Antonio Central CCD reports 76.2 percent of the population as Hispanic or Latino, which is higher than that of Bexar County and the state of Texas, at 59.3 percent and 39.3 percent, respectively. Because the San Antonio Central CCD has a higher percentage of the population that is classified as Hispanic or Latino compared to the surrounding jurisdictions, the area is considered to have an environmental justice population.

Table 3-11
Total Population and Populations of Concern

Location	Total Population	Percent Minority	Percent Hispanic or Latino ^a	Percent Below Poverty	Percent Youth ^b	Percent Elderly
San Antonio Central CCD	672,470	41.9	76.2	23.8	25.4	13
Bexar County	2,009,324	45.8	59.3	15.6	25.5	12.1
State of Texas	29,145,505	50.1	39.3	14.2	25.8	12.5
United States	331,449,281	23.7	18.7	12.8	22.4	16

Source: USCB, 2021

Note:

- a. Hispanic and Latino denote a place of origin.
- b. Percent youth are all persons under the age of 18.
- c. Bolded text indicates an environmental justice population.

The San Antonio Central CCD reports approximately 23.8 percent of the population as living below the poverty level, which is higher than that of Bexar County, the state of Texas, and the US at 15.6 percent, 14.2 percent, and 12.8 percent, respectively. The San Antonio Central CCD is considered to have an environmental justice population due to its comparatively higher percentage of the population that is below the poverty level relative to the surrounding jurisdictions.

3.12.1.2 Protection of Children

The San Antonio Central CCD has a similar percentage of children under the age of 18, at 25.4 percent, compared to that of Bexar County and the state of Texas at 25.5 and 25.8 percent, respectively. The percentage of children in the San Antonio Central CCD is slightly higher than that of the US by approximately 3 percent. Overall, the percentage of children remained generally consistent between the ROI and the surrounding jurisdictions.

3.12.2 Environmental Consequences

The Air Force defines a significant effect on environmental justice communities and children within the ROI as any adverse effect under the Proposed Action (e.g., air and water pollution and exposure to contaminants or noise) that could be disproportionately felt by minority, low-income, or youth populations.

3.12.2.1 No Action Alternative

Under the No Action Alternative, the projects under the Proposed Action would not occur and the existing demographic conditions would remain unchanged. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.12.2.2 Proposed Action

Under the Proposed Action, the construction, demolition, and infrastructure projects would occur entirely within the boundaries of JBSA-LAK and would not result in disproportionate impacts on minorities, low-income, and youth populations. These actions would not impact the availability of housing, education, or community resources to environmental justice populations. The projects included as part of the Proposed

Action would accrue positive benefits to the military population, but those benefits would not translate to the minority or low-income populations adjacent to JBSA-LAK.

When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions, potential cumulative effects on environmental justice and the protection of children would not be likely to occur.

3.12.3 Best Management Practices and Mitigation Measures

No BMPs to reduce potential effects on environmental justice communities and children under the Proposed Action were identified by analysis. No mitigation measures for potential effects on environmental justice communities and children are recommended.

3.13 INFRASTRUCTURE, TRANSPORTATION, AND UTILITIES

Infrastructure consists of the systems and structures that enable a population in a specified area to function. Infrastructure is wholly man-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as developed. Infrastructure components include transportation and utility systems, solid waste management, and sanitary and storm sewers. The availability of infrastructure and its capacity to support more users, including future development of an area, are generally regarded as essential to continued economic growth.

Transportation is defined as the system of roadways, highways, and transit services that provide ingress/egress from or to a particular location, as well as access to regional goods and services. Utilities include electrical, potable water, sanitary sewage/wastewater, stormwater conveyance, and communications systems. Solid waste management primarily relates to landfill capacity for disposal of non-hazardous solid waste (e.g., construction waste) generated in an area or by a population. Stormwater infrastructure includes the man-made conveyance systems that function in tandem with natural drainages to collect and control the rate of surface runoff during and after a precipitation event. In urbanized areas, stormwater that is not discharged to a waterbody is conveyed to sanitary sewers (also considered utilities), systems that collect, move, and treat liquid waste prior to its discharge back into the environment.

The ROI for infrastructure, transportation, and utilities is JBSA-LAK, and the external infrastructure components and services relied upon to operate the Base.

3.13.1 Existing Conditions

3.13.1.1 Transportation

JBSA-LAK is located in the southwestern portion of the San Antonio Metropolitan Area in Bexar County, Texas. The nearest major highway interchange to JBSA-LAK is US Highway 90 and Interstate 410, northwest of the Installation. Interstate 410 acts as a beltway around San Antonio that connects major interstates, US highways, and state highway arteries.

The predominant mode of transportation within JBSA-LAK is private automobile. Most roads at JBSA-LAK are paved asphalt and experience regular high traffic volumes (Air Force, 2019b). The Installation also maintains a shuttle bus system. During graduation ceremonies and parades, the Installation experiences high volumes of congestion due to the influx of visitors and family members (Air Force, 2019c). Thursdays and Fridays are family days at JBSA-LAK, which results in higher traffic volumes. Major roadways at the Installation are degraded and failing. Multiple areas of the Installation have trouble with access due to flooding (Air Force, 2018b). Additional transportation planning goals for the Installation involve minimizing the vehicle traffic near the recruit training areas to avoid conflict points.

3.13.1.2 Electricity

Electricity to JBSA-LAK is provided by CPS Energy, the natural gas and electric company municipally owned by the City of San Antonio. The Valley Hi Substation is operated on the Installation and hosts three incoming feeder lines from the substation to direct power the main switching station. Existing capacity at the substation is 60 megawatts, and the current usage by the Installation averages around 40 megawatts. Sufficient electrical power is available at the Installation for current usage and future expansions (Air Force, 2018b).

3.13.1.3 Potable Water

There are seven active drinking water wells on JBSA-LAK. Six are in operation to service the Main Base and one active well services the CTA. The larger potable water system on JBSA-LAK includes more than 60 miles of water mains and four elevated storage tanks with a capacity to meet the existing needs. The well draws from the Edwards Aquifer are subject to its regulations, although the Base has reduced water consumption substantially in recent years (Air Force, 2018b).

3.13.1.4 Solid Waste Management

Non-hazardous solid waste generated at JBSA-LAK is collected by a private contractor for disposal off site at Covell Gardens landfill, which has adequate capacity to meet current and future needs.

3.13.1.5 Sanitary and Storm Sewer

The sewer system at JBSA-LAK is maintained by the Base. Wastewater collection and treatment for JBSA-LAK is provided by the San Antonio Water System (SAWS). The rated capacity of JBSA-LAK sewer mains is 9.79 million gallons per day, and the permitted daily average and daily maximum flows are 36.5 and 92 million gallons per day, respectively. Wastewater enters the SAWS along the northern and eastern boundaries of the Installation at Five Palms Street and discharges off site to the Leon Creek Wastewater Treatment Plant. This system comprises approximately 44 miles of sewer mains operated by gravity flow (Air Force, 2018b).

3.13.2 Environmental Consequences

The Air Force defines a significant effect on or from infrastructure, transportation, and utilities within the ROI as one or more of the following:

- measurable change or service reduction within the regional transportation network;
- prolonged or repeated interruption of public transportation services regionally;
- prolonged or repeated service disruptions to utility end users; and
- substantial increase in utility demand relative to existing and planned regional uses.

3.13.2.1 No Action Alternative

Under the No Action Alternative, the projects included in the Proposed Action would not occur and the existing infrastructure, transportation, and utilities conditions would remain unchanged. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.13.2.2 Proposed Action

Transportation

Under the Proposed Action, transportation systems at JBSA-LAK would be improved to support traffic flow, connectivity, pedestrian safety, and security to the Installation. Several road and bridge improvement projects would occur within JBSA-LAK.

At Kelly Field, Project C8 would construct a new bridge across Leon Creek with improved future flood considerations. At LAK-East, Project C8/D8 would construct the Luke Super Gate, addressing the traffic volume issues at existing access points. The project would improve the flow of vehicles into the Installation in a timely manner while remaining compliant with access control requirements. Project C11 would improve the pedestrian facilities by constructing a sidewalk and bridge to cross from the Parade Field to Truemper Street. Project I2 would close Biggs Avenue between Kelly Drive and Truemper Street, creating a safer pedestrian connection between facilities. LAK-West Project C9 would also improve troop connectivity to the Parade Field by constructing a safe crossing over the busy Military Drive. Project C10 at LAK-West would construct a perimeter road, improving vehicle travel around the extents of the district. Project D22 would remove a roadway segment and simplify an intersection within the district, improving safety and mobility. Project I1 would involve improvements to the Base shuttle transportation route. Within the CTA, Project I1 would improve a main transportation route within the district by rebuilding Medina Road and multiple bridges across the district, as well as Project I2, which would improve the perimeter road.

During construction, temporary, minor, adverse impacts to transportation infrastructure would be anticipated; however, local and regional roadways would be able to readily absorb construction-related traffic. Minor delays on or in the immediate vicinity of JBSA-LAK would be anticipated, but impacts on roadway capacity or condition would not be discernible. No permanent adverse impacts to transportation infrastructure would result from the Proposed Action and any increase in personnel, traffic, or equipment would be temporary and short term during the construction period. Long-term, beneficial impacts would be expected to occur for transportation systems at JBSA-LAK.

Electricity

Short-term, negligible, adverse impacts on the electrical distribution system could occur under the Proposed Action because the operation of newly constructed buildings may increase the demand on the system; however, energy-efficient construction to decrease energy consumption consistent with EO 13693, [*Planning for Federal Sustainability in the Next Decade*](#), and cessation of operations at outdated and inefficient buildings proposed for demolition would decrease the demand. Therefore, net changes in long-term demand would be anticipated to be minimal.

Potable Water

Short-term, negligible, adverse impacts on the potable water supply system would occur during construction and demolition when existing lines would be connected to new buildings or capped as appropriate. Negligible, long-term adverse impacts would occur because the operation of the new buildings would increase the demand on the potable water supply system; however, the cessation of operations at demolished buildings would decrease the demand. Changes in demand would be minimal, and the potable water supply system has the capacity required to meet new demands.

Solid Waste Management

Short-term, minor, adverse impacts on solid waste management may occur with construction and demolition projects under the Proposed Action. The USEPA guidance on estimating solid waste from construction and demolition projects indicates that approximately 4.39 pounds (lbs)/sf of debris would be generated for each square foot of construction activity, and approximately 158 lbs/sf would be generated from the demolition of existing facilities; this formula can be applied to the construction of both buildings and impervious surfaces. Using this formula, solid waste generated from all construction and demolition projects under the Proposed Action is anticipated at 6,800 tons and 885 tons, respectively. Contractors

would be required to comply with federal, state, and local regulations for the collection and disposal of solid waste generated under the Proposed Action, and all solid waste generated would be collected and transported off Base for disposal or recycling in accordance with AFMAN 32-7002, *Environmental Compliance and Pollution Prevention*. The proposed projects would take place over a period of 5 years; therefore, the annual volume of solid waste would be reduced relative to the scenario of all demolitions occurring at the same time.

Sanitary and Storm Sewer

Short-term, negligible, adverse impacts on the sanitary sewer and wastewater treatment system would occur during construction and demolition when existing lines would be connected to new buildings or capped as appropriate. Negligible, long-term adverse impacts would occur because the operation of the new buildings would increase the demand on the sanitary sewer and wastewater treatment system; however, the cessation of operations at demolished buildings would decrease the demand. Changes in demands would be minimal, and the sanitary sewer and wastewater treatment system has the capacity required to meet new demands. Project I9 at the CTA would provide redundant power to the lift stations that service the sanitary sewer in the district, providing a long-term benefit.

Planned local transportation improvements outside of the Proposed Action would have the potential to temporarily disrupt traffic entering and exiting the Installation; however, these projects have the purpose of improving the transportation environment and would result in overall improvements. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions, potential cumulative effects on infrastructure, transportation, or utilities would not be likely to occur.

3.13.2.1 Best Management Practices and Mitigation Measures

No BMPs to reduce potential effects on or from infrastructure, transportation, or utilities under the Proposed Action were identified by analysis. No mitigation measures for potential effects on infrastructure, transportation, or utilities are recommended.

3.14 HAZARDOUS MATERIALS AND WASTES

The definition of “hazardous materials and waste” depends on regulatory context. That is, the criteria used to define the terms are often specific to an activity or location (e.g., commerce [[49 CFR § 171.8](#)], energy [[49 CFR § 171.8](#)], and federal facilities [[40 CFR Part 262](#)]). Generally, hazardous materials and wastes are materials and substances determined to present risks to human health, safety, or the environment when they occur above certain concentrations or undergo a physical or chemical change. Exposure to such materials may also harm ecosystems, including plants, animals, soil, water, and other natural resources. Localized environmental conditions may affect the extent of contamination from, or exposure to, hazardous materials and wastes.

CERCLA, as amended by the *Superfund Amendments and Reauthorization Act* and *Toxic Substances Control Act* ([15 USC § 2601](#) et seq., as implemented by [40 CFR Part 761](#)), defines hazardous materials (HAZMAT) as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, and incapacitating reversible illness, or that might pose a substantial threat to human health or the environment. The Occupational Safety and Health Administration (OSHA) is responsible for the enforcement and implementation of federal laws and regulations pertaining to worker health and safety under [29 CFR Part 1910](#). OSHA also regulates HAZMAT in the workplace and ensures appropriate training.

RCRA, which was further amended by the *Hazardous and Solid Waste Amendments of 1984* ([House Resolution 2867](#)), defines hazardous wastes as any solid, liquid, contained gaseous, or semi-solid waste, or any combination of wastes, that pose a substantial present or potential hazard to human health or the environment. In general, both HAZMAT and hazardous wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, might present substantial danger to public health and welfare or the environment when released or otherwise improperly managed.

Air Force Policy Directive 32-70, *Environmental Considerations in Air Force Programs and Activities*, establishes the policy that the Air Force is committed to performing the following actions:

- Cleaning up environmental damage resulting from its past activities,
- Meeting all environmental standards applicable to its present operations,
- Planning its future activities to minimize environmental impacts,
- Responsibly managing the irreplaceable natural and cultural resources it holds in public trust, and
- Eliminating pollution from its activities wherever possible.

AFMAN 32-1067, *Water and Fuel Systems*, identifies compliance requirements for underground storage tanks (USTs) and above-ground storage tanks (ASTs), and associated piping, that store petroleum products and hazardous substances. Evaluation of HAZMAT and hazardous wastes focuses on USTs and ASTs as well as the storage, transport, and use of pesticides, fuels, oils, and lubricants. Evaluation might also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of HAZMAT and hazardous wastes can threaten the health and wellbeing of wildlife species, botanical habitats, soil systems, and water resources. In the event of HAZMAT or hazardous waste release, the extent of contamination will vary based on the type of soil, topography, weather conditions, and water resources.

AFMAN 32-7002 establishes procedures and standards that govern management of HAZMAT throughout the Air Force. It applies to all Air Force personnel who authorize, procure, issue, use, or dispose of HAZMAT, and to those who manage, monitor, or track any of those activities. Toxic substances might pose a risk to human health but are not regulated as contaminants under the hazardous waste statutes. Included in this category are asbestos-containing materials (ACMs), lead-based paint (LBP), radon, and PCBs. The presence of special hazards or controls over them might affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a Proposed Action.

Section 311 of the CWA, as amended by the *Oil Pollution Act* ([Public Law 101-380](#)), establishes requirements to prevent, prepare for, and respond to oil discharges at specific types of facilities, including military bases. The intent is to prevent oil from reaching navigable waters and adjoining shorelines, and to contain discharges of oil. To do so, facilities are required to develop and implement Spill Prevention, Control, and Countermeasure (SPCC) plans to establish procedures, methods, and equipment requirements for response and cleanup actions (Subparts A, B, and C).

Through the Environmental Restoration Program (ERP) initiated in 1980, a subcomponent of the Defense Installation Restoration Program that became law under Superfund amendments and Reauthorization Act, each DoD Installation is required to identify, investigate, and clean up hazardous waste disposal or release sites. Remedial activities for ERP sites follow the Hazardous and Solid Waste Amendments under the RCRA Corrective Action Program. The ERP provides a uniform, thorough methodology to evaluate past disposal sites, control the migration of contaminants, minimize potential hazards to human health and the environment, and clean up contamination through a series of stages until it is decided that no further remedial action is warranted.

Also contained within the ERP is the Military Munitions Response Program (MMRP). This program was established by the DoD in 2001 to address munitions-related concerns from releases of unexploded ordnance (UXO), discarded military munitions, and munitions constituents. The program addresses non-operational range lands with suspected or known hazards which occurred before 2002 but are not already included within ERP site cleanup activity.

The ROI for potential HAZMAT and hazardous wastes effects is JBSA-LAK.

3.14.1 Existing Conditions

3.14.1.1 Hazardous Materials and Waste

RCRA establishes the mandatory procedures and requirements for federal facilities that use, accumulate, transport, treat, store, or dispose of HAZMAT. Under RCRA, USEPA can grant authority to the state to establish and enforce its own hazardous waste management program, provided the state's requirements are no less stringent than the USEPA's (USEPA, 2021). In Texas, the TCEQ implements the RCRA program. Air Force policy requires installations to utilize CERCLA authority to meet state requirements for facilities that are not on the National Priorities List. The Texas Risk Reduction Program (TRRP) is a risk-based corrective action investigation and cleanup program established by TCEQ. JBSA incorporates the TRRP process with CERCLA to adequately protect human health and the environment during investigation and remediation activities.

JBSA-LAK is classified as a large-quantity generator of hazardous waste (RCRA Site IDs TX4571524129 and TX4570099933). Aircraft operations, maintenance, and related industrial activities are the primary source of HAZMAT generated at the Base. Examples of hazardous substances in use at JBSA-LAK include flammable and combustible liquids, acids, corrosives, caustics, anti-icing chemicals, compressed gases, solvents, paints, paint thinners, and pesticides. JBSA-LAK maintains a *Hazardous Waste Management Plan* (JBSA, 2016) for operations that involve handling, storage, transportation, and disposal of hazardous waste. The *Hazardous Waste Management Plan* also serves to document the processes and procedures for HAZMAT management at JBSA-LAK, as required to remain in compliance with RCRA (JBSA, 2019). Kelly Field was issued a permit to operate a hazardous waste post-closure care and corrective action facility under the RCRA Hazardous Waste Permit No 50310, application dated 12 October 2018 (TCEQ, 2019).

3.14.1.2 Asbestos, Lead-Based Paint, and Polychlorinated Biphenyls

Asbestos

The Air Force manages asbestos in accordance with AFI 32-1001, *Civil Engineer Operations*, and applicable USEPA regulations (USEPA, 2022). A significant number of buildings on JBSA-LAK date from the 1940s through the 1980s, during which time ACM were commonly used in construction. Nonfriable asbestos is not considered HAZMAT until it is removed or disturbed. The *JBSA Asbestos Management Plan* identifies the need for asbestos management, abatement, and removal, where applicable, when funding is available, or where damage or exposure warrants the need. The *Asbestos Management Plan* focuses on in-place management of asbestos, meaning, where applicable, ACM can be left in place until there is a need for removal (i.e., due to conditions, renovation, demolition) (JBSA, 2020). Conversely, buildings constructed prior to 1970 are likely to contain friable asbestos in building materials. Disruption of these materials causes asbestos to become airborne, producing a risk of inhalation.

Lead-Based Paint

OSHA and USEPA have determined that human exposure to lead is an adverse health risk. Sources of exposure to lead are dust, soils, and LBP. In 1973, the Consumer Product Safety Commission established a maximum lead content in paint of 0.5 percent by weight in a dry film of newly applied paint. In 1978, under the *Consumer Product Safety Act* ([15 USC §§ 2051–2089](#)), the Commission lowered the allowable lead level in paint to 0.06 percent (600 parts per million). The Act also restricted the use of LBP in non-industrial facilities. The DoD implemented a ban on LBP use in 1978; therefore, it is possible that facilities constructed prior to or during 1978 may contain LBP.

Polychlorinated Biphenyls

PCBs are a group of chemical mixtures used as insulators in electrical equipment, such as transformers and fluorescent light ballasts. Chemicals classified as PCBs were widely manufactured and used in the US until being banned in 1979. The Air Force manages PCBs in accordance with AFMAN 32-7002 as well as under USEPA regulations. The Air Force defines PCBs as any PCB-containing equipment or material, as

defined in [40 CFR Part 761](#), with a concentration more than 50 parts per million. Buildings constructed prior to 1979, with a dependence on previous uses, potentially contain PCBs in various machinery and wiring.

3.14.1.3 Storage Tanks

An inventory of ASTs and USTs is maintained at JBSA-LAK through the *Hazardous Waste Management Plan* (JBSA, 2016). Storage tanks contain jet fuel, diesel fuel, used cooking oil, used oil, and unleaded gasoline. There are 205 ASTs and 5 USTs throughout the Installation with capacities ranging from 60 gallons to 1.05 million gallons (JBSA, 2016).

3.14.1.4 Radon

Bexar County is located within Radon Zone 3. This zone has predicted average indoor radon screening levels of less than 2 picocuries per liter (USEPA, 2019). The JBSA IDP lists electromagnetic and radiation sources as a minor constraint to future development; due to the low probability of radon levels exceeding the USEPA's guidance level of 4 picocuries per liter (HDR, 2017), radon is not further evaluated herein.

3.14.1.5 Per- and Polyfluoroalkyl Substances and Aqueous Film Forming Foam

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that are employed in a wide variety of residential, commercial, and industrial uses and can be found in everyday items such as nonstick cookware, stain-resistant fabric and carpet, certain types of food packaging, and fire-fighting foam (AFCEC, n.d.). In 2016, USEPA announced advisory levels for two types of PFAS in drinking water: perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA).

The USEPA has not yet enacted specific regulatory standards for PFAS. However, continued research shows that there are potential human health risks associated with these substances, and regulatory standards are being considered (AFCEC, n.d.). Aqueous film forming foam (AFFF), which the Air Force began to use in the 1970s to extinguish petroleum-based fires, contains both PFOS and PFOA. In August of 2016, the Air Force began phasing out PFOS-based AFFF and other AFFF products and introduced newer, more environmentally friendly formulas. In August of 2017, the Air Force finished the phase out and completed the new foam delivery (AFCEC, n.d.).

All Air Force investigation and mitigation work relating to PFOS and PFOA is done in accordance with CERCLA, applicable state laws, and the USEPA's lifetime drinking water health advisory of 70 parts per trillion (AFCEC, n.d.).

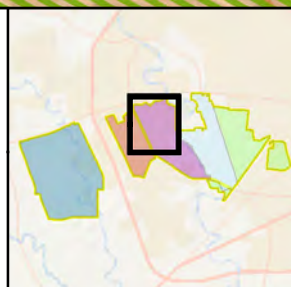
A site investigation of 12 potential release areas at JBSA-LAK was conducted from 2016 to 2017 (**Figures 3-18–3-21** and **Table 3-12**). Ten of these sites required a remedial investigation, and the remaining two were designated "No Further Remedial Action Planned" (NFRAP) (Remedial Advisory Board, 2020).



FIGURE 3-19
HAZMAT SITES
LAK-EAST

N
Imagery: ESRI 2021
Projection: WGS 1984
Zone 14N
0 0.1 0.2
Miles

- | | | | |
|---|---------------------------------|---|--------------------|
| ○ | Above Ground Storage Tank (AST) | ▨ | ERP Sites - Active |
| ● | Construction | ▨ | ERP Sites - NFRAP |
| ▲ | Demolition | ▨ | JBSA-LAK |
| ■ | Infrastructure | ▨ | MMRP Sites |
| ▨ | AFFF Areas | | |



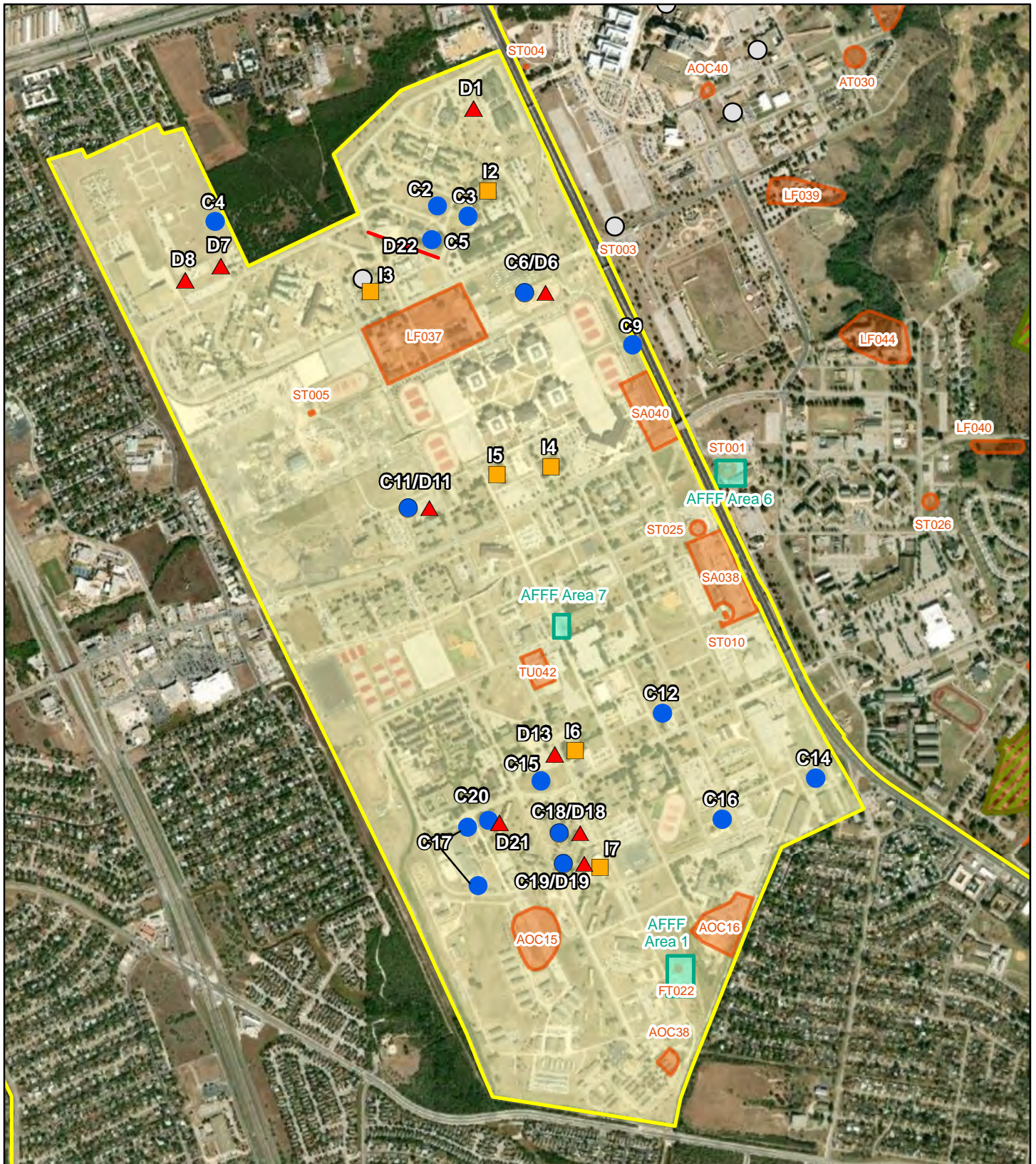
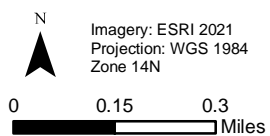


FIGURE 3-20
HAZMAT SITES
LAK-WEST



- | | | | |
|---|---------------------------------|---|-------------------|
| ○ | Above Ground Storage Tank (AST) | ■ | AFFF Areas |
| ● | Construction | ■ | ERP Sites - NFRAP |
| ▲ | Demolition | ■ | JBSA-LAK |
| ■ | Infrastructure | ■ | MMRP Sites |
| — | Linear Demolition | | |

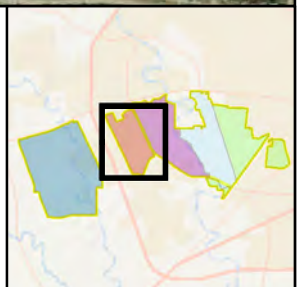
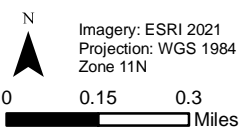




FIGURE 3-21
HAZMAT SITES
CTA



- | | | | |
|---|---------------------------------|---|--------------------|
| ○ | Above Ground Storage Tank (AST) | ■ | AFFF Areas |
| ● | Construction | ■ | ERP Sites - Active |
| ▲ | Demolition | ■ | ERP Sites - NFRAP |
| ■ | Infrastructure | ■ | JBSA-LAK |
| — | Linear Infrastructure | ■ | MMRP Sites |

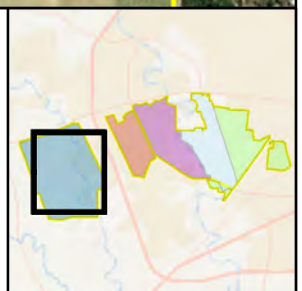


Table 3-12
AFFF Release Areas

AFFF Area	District	Status	Description
1	LAK-West	Recommended for RI	Fire Training Area 22 (FTA22) – groundwater levels exceeded PALs, soil levels below PALs.
2	Kelly Field	Recommended for RI	Building 1222 (B1222) – groundwater levels exceeded PALs, soil levels below PALs.
3	Kelly Field	Recommended for RI	Hangar 826 (H826) – groundwater and soil levels below PALs.
4	Kelly Field	NFRAP	Hangar 829 (H829) – groundwater and soil levels below PALs.
5	Kelly Field	NFRAP	Hangar 946 (H946) – groundwater and soil levels below PALs.
6	LAK-East	Recommended for RI	Old Fire Station 1 (OF1) – groundwater and soil levels below PALs.
7	LAK-West	Recommended for RI	Old Fire Station 2 (OF2) – groundwater and soil levels above PALs.
8	Kelly Field	Recommended for RI	Fire Station 2 (FS2) – groundwater and soil levels above PALs.
9	CTA	Recommended for RI	Fire Station 3 (FS3) – groundwater and soil levels above PALs.
10	CTA	Recommended for RI	Plane Crash Area 1 (PCA1) – groundwater levels exceeded PALs; no soil sampled.
11	Kelly Field	Recommended for RI	Plane Crash Area 2 (PCA2) – groundwater levels exceeded PALs, soil levels below PALs.
12	Kelly Field	Recommended for RI	Tar Truck Fire Area – groundwater levels exceeded PALs, soil levels below PALs.

AFFF = aqueous film forming foam; NFRAP = no further remedial action planned; PAL = project action limit; RI = remedial investigation; Airfield; SI = site investigation

3.14.1.6 Environmental Restoration Program

The ERP at JBSA-LAK was established in 1985, leading to the identification of 70 ERP sites throughout the Installation. As of 2021, 54 of those sites have been closed and designated NFRAP, and 16 are under long-term management or active remediation (**Figures 3-18 through 3-21, Table 3-13**) (Remedial Advisory Board, 2021). There were also 27 areas of concern identified, but they have all been designated NFRAP (Lackland AFB, 2011).

Table 3-13
Active ERP Sites

Site	District	Status	Description
LF011 (D-1)	Kelly Field	Long-Term Management	An approximately 11-acre former landfill that was a disposal area for construction debris and fill. It is currently limited to non-residential use and is closed under TCEQ RRS No. 2.
LF012-East (D-2)	Kelly Field	Long-Term Management	An approximately 8-acre former landfill for construction debris. It has an updated cover system and was closed under TCEQ RRS No. 2 in 2011. It does not require further remedial response.
LF013 (D-3)	Kelly Field	Long-Term Management	An approximately 15-acre former waste disposal area and staging area (general refuse, hard fill, solvents, pesticides, and oil) that has been remediated. It is currently limited to non-residential use, was closed under TCEQ RRS No. 2 in 2011, and is considered not to pose any threats to human health for non-residential use.

Site	District	Status	Description
LF001 (D-9)	Kelly Field	Remedial Action	An approximately 7-acre former landfill and waste oil burn pit that contains several trenches. A geosynthetic drainage layer was installed in 2009 and the site is still under land use controls. A record of decision (ROD) was signed in 2013 and remedial actions are ongoing.
LF012 (D-2)	Kelly Field	Remedial Action	An approximately 18-acre former waste disposal area (general refuse, hard fill, solvents, drum waste). Remedial actions have included the construction of slurry barrier walls and a continuous groundwater recovery trench. A ROD was signed in 2013 and remedial actions are ongoing.
LF014 (D-4)	Kelly Field	Remedial Action	An approximately 26-acre area consisting of a waste boundary area, cut-and-fill disposal trenches used for waste disposal, and soil and rubble fill disposal areas. Remedial actions have included excavations, topsoil removal, a soil cover system, slurry barriers, and a groundwater recovery trench. A ROD was signed in 2009 and remedial actions are ongoing.
LF015 (D-5)	Kelly Field	Remedial Action	An approximately 18-acre former waste disposal site that also consisted of a former oil evaporation pond and oil-burning pit. Remedial actions have included topsoil removal, a soil cover system, slurry barrier, groundwater recovery trench, and installation of a high-density polyethylene barrier to support the capture of impacted groundwater. A ROD was signed in 2013 and remedial actions are ongoing.
LF016 (D-6)	Kelly Field	Remedial Action	An approximately 4-acre former waste disposal site. Remedial actions have included topsoil removal and a soil cover system. A ROD was signed in 2013.
SS043 (CS-3)	Kelly Field	Remedial Action	An approximately 16-acre former construction debris disposal area. Remedial actions have included a soil cover system, a liner, and erosion
LF018 (D-8)	LAK-East	Long-Term Management	An approximately 2-acre area of inactive fill that was a former disposal area for construction and runway debris. It has been filled and regraded for a parking lot and was closed under TCEQ RRS No. 2 in 2000.
LF036	LAK-East	Long-Term Management	Also known as Municipal Landfill No. 12 or LF12, it is an approximately 8.2-acre former quarry and solid waste landfill for construction and demolition debris. Remedial actions have included the construction of a clay cap and addition of topsoil.
LF028	LAK-East	Long-Term Management	Formerly Landfill No. 6., an approximately 15-acre former waste disposal area that was covered by lead-contaminated soil in 2002. To remediate, this area was capped and has been undergoing monitoring since 2005. It has been under TRRP Remedy Standard B-Commercial/Industrial Closure since 2007. Vehicle access has been restricted due to land use control implementation, and the area has been fenced. Chemicals of concern have not consistently exceeded TRRP protective control levels for Class 3 groundwater since 2015 and are no longer continuously monitored.

Site	District	Status	Description
LF029	LAK-East	Long-Term Management	Formerly Landfill No. 5, an approximately 14-acre former industrial and construction waste landfill. Remedial actions have included the construction of a clay cap, topsoil, and revegetation, as well as long-term monitoring. LF021 has attained TCEQ RRS No. 3 non-residential closure status under the deed recorded in 2008. Chemicals of concern have not consistently exceeded TRRP protective control levels for Class 3 groundwater since 2016 and are no longer continuously monitored. It is currently fenced due to land use controls.
LF017 (D-7)	LAK-East	Remedial Action	An approximately 22-acre former disposal area consisting of trenches used for disposal. Remedial actions have included a soil cover system and topsoil removal. A ROD was signed in 2013.
WP029 (SA-1)	LAK-East	Remedial Action	An approximately 1-acre site that was used to process sludge from an industrial wastewater treatment plant that contained heavy metals. Remedial actions have included an updated soil cover system. A ROD was signed in 2013.
LF021	LAK-CTA	Long-Term Management	Formerly Landfill No. 4, an approximately 16-acre former waste disposal area (general refuse, hard fill, solvents, pesticides, and construction debris) that does not require further remedial response. LF021 has attained TCEQ RRS No. 3 non-residential closure status under the deed recorded in 2002.

CTA = Chapman Training Annex; ROD = Record of Decision; RRS = Risk Reduction Standard; TCEQ = Texas Commission on Environmental Quality; TRRP = Texas Risk Reduction Program

3.14.1.7 Military Munitions Restoration Program

MMRP sites are suspected or known to contain UXO or munitions constituents, which are considered HAZMAT. The goal of the MMRP is to make munitions response areas safe for reuse in accordance with anticipated future land use and to protect human health and the environment. Twenty MMRP sites have

been identified at JBSA-LAK; most of these have been designated “No Further Action” (NFA) (Table 3-14). The majority of these sites are located within either LAK-East or Kelly Field, with two at the CTA (Figures 3-18 through 3-20).

Table 3-14
Military Munitions Restoration Program Sites

Site	District	Status	Description
TS270	Kelly Field	NFA	Also known as the OR002 Skeet Range, this is a munitions response area (MRA) consisting of TS270 and TS270a. As of 2015, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP. No additional remedial action is necessary and ongoing monitoring is not required.
AL269	Kelly Field	NFA	Also known as the OR003 Skeet Range, this is an MRA consisting of two munitions response ties (MRSs), AL269 and AL279a. As of 2015, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP. No additional remedial action is necessary and ongoing monitoring is not required.

Site	District	Status	Description
FR274	Kelly Field	NFA	Also known as the OR006 1960 Firing Range. As of 2013, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP. No additional remedial action is necessary and ongoing monitoring is not required.
FR294	Kelly Field	NFA	Also known as the OR004 1940 Rifle Range. As of 2013, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP. No additional remedial action is necessary and ongoing monitoring is not required.
TS273	Kelly Field	NFA	Also known as the 1940s Skeet Range. As of 2015, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP. No additional remedial action is necessary and ongoing monitoring is not required.
TS271	Kelly Field	NFA	Also known as the OR003 Skeet Range, this is an MRA consisting of two MRSS, TS271 and TS271a. As of 2015, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP.
TG273	Kelly Field	NFA	Also known as the OR005 Aircraft Gun Testing Range. As of 2015, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP.
AL240	LAK-East	NFA	The Kelly Bombing Range North is the northern portion of the former Kelly Field, predecessor to Kelly AFB. It was initially an MRA that was divided into three separate MRSS. It contains AL140a (approximately 495-acres) and AL240b (approximately 33 acres), was not eligible for the Military Munitions Restoration Program. No contaminant release was discovered at MRS AL240, so it is not subject to TRRP and will only follow the CERCLA process. MRS AL240 was approved for NFA by TCEQ in 2015. The DoD Explosives Safety Board granted approval of NFA for AL240 in 2019.
AL722	LAK-East	NFA	The Kelly Bombing Range South is the southern portion of the former Kelly Field, predecessor to Kelly AFB. It was initially an MRA that was divided into two MRSS, AL722 and AL722a. As of 2015, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP.
SR272	LAK-East	NFA	Also known as the OR004 1940 Pistol Range. It has been designated as NFA.
TS273	LAK-East	NFA	Also known as the OR005 Aircraft Gun Testing Range, this is an MRA consisting of two MRSS, TS273 and TS273a. As of 2014, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP.
SR724	LAK-East	NFA	Also known as the 100 Point Small Bore Rifle Range. As of 2015, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP.
FR720	LAK-East	NFA	Also known as the OR001 1917 Firing Range, this is an MRA consisting of FR720 and FR720a. As of 2015, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP.

Site	District	Status	Description
AL241	LAK-East	NFA	Also known as Uptmore & Associates. It has been designated as NFA.
OB665	CTA	NFA	Also known as OTO12 OB/OD. An open burn/open detonation site for EOD. As of 2015, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP.
OB668	CTA	NFA	Also known as OTO11 OB/OD. An open burn/open detonation site for EOD. As of 2015, it no longer poses any unacceptable risk to human health or the environment as determined by the TRRP.

CTA = Chapman Training Annex; EOD = explosive ordnance disposal; MRA = Munitions Response Area; MRS Munitions Response Site; NFA = No Further Action; OB/OD = Open Burn/Open Detonation; TRRP = Texas Risk Reduction Program

3.14.2 Environmental Consequences

3.14.2.1 Evaluation Criteria

Impacts on HAZMAT management would be considered adverse if the federal action resulted in noncompliance with applicable federal and state regulations or increased the amounts generated or procured beyond the current JBSA-LAK waste management procedures and capacities. Impacts on the ERP would be considered adverse if the federal action disturbed (or created) contaminated sites resulting in negative effects on human health or the environment.

3.14.2.2 No Action Alternative

Under the No Action Alternative, the projects under the Proposed Action would not occur, and JBSA-LAK would continue to operate as a large-quantity generator of hazardous waste under RCRA. HAZMAT management at the Base would continue in accordance with relevant plans and applicable HAZMAT laws and regulations. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.14.2.3 Proposed Action

Hazardous Materials and Wastes

Under the Proposed Action, the limited use of certain HAZMAT would be required during the construction, demolition, and repair phases of the Proposed Action. Associated HAZMAT might include paints, welding gases, solvents, preservatives, sealants, and pesticides. Additionally, hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in construction and demolition vehicles. Construction contractors would be responsible for monitoring exposure to HAZMAT (JBSA, 2016).

Construction could unearth contaminants in environmental media not yet known or identified for management action. Even without a major release or discovery event, multiple minor releases of HAZMAT under the Proposed Action could potentially affect the environment or persons in the vicinity.

Kelly Field Projects C1, C7, C9, C10, D10, C11, and all infrastructure projects at Kelly Field would be located within the boundaries of RCRA Hazardous Waste Permit #50310. The Installation would coordinate proposed activities with AFCEC for guidance, and the soils and groundwater generated from the proposed projects would be handled as waste.

If encountered, HAZMAT used or generated during construction or demolition would be handled, stored, and disposed of in accordance with federal, state, and local laws and regulations. All applicable permits for handling and disposal of HAZMAT would be obtained prior to starting construction or demolition activities. Construction and demolition work under the Proposed Action would be subject to the procedural

requirements of the *Hazardous Waste Management Plan*, SPCC Plan, and other applicable management plans to prevent and minimize risks associated with contaminant release or transport in the environment. During construction or demolition, if HAZMAT is discovered, work in that location would stop until the potential contamination has been properly evaluated and addressed.

Asbestos, Lead-Based Paint, and Polychlorinated Biphenyls

Additional risk under the Proposed Action would be associated with improper handling of construction and building materials. Improper handling of these materials has the potential to adversely affect the state of HAZMAT at JBSA-LAK. Concerns of ACMs, LBPs, and PCBs are also associated with the age of a building.

Facilities proposed for demolition or improvement/maintenance under the Proposed Action have the potential to contain these materials (**Table 3-15**). The Asbestos Planning Office (APO) would need to be informed during the project planning phase in order to review the status of the buildings in the asbestos database. If there is no asbestos survey, then the APO or a licensed asbestos consulting contractor must conduct one prior to construction or demolition (JBSA, 2020).

Any proposed project that would involve disturbance of construction materials would require a HAZMAT survey, to include ACM, regardless of original construction date. A copy of laboratory results would be sent to the location-specific JBSA Environmental office for further review prior to project execution. JBSA would coordinate all contract sampling and analysis and any planned abatement activities through the 802d Civil Engineer Squadron/Civil, Environmental and Infrastructure Engineering Environmental office.

With proper handling and development procedures, no significant effects on these HAZMAT and waste would be expected to occur under the Proposed Action. Removal of ACMs, LBPs, and PCBs during implementation of the Proposed Action would result in the beneficial impact of creating safer indoor spaces by avoiding future exposure. The JBSA *Hazardous Waste Management Plan* and *Asbestos Management Plan* would be followed to mitigate exposure during implementation of the Proposed Action.

Table 3-15
Buildings Included in the Proposed Action with Potential To Contain HAZMAT

Project #	District	Building #	Year Built	ACM ^a	LBP ^b	PCBs ^c
C4/D4	Kelly Field	1161	1974	No	Yes	Yes
C7/I5	Kelly Field	909	1942	Yes	Yes	Yes
I8	Kelly Field	898	1990	No	No	No
C11	Kelly Field	874	1981	No	No	No
I2	Kelly Field	900	1991	No	No	No
I3	Kelly Field	910	1942	Yes	Yes	Yes
I4	Kelly Field	908	1976	No	Yes	Yes
C9	Kelly Field	896	2006	No	No	No
I6	Kelly Field	820	1989	No	No	No
I9	Kelly Field	894	1967	Yes	Yes	Yes
I10	Kelly Field	876	1995	No	No	No
I11	Kelly Field	829	1989	No	No	No
I12	Kelly Field	817	1993	No	No	No
C2, C6/D6	LAK-East	4550	1957	Yes	Yes	Yes
C5	LAK-East	4430	1984	Yes	Yes	Yes
C7	LAK-East	3662	1971	No	Yes	Yes
C14	LAK-East	1196	1994	No	No	No
D1	LAK-East	4895	1980	Yes	Yes	Yes
I1	LAK-East	3425	2002	No	No	No
I3	LAK-East	2418	1942	Yes	Yes	Yes
I5	LAK-East	1508	1955	Yes	Yes	Yes
C5	LAK-West	10330	1968	Yes	Yes	Yes
C16	LAK-West	5486	2012	No	No	No
D7	LAK-West	10701	1986	No	No	No
D21	LAK-West	7450	1951	Yes	Yes	Yes

Project #	District	Building #	Year Built	ACM ^a	LBP ^b	PCBs ^c
C3/I2	LAK-West	10215	1994	No	No	No
I3	LAK-West	10416	1972	No	Yes	Yes
I4	LAK-West	6420	1995	No	No	No
I5	LAK-West	6629	1942	Yes	Yes	Yes
I6	LAK-West	7249	1968	Yes	Yes	Yes
I7	LAK-West	7360	1951	Yes	Yes	Yes
C4/D4	CTA	146	1966	Yes	Yes	Yes
C9	CTA	950	1998	No	No	No
I4	CTA	150	1971	No	Yes	Yes
I5	CTA	147	1966	Yes	Yes	Yes
I6	CTA	310	2003	No	No	No
C7/D7	CTA	300	1997	No	No	No
I7	CTA	242	1994	No	No	No

a Buildings or structures included in **Table 3-15** and elsewhere in this EA likely contain ACM. Prior to any demolition, modernization, or renovation, all buildings or structures would have conducted a recent ACM survey report, regardless of construction date, in accordance with Title 25 of the *Texas Administrative Code*, Chapter 296, Rule 191, "Asbestos Management in a Public Building, Commercial Building, or Facility."

B Buildings or structures constructed before 1978 may contain LBP. Exposure to LBP is harmful to human health, particularly children.

C Buildings constructed prior to 1979 may contain PCBs in various machinery and wiring. Exposure to PCB concentrations exceeding 50 parts per million is harmful to human health.

ACM = asbestos-containing material; LBP = lead-based paint; PCB = polychlorinated biphenyls

Storage Tanks

Several projects under the Proposed Action would be implemented in the vicinity of existing on-Base ASTs (see **Figures 3-18** and **3-19**). **Table 3-16** lists storage tanks located within approximately 50 meters of a proposed project. Although some projects would be located within proximity of an existing AST, work under the Proposed Action would not be expected to result in significant impacts. Base contractors would be responsible for avoiding ASTs during construction.

Table 3-16
Above-Ground Storage Tanks Associated with the Proposed Action

Project	District	Tank #	Operational Status
I6	Kelly Field	820-1	Active
I6	Kelly Field	820-2	Active
I6	Kelly Field	820-3	Active
I9, I10	Kelly Field	894-1	Inactive
I9, I10	Kelly Field	894-10	Active
I9, I10	Kelly Field	894-2	Inactive
I9	Kelly Field	894-4	Active
I9	Kelly Field	894-6	Active
I9	Kelly Field	894-7	Active
I9	Kelly Field	894-8	Active
I9	Kelly Field	894-9	Active
I3	LAK-East	10416-1	Active
C4/D4	LAK-East	1160-1	Active

When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at JBSA-LAK, no significant cumulative effects to storage tanks would be anticipated under the Proposed Action

Per- and Polyfluoroalkyl Substances and Aqueous Film Forming Foam

PFAS may be present in soil and/or groundwater at AFFF Release Areas 3 (H826) and 4 (H829) within Kelly Field due to past fire-fighting training activities. Projects I6 and I11 would be located on these sites,

respectively (**Figure 3-20**). Under the 2017 site investigation, these sites were recommended for remedial investigation. However, PFAS levels were significantly below project action limits in both groundwater and subsurface soil at these sites (Oneida Total Integrated Enterprises, 2016). Ground disturbance activities associated with the projects would not be anticipated to impact the release areas, as these activities would be at or near surface level. Ground disturbance in the area would be managed in accordance with applicable JBSA-LAK and Air Force guidance and potential impacts to water quality would be monitored under the SWP3.

Kelly Field Projects D2 and C3 are adjacent to a site with remedial investigation planned during fiscal year 2022. The Air Force does not restrict construction activities at this site, but soil and groundwater must be sampled and disposed of according to the JBSA environmental specifications (01 57 20), the JBSA Soil Management Plan, and Air Force Guidance Memorandum 2019-32-01 regarding AFFF waste management.

Environmental Restoration Program Sites

No significant effects to ERP sites would be anticipated to occur under the Proposed Action. Project D1 on LAK-East (**Figure 3-19**), which would demolish six existing structures, is located within the boundaries of Site ST-024. This was a removed UST that has been administratively closed since 1995 (URS Radian, 2000). Ground disturbance and repair activities associated with the projects would not be anticipated to impact the release areas, as these activities would be at or near surface level. Ground disturbance in the area would be managed in accordance with applicable JBSA-LAK and Air Force guidance and potential impacts to water quality would be monitored under the SWP3. The applicable requirements and management plans would be in place for the proposed demolition project and no contaminants are at concentrations that would pose a risk to construction workers. The potential effects to ERP sites would be minor and short term.

Military Munitions Response Program Sites

Several projects would be located within closed MMRP sites, as outlined in **Table 3-17** (see **Figures 3-18** and **3-19**). Due to their locations within the boundaries of the sites, there is potential for the discovery of munitions and explosives of concern, munitions debris, and range-related debris during ground-disturbing activities associated with these projects. There are land use controls for associated activities that would be located within MMRP sites that have been designated NFA. Certified clearance for UXO from the Restoration Program Manager is required prior to digging, excavation, or earth-moving activities (JBSA, 2020).

Table 3-17
MMRP Sites Associated with the Proposed Action

MMRP Site	Associated Projects	District	Operational Status	Description
AL269	C9, C11, I6, I8, I9, I10, I11, I12,	Kelly Field	Closed	433 AW Practice Bombing Target
AL240	D1, C2, C3, D4, C5, C6/D6, C7, C8/D8, C9, I1	LAK-East	Closed	Former Kelly Bombing Range North
AL722	C9, C10, C11, C12, C13, I2, I3, I4, I5	LAK-East	Closed	Former Kelly Bombing Range South

AW = Air Wing

Should potential munitions and explosives of concern, munitions debris, or debris be encountered during any activities, all work activities would immediately stop, the discovery would be reported to JBSA-LAK Range Operations/Control, and appropriate safety measures would be implemented. Commencement of activities in the area would not resume until the issue was resolved. Significant impacts to MMRP sites would not be anticipated under the Proposed Action.

All activities under the Proposed Action involving the use, transport, treatment, storage, and disposal of HAZMAT and hazardous wastes would continue to be regulated under federal, state, and local laws and regulations. Therefore, when considered in conjunction with other past, present, and reasonably foreseeable future environmental trends and planned actions, potential cumulative effects from HAZMAT and hazardous wastes would not be likely to occur.

3.14.3 Best Management Practices and Mitigation Measures

The Air Force would implement the following BMPs for HAZMAT and hazardous wastes:

- Compliance with existing JBSA environmental specifications for construction and contractor activities.
- Adhere to the JBSA HWMP to minimize impacts from the handling and disposal of hazardous substances and ensure compliance with state and federal HAZMAT regulations.
- Properly handle, remove, and dispose of ACMs in accordance with Air Force, local, state, and federal regulations.
- Properly handle, remove, and dispose of LBPs in accordance with Air Force, local, state, and federal regulations.
- Properly handle, remove, and dispose of PCBs in accordance with Air Force, local, state, and federal regulations.
- Report spills of any regulated substances to the EAA within 72 hours of the event.
- Properly handle and remove all hazardous and toxic substances used during construction, demolition, and renovation activities.

Failure to implement BMPs under the Proposed Action likely would result in adverse short- and long-term impacts to personnel due to exposure of materials that are known to be hazardous to humans. No mitigation measures for potential effects from HAZMAT and hazardous waste are recommended.

3.15 SAFETY

3.15.1 Definition of the Resource

This section discusses safety concerns associated with ground and flight activities. Ground safety considers issues associated with ground operations and maintenance activities that support unit operations. Ground safety also considers the safety of personnel and facilities from flight operations in the vicinity of the airfield and in the airspace. CZs and APZs around the airfield restrict the public's exposure to areas with a higher accident potential. Although ground and flight safety are addressed separately, in the immediate vicinity of the runway, risks associated with safety-of-flight issues are interrelated with ground safety concerns.

Explosives safety relates to the management and safe use of ordnance and munitions. Flight safety considers aircraft flight risks such as midair collision, bird/wildlife-aircraft strike hazards, and in-flight emergency. The Air Force has safety procedures and aircraft-specific emergency procedures produced by the original equipment manufacturer of the aircraft. Basic Airmanship procedures also exist for handling any deviations to air traffic control procedures due to an in-flight emergency; these procedures are defined in Volume 3 of AFI 11-202, *General Flight Rules*, and established aircraft flight manuals. The Flight Crew Information File is a safety resource for aircrew day-to-day operations and contains air and ground operation rules and procedures.

The ROI for safety is JBSA-LAK, and areas immediately adjacent to the Installation where ground and explosives safety concerns exist, as well as the airfield and airspace.

3.15.2 Existing Conditions

Under [40 CFR § 989.27](#), the EIAP for a proposed action includes assessing direct and indirect impacts of the Proposed Action and Alternatives on the safety and health of Air Force employees and others at a worksite. Air Force Policy Directive 91-2, *Safety Programs* (2019), is implemented by AFI 91-202, *The US Air Force Mishap Prevention Program* (2022), which manages risks to protect Air Force personnel from occupational deaths, injuries, or illnesses and minimize loss of Air Force resources. These standards apply to all Air Force activities and adherence to the Air Force's Mishap Prevention Program ensures Air Force workplaces meet federal safety and health requirements.

Day-to-day operation and maintenance activities at JBSA-LAK are performed in accordance with applicable Air Force safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force occupational and environmental safety, fire protection, and health program requirements. These are intended to reduce occupational risks to government personnel and contractors and to protect other individuals that reside on or visit or are near the Installation.

3.15.2.1 Ground Safety

Ground safety concerns include ground and industrial operations, operational activities, and motor vehicle use. Accidents can occur from equipment operation, materials use, and building and equipment maintenance.

Air Force safety programs for industrial activities, motor vehicle and equipment operation, and everyday operations are continuously refined as new activities and new information becomes available. All Airmen receive regular safety training in order to keep the chances of incidents as low as possible.

All construction contractors at JBSA-LAK must follow ground safety regulations and worker's compensation programs to avoid posing any risks to workers or personnel on or off Installation. Construction contractors are responsible for reviewing potentially hazardous workplace operations, monitoring exposure to workplace chemicals (e.g., lead, ACM, HAZMAT); physical hazards (e.g., noise propagation, slips, trips, falls); and biological agents (e.g., infectious waste, wildlife, poisonous plants). Construction contractors are required to recommend and evaluate controls (e.g., preventive, administrative, engineering) to ensure personnel are properly protected and to implement a medical surveillance program to perform occupational health physicals for those workers subject to any accidental chemical exposures.

3.15.2.2 Explosives Safety

Defense Explosives Safety Regulation 6055.09 AFMAN 91-201, *Explosives Safety Standards*, defines the guidance and procedures for munition storage and handling. During typical training operations, aircraft are not loaded with high-explosive ordnance. Munitions for training operations may include captive ordnance, defensive countermeasure chaff and flares, and gun ammunition with inert projectiles. All munitions are stored and maintained in the MSA within facilities designed for the allowable types and amounts of explosives. All storage and handling of munitions is carried out by trained and qualified munitions flight personnel and in accordance with Air Force-approved Technical Orders.

Defined distances are maintained between MSAs and the other facilities on and off Base and civilian facilities/residences. These distances, referred to as Q-D arcs, are determined by the type and quantity of stored explosives. Each explosives material storage or handling facility has Q-D arcs extending outward from its sides and corners for a prescribed distance. Within these Q-D arcs, development is either restricted or prohibited to ensure personnel safety and to minimize potential damage to other facilities in the event of an accident. The land adjacent to the MSA within these arcs but outside the Installation is managed under a lease/easement arrangement with private landowners.

These existing procedures ensure that maintenance and training activities involving any type of ordnance are conducted as safely as possible.

3.15.2.3 Flight Safety

The safety of the public with respect to aircraft operations at JBSA-LAK is a primary concern for the Air Force. The areas surrounding the Installation have established AICUZ guidelines to define those areas with the highest potential for aircraft accidents and aircraft noise impacts, and to establish flight rules and flight patterns that will have the least impacts on the civilian population with regard to safety and noise effects. For potential aircraft accidents, CZs and APZs have been established to identify areas with the greatest risk for aircraft accidents and to guide or minimize off-Base development in these higher-risk areas.

The potential for aircraft mishaps during flight is a public concern with regard to flight safety. Mishaps may occur as a result of midair collisions, collisions with man-made structures or terrain, mechanical failure, weather-related accidents, pilot error, bird/wildlife-aircraft strike hazard, or strikes from defensive countermeasures used during training.

The Air Force has established a Flight Safety Program and designated areas of accident potential around air installations to protect people and property on the ground. These areas include CZs and APZs, which restrict incompatible land use and thereby reduce exposure to hazards within and adjacent to the runway.

3.15.3 Environmental Consequences

3.15.3.1 Evaluation Criteria

The Air Force assesses safety-related impacts from a proposed activity according to the potential to increase or decrease safety risks to personnel, the public, property, or the environment. Adverse impacts related to safety would occur if the Proposed Action resulted in Air Force OSHA criteria being exceeded or the improper implementation of established or proposed safety measures, creating unacceptable safety risk to personnel. Adverse impacts would occur if the activities:

- substantially increase risks associated with the safety of construction personnel, contractors, military personnel, or the local community;
- substantially hinder the ability to respond to an emergency; or
- introduce a new health or safety risk for which the Base is not prepared or does not have adequate management and response plans in place.

3.15.3.2 No Action Alternative

Under the No Action Alternative, the projects under the Proposed Action would not occur and the existing safety conditions would remain unchanged. The built environment of JBSA-LAK would continue to deteriorate and become outdated for military use. The MSA access control gates would not be repaired or upgraded, and a munitions inspection and maintenance facility would not be constructed within the MSA. Approximately 35 trees in Upson Park would continue to protrude above the require safety height. AFRC would continue to operate from inadequate facility space, limiting the unit's ability to conduct mission critical training. In the long term, future development program projects would not be precluded under the No Action Alternative.

3.15.3.3 Proposed Action

Ground Safety

Construction and demolition activities can potentially expose personnel to health and safety hazards from heavy-equipment operation, HAZMAT and chemical use, and working in confined, poorly ventilated, and noisy environments. Therefore, short-term, negligible-to-minor impacts on contractor health and safety could occur during proposed construction and demolition projects under the Proposed Action. To minimize health and safety risks, contractors would be required to use appropriate personal protective equipment, establish and maintain site-specific health and safety programs for their employees, and follow all applicable

OSHA regulations. Additionally, construction contractors at JBSA-LAK are required to follow ground safety regulations and worker's compensation programs to avoid risks to workers or personnel on or off Base.

Construction of the 433 AW Firefighter Training Facility would increase available training space for the AFRC Fire Department. Relocation of the AFRC Fire Department would allow continued integration of Active Duty and Reserve training, sustain efficiencies, and place the Reserve unit proximal to other fire-fighting facilities at JBSA-LAK, resulting in a long-term beneficial impact to ground safety.

Contractors would be advised that JBSA-LAK could potentially have underground transite (asbestos cement) water mains and servicing lines. Transite visually appears like concrete and sometimes the layers or fibers are visible. If these pipes are damaged during excavation (e.g., removal of underground piping and lift stations), then Emergency Notification Procedures for Unforeseen Site Conditions would be implemented. Such procedures would only be used if there is reason to believe the ACM was disturbed in an inaccessible area to ensure that a thorough assessment can be conducted before proceeding. If the ACM was disturbed, the area-specific JBSA Environmental office would be notified for further instructions. Repair or abatement of the pipes would be performed by a certified abatement team.

Explosives Safety

Under the Proposed Action, MSA infrastructure would be modified within the CTA. Security around munitions storage access would be improved, and the construction of a munitions inspection and maintenance facility would support future mission growth and potentially contribute to long-term ESQD arc reduction. These activities include the construction of a secure overnight munitions truck holding parking area for transient cargo and the construction of a munitions inspection and maintenance facility within the MSA to support future mission growth, resulting in a long-term beneficial impact to explosives safety.

Flight Safety

A survey of tree heights at Upson Park by the 502 CES and the Airfield Manager in 2016 determined that several trees at Upson Park are too tall and protrude above the required 7 to 1 transitional slope from the runway, which does not comply with the UFC 3-260-01, *Airfield and Heliport Planning and Design*. Removing the trees, located west of the runway, would reduce the likelihood of wildlife in the immediate area of the runway. Therefore, the Proposed Action would reduce the likelihood of a bird strike, resulting in a long-term beneficial impact to flight safety.

The proposed projects would result in minor beneficial effects to ground, explosives, and flight safety. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at JBSA-LAK, potential cumulative effects to safety would not be likely to occur.

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