



Draft

Environmental Assessment Addressing
Area Development of the Corporate and Main
Street Districts, Joint Base San Antonio-Fort
Sam Houston, Texas



December
2020



Draft Mitigated Finding of No Significant Impact (FONSI)
FOR AN
Environmental Assessment Addressing Area Development
of the Corporate and Main Street Districts
at Joint Base San Antonio-Fort Sam Houston, Texas

Purpose of and Need for the Proposed Action

The purpose of implementing the area development projects in the Corporate and Main Street Districts of Joint Base San Antonio-Fort Sam Houston (JBSA-SAM) is to provide infrastructure and functionality improvements necessary to support the mission of 502d Air Base Wing (ABW) and tenant units.

The area development projects are needed to address deficiencies of function and capability in facilities and infrastructure at JBSA-SAM that result from obsolescence, deterioration, and evolving mission needs. These deficiencies are remedied through an ongoing process of construction of new facilities and infrastructure, renovation of existing facilities, and demolition of redundant or obsolete facilities. Installation development projects are required to allow 502 ABW and its tenant units to successfully complete their missions.

Individual Proposed Projects. JBSA-SAM seeks to improve its understanding of the potential environmental consequences associated with the continuing installation development process by evaluating in a single EA, selected projects proposed in the Corporate and Main Street District Area Development Plans (ADPs). A total of 14 short-term projects are outlined in the Corporate District ADP, and 14 are outlined in the Main Street District ADP. The short-term projects are divided into four categories: construction projects, infrastructure improvement projects, facility demolitions, and natural infrastructure management projects. These four categories were identified for use in the Environmental Assessment (EA) because they allow the grouping of development initiatives by generally common elements of their activity and the nature of their expected potential environmental impacts.

From the 28 projects in the ADPs, 8 representative projects were selected for more detailed analysis in the EA. The 8 projects were selected because, as a group, they frame the range of potential impacts that reasonably could be expected from all projects within the project category and consequently are subject to detailed analysis in this EA. One representative project within each district in each project category, for a total of 8 projects, is fully analyzed; however, all projects are considered in the cumulative impacts analysis of the EA. The eight representative projects analyzed in the EA include:

Construction Projects

- C1 – Construct Fitness Center – Corporate District
- C2 – Army North Homeland Defense Operations Center – Main Street District

Infrastructure Improvement Projects

- I1 – Entry Boulevard and Roundabout – Corporate District
- I2 – Storefront Parking Upgrade – Main Street District

Facility Demolition Projects

- D1 – Demolish Single-Family Residential Units – Corporate District
- D2 – Demolish Building 260 – Main Street District

Natural Infrastructure Management Projects

- N1 – Physical Training Trail Extension – Corporate District
- N2 – Quadrangle Park – Main Street District

Description of the Proposed Action and Alternatives

Proposed Action. The EA evaluates the potential environmental impacts that may arise from the implementation of short-term area development projects identified in the Corporate and Main Street District ADPs. To effectively manage the complexity and volume of development projects in the Corporate and Main Street Districts at JBSA-SAM, the EA serves as a baseline environmental analysis for future projects that are similar in scope to those analyzed in this EA. Under United States Air Force (USAF) environmental impact analysis program guidelines, each project will be reviewed prior to implementation to ensure it was sufficiently analyzed in the EA and that there has not been a substantial change in the project. If the project has not been sufficiently analyzed or there has been a change in scope, conditions, or regulations, JBSA-SAM would complete additional environmental analysis for the project, as applicable.

Alternatives. Potential alternatives for each of the representative projects were considered and either carried forward for full environmental analysis in the EA or dismissed in accordance with the four universal selection standards discussed in Section 2.2 of the EA. As applicable, projects included additional project-specific selection standards. Alternatives for all the representative projects were analyzed; a number of projects had alternatives that had just one location that met the selection standards. Other location alternatives were considered but dismissed as described in Section 2.3 of the EA.

No Action Alternative. The No Action Alternative is carried forward for further analysis in the EA to provide a baseline against which the effects of the Proposed Action can be assessed. The No Action Alternative would be “no change” from current practices, or continuing with the present course of action until that action is changed.

Under the No Action Alternative, JBSA-SAM would not implement any of the short-term area development projects. Deficiencies of function and capability in facilities and infrastructure in the Corporate and Main Street Districts that result from obsolescence, deterioration, and evolving mission needs would persist. 502 ABW and its tenant units would not receive the infrastructure and functionality improvements necessary to successfully comply their missions. A detailed description of the No Action Alternative for each of the representative projects is provided in Section 2.3 of the EA.

Summary of Environmental Effects

The Proposed Action and alternatives have been reviewed in compliance with the National Environmental Policy Act, as implemented by Council on Environmental Quality and USAF regulations. The analysis focuses on the following environmental resources: land use, air quality, water resources, noise, geological resources, biological resources, cultural resources, safety, and hazardous materials and wastes. A cumulative impacts assessment was also conducted. The analysis in the EA for the environmental resource areas listed above, other than cultural resources, identified negligible to moderate adverse impacts under the Proposed Action. Potential minor to major, or significant, environmental impacts on cultural resources would be reduced to less than significant through mitigation. A summary of environmental impacts is provided in Section 4.5 of the EA.

Mitigation Measures

JBSA-SAM is in compliance with Section 106 of the National Historic Preservation Act (NHPA). As the planning process for each project outlined in the Corporate and Main Street District ADPs mature and project details become more refined, NHPA Section 106 consultation with the Texas State Historic Preservation Officer (SHPO), National Park Service, and Native American tribes will continue or commence as necessary. Consultation for each project will occur as project planning matures and details become more refined to identify and implement measures to address adverse effects.

JBSA has initially determined the area development projects analyzed in this EA would have negligible to major adverse and beneficial effects on historic properties. JBSA-SAM would mitigate building demolitions and potential viewshed impacts for each project to reduce impacts to less than significant. Mitigation measures would include preparing documentation of the most representative examples of the different building types and styles to be demolished in accordance with Historic American Building Survey Level III standards and developing interpretive signage to mitigate the broader impacts on the district's overall coherence and historic integrity. Other potential measures include development of Memorandums of Agreement with the Texas SHPO, signage and displays, brochures, and others to be identified through Section 106 consultation for each project.

Stakeholder Involvement

Based on the description of the Proposed Action as set forth in the EA, all activities have been found to comply with the criteria or standards of environmental quality. Coordination and consultation with appropriate federal, state, and local agencies regarding this EA is being completed. The attached EA and this FONSI is being made available to the public for a 30-day review period. Agencies are receiving coordination throughout the EA development process, and their comments will be addressed as part of the analysis of potential environmental impacts performed in the EA.

Finding of No Significant Impact

Based on the information and analysis presented in the EA and on review of the public and agency comments submitted during the 30-day public comment period, I conclude that the environmental impacts of implementing installation development projects at JBSA-SAM are not significant, that preparation of an Environmental Impact Statement is unnecessary, and that a FONSI is appropriate.

CAROLINE M. MILLER, Brig Gen, USAF
Commander, 502 ABW and JBSA

Date

Attachment: EA Addressing Area Development of the Corporate and Main Street Districts at Joint Base San Antonio-Fort Sam Houston, Texas.

ABBREVIATIONS AND ACRONYMS

ABW	Air Base Wing	ESCP	Erosion and Sediment Control Plan
ACAM	Air Conformity Applicability Model	FEMA	Federal Emergency Management Agency
ACM	asbestos-containing material	FONSI	Finding of No Significant Impact
ACP	Access Control Point	FPPA	Farmland Protection Policy Act
ADP	Area Development Plan	FSG	Force Support Group
AFI	Air Force Instruction	ft	feet/foot
ARNORTH	US Army North	ft ²	square foot/feet
ASCC	Army Service Component Command	GHG	greenhouse gas
AST	aboveground storage tank	GIS	geographic information system
AT/FP	antiterrorism/force protection	HABS	Historic American Buildings Survey
BGEPA	Bald and Golden Eagle Protection Act	HDOC	Homeland Defense Operations Center
BMP	best management practice	HQ	Headquarters
CEQ	Council on Environmental Quality	HVAC	heating, ventilation, and air conditioning
CFR	Code of Federal Regulations	I-	Interstate
CGP	Construction General Permit	ICRMP	Integrated Cultural Resources Plan
CO	carbon monoxide	IDP	Installation Development Plan
CO ₂ e	carbon dioxide equivalent	JBSA	Joint Base San Antonio
CPP	Comprehensive Planning Process	JBSA-SAM	Joint Base San Antonio-Fort Sam Houston
CPSE	City Public Service Energy	LBP	lead-based paint
CWA	Clean Water Act	LOS	Level of Service
dB	decibels	MBTA	Migratory Bird Treaty Act
dBA	A-weighted decibels	MGD	million gallons per day
DNL	day-night level	MMRP	Military Munitions Response Program
DoD	Department of Defense	MS4	municipal separate storm sewer system
EA	Environmental Assessment	MWR	Morale, Welfare, and Recreation
EIAP	Environmental Impact Analysis Process	MOA	Memorandum of Agreement
EIS	Environmental Impact Statement	NAAQS	National Ambient Air Quality Standards
EISA	Energy Independence and Security Act	NEPA	National Environmental Policy Act
EO	Executive Order		
ERP	Environmental Restoration		
ESA	Endangered Species Act		

NHLD	National Historic Landmark District	RCRA	Resources Conservation and Recovery Act
NHPA	National Historic Preservation Act	SAWS	San Antonio Water System
NO ₂	nitrogen dioxide	SHPO	State Historic Preservation Officer
NOA	Notice of Availability	SO ₂	sulfur dioxides
NO _x	nitrogen oxides	SOP	Standard Operating Procedure
NPDES	National Pollutant Discharge Elimination System	SO _x	sulfur oxides
NPS	National Park Service	SPCC	Spill Prevention Control and Countermeasures
NRCS	Natural Resources Conservation Service	TAC	Texas Administrative Code
NRHP	National Register of Historic Places	TCEQ	Texas Commission on Environmental Quality
O ³	ozone	TPWD	Texas Parks and Wildlife Department
OSHA	Occupational Safety and Health Administration	tpy	tons per year
PCB	polychlorinated biphenyls	UFC	Unified Facilities Criteria
pCi/L	picocuries per liter	US	United States
PM _{2.5}	particulate matter measured less than or equal to 2.5 microns in diameter	USACE	US Army Corps of Engineers
PM ₁₀	particulate matter measured less than or equal to 10 microns in diameter	USAF	United States Air Force
PPE	personal protective equipment	USC	United States Code
		USEPA	US Environmental Protection Agency
		USFWS	US Fish and Wildlife Service
		UST	underground storage tank
		VOC	volatile organic compound

Cover Sheet

Draft Environmental Assessment

Addressing Area Development of the Corporate and Main Street Districts at Joint Base San Antonio-Fort Sam Houston, Texas

Responsible Agencies: United States Air Force (USAF), Air Education and Training Command, 502d Air Base Wing, United States Army Corps of Engineers Tulsa District.

Affected Location: Joint Base San Antonio-Fort Sam Houston (JBSA-SAM), Texas.

Report Designation: Draft Environmental Assessment (EA).

Abstract: The 502d Air Base Wing and Headquarters Air Education and Training Command have identified and programmed short-term projects for area development in the Corporate and Main Street Districts at JBSA-SAM and proposes to implement them over the next 10 years (i.e., 2020 to 2030). This EA supports the USAF Environmental Impact Analysis Process (EIAP) for the proposed area development projects. A total of 14 short-term projects are outlined in the Corporate District Area Development Plan and 14 are outlined in the Main Street District Area Development Plan. The proposed projects are divided into four categories: construction projects, infrastructure improvement projects, facility demolition projects, and natural infrastructure management projects. One representative project within each district in each category, for a total of eight projects, is fully analyzed in the EA; however, all projects are analyzed for cumulative impacts. Analyzing the potential impacts from the proposed projects in one integrated EA streamlines National Environmental Policy Act (NEPA) compliance and facilitates the area development process. Each of the eight representative projects are analyzed as a discrete proposed action and as part of a larger Proposed Action of area development of the Corporate and Main Street Districts at JBSA-SAM.

This EA analyzes the potential for environmental and socioeconomic impacts associated with the representative projects and reasonable alternatives, including the No Action Alternative. If the analysis presented in this EA indicates implementation of the Proposed Action would not result in major or significant environmental or socioeconomic impacts, a Finding of No Significant Impact would be prepared. If potentially significant impacts are determined to be associated with the Proposed Action during the preparation of this EA, it might be necessary to prepare an Environmental Impact Statement.

Written comments and inquiries regarding this document should be directed to: Ms. Kedra Segler, 802 CES/CEIEA, 1555 Gott Street, JBSA-Lackland, Texas 78236. Telephone calls can be directed to (210) 671-3944, and email messages should be sent to kedra.segler@us.af.mil.

Privacy Advisory

The Draft EA is being provided for public comment in accordance with NEPA, Council on Environmental Quality Regulations for Implementing NEPA (Title 40 Code of Federal Regulations §§1500–1508), and 32 Code of Federal Regulations § 989, *Environmental Impact Analysis Process (EIAP)*.

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

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

Draft

**ENVIRONMENTAL ASSESSMENT
ADDRESSING AREA DEVELOPMENT OF THE
CORPORATE AND MAIN STREET DISTRICTS
AT
JOINT BASE SAN ANTONIO-FORT SAM HOUSTON,
TEXAS**

Prepared for:

Department of the Air Force

DECEMBER 2020

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1. Purpose of and Need for the Proposed Action

1.1 Introduction

The 502d Air Base Wing (ABW) and Headquarters (HQ) Air Education and Training Command have identified and programmed short-term projects for area development in the Corporate and Main Street Districts at Joint Base San Antonio-Fort Sam Houston (JBSA-SAM) and proposes to implement them over the next 10 years (i.e., 2020 to 2030). These projects are presented in **Section 1.4**.

This Environmental Assessment (EA) supports the United States Air Force (USAF) Environmental Impact Analysis Process (EIAP) for the proposed area development projects. This EA was prepared to evaluate the potential environmental and socioeconomic impacts from the area development projects and reasonable alternatives in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (Title 40 Code of Federal Regulations [CFR] §§ 1500–1508), and the USAF regulations for implementing NEPA (32 CFR § 989, as amended). The intent of JBSA-SAM and HQ Air Education and Training Command is to streamline NEPA compliance and facilitate the area development process by analyzing the potential environmental and socioeconomic impacts from area development projects proposed for JBSA-SAM in one integrated EA.

The information presented in this EA serves as the basis for deciding whether the area development projects would result in a major or significant impact on the human environment, requiring the preparation of an Environmental Impact Statement (EIS), or whether no significant impacts would occur, in which case a Finding of No Significant Impact (FONSI) would be appropriate.

1.2 Background

JBSA-SAM is in Bexar County, Texas, approximately 4 miles northeast of downtown San Antonio (see **Figure 1-1**). The installation occupies 2,900 acres. Fort Sam Houston dates back to 1876 when the Army began constructing the Quartermaster supply depot on land donated by the city of San Antonio. It is the oldest installation within Joint Base San Antonio (JBSA) and one of the oldest United States (US) Army posts. JBSA-SAM is commanded by the 502 ABW and is headquarters for six major commands: the US Army Installation Management Command, US Army North (ARNORTH), US Army South, US Army Medical Command, US Army Medical Department Center and School, and Department of Health Agency Uniformed Services University of the Health Sciences (JBSA-SAM 2017a).

Installation development at JBSA-SAM is conducted in accordance with USAF's Comprehensive Planning Process (CPP) established in Air Force Instruction (AFI) 32-7062, *Comprehensive Planning*. AFI 32-7062 establishes a systematic framework for informing decisionmakers on the physical development of USAF installations and their environment. The objective of the CPP is to synthesize data and information to enable commanders to make effective development decisions affecting their installation and the surrounding community.

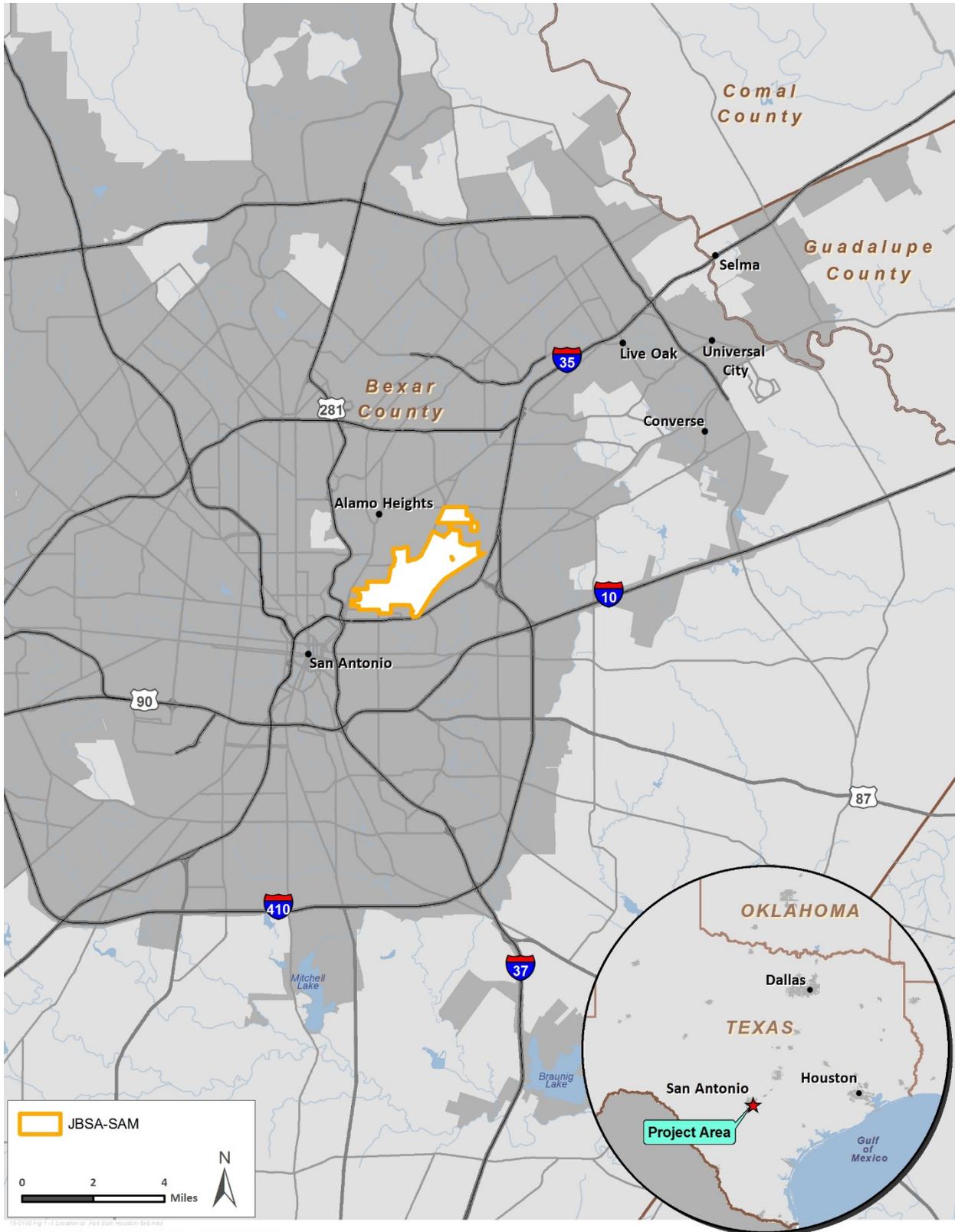


Figure 1-1. Location of JBSA-SAM

As a part of the CPP, USAF installations—such as JBSA-SAM—are divided into identifiable planning districts based on geographical features, land use patterns, building types, and transportation networks. JBSA-SAM has five such planning districts: Main Street, Corporate, Commercial, Med ED and Training, and Service. Within these planning districts, the Base Community Planner identifies shortfalls in the existing capability, capacity, or relationship of installation resources with respect to their contribution to successful accomplishment of installation missions. A thorough analysis of the existing conditions; a study of the requirements; and the consideration of the vision, goals, and objectives of the installation allow the development of conceptual installation development projects and alternatives to address the identified shortfalls within each planning district.

The installation development projects and alternatives are evaluated against measurable selection standards as part of the EIAP. As a result, the planning activities required by the CPP must integrate with the EIAP to ensure planning decisions reflect environmental values, identify alternatives to be considered, and document the rationale for dismissed alternatives.

Additionally, installation development projects must be developed to meet the following criteria:

- Support the JBSA-SAM mission requirements and quality of life standards for units and airmen hosted by the installation.
- Maximize the space on the installation to support tenant units and reduce off-installation leases.
- Preserve the historic fabric of the installation by ensuring renovations and new construction complement existing facilities on the installation.
- Meet all applicable Department of Defense (DoD), federal, state, and local laws and regulations such as the Endangered Species Act (ESA), National Historic Preservation Act (NHPA), Clean Water Act (CWA), Clean Air Act, Resource Conservation and Recovery Act, and Migratory Bird Treaty Act (MBTA). More detailed information regarding resource-specific laws and regulations is provided in the resource sections, Chapters 3 and 4, of the EA.
- Meet AFI 90-1701, *Energy Management*, by providing multi-use, energy-efficient buildings to promote quality of life and enhance mission sustainability and environmental viability.
- Meet applicable DoD antiterrorism/force protection (AT/FP) criteria, consistent with Unified Facilities Criteria (UFC) 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*.
- Promote walkable neighborhoods and campuses through a well-connected transportation network.

1.3 Purpose and Need

The purpose of implementing the area development projects in the Corporate and Main Street Districts of JBSA-SAM is to provide infrastructure and functionality improvements necessary to support the mission of 502 ABW and tenant units.

The area development projects are needed to address deficiencies of function and capability in facilities and infrastructure at JBSA-SAM that result from obsolescence, deterioration, and evolving mission needs. These deficiencies are remedied through an ongoing process of

construction of new facilities and infrastructure, renovation of existing facilities, and demolition of redundant or obsolete facilities. Installation development projects are required to allow 502 ABW and its tenant units to successfully complete their missions.

1.4 Projects Proposed for Installation Development

JBSA-SAM seeks to improve its understanding of the potential environmental consequences associated with the continuing installation development process by evaluating in a single EA selected projects proposed in the Corporate and Main Street District Area Development Plans (ADPs) (JBSA-SAM 2017c, JBSA-SAM 2017d). A total of 14 short-term projects are outlined in the Corporate District ADP, and 14 are outlined in the Main Street District ADP. The short-term projects are divided into four categories: construction projects, infrastructure improvement projects, facility demolition projects, and natural infrastructure management projects. These four categories were identified for use in the EA because they allow the grouping of development initiatives by generally common elements of their activity and the nature of their expected potential environmental impacts.

Table 1-1 lists all 28 short-term area development projects discussed in the Corporate and Main Street District ADPs (see **Figure 1-2**). From the list of 28 projects, 8 representative projects were selected for more detailed analysis. Representative projects selected are expected to have the greatest potential to impact the natural and man-made environment. The representative projects are typical of the types of projects proposed at JBSA-SAM. The eight projects were selected based on geographic setting; project size; acreage disturbed; potential amount of air emissions, increases in impervious surfaces, and vegetation disturbed; and other relevant factors associated with environmental and socioeconomic resources such as 100-year floodplains, wetlands, protected cultural resources, or species protected under the ESA. The projects were selected because, as a group, they frame the range of potential impacts that reasonably could be expected from all projects within the project category and consequently are subject to detailed analysis in this EA. One representative project within each district in each project category, for a total of eight projects, is fully analyzed in this EA; however, all projects are considered in the cumulative impacts analysis of this EA. Representative projects being analyzed in this EA are marked with an asterisk in **Table 1-1**. **Section 2.3** describes the representative projects in detail.

The intent of this EA is to address the Proposed Action of implementing representative installation development projects as identified in the Corporate and Main Street District ADPs. The ADPs provide for future development of the installation to accommodate future mission and facility requirements, include projects for transportation improvements and infrastructure enhancements, address natural and cultural resources management, and consider development constraints and opportunities and land use relationships. Since the establishment of JBSA-SAM, as with all other military installation, continuous development has occurred. In addition to evaluating the representative projects in detail, the EA serves as a baseline for future environmental analysis of mission and training requirements and future installation development projects. An analysis of the potential cumulative impacts associated with all of the projects identified in the Corporate and Main Street District ADPs is included in this EA in the cumulative impacts discussion in **Section 5**.

1.5 Environmental Analysis Approach

To effectively manage the complexity and volume of development projects in the Corporate and Main Street Districts at JBSA-SAM, USAF will use this EA as a baseline environmental analysis for future projects that are similar in scope to those analyzed in this EA. Under USAF EIAP guidelines, each project would be reviewed prior to implementation to ensure it has been sufficiently analyzed in this EA and that there has not been a substantial change in the project. If the project has not been sufficiently analyzed or there has been a change in scope, conditions, or regulations, JBSA-SAM would complete additional environmental analysis for the project, as applicable.

Table 1-1. Short-Term Area Development Projects in the Corporate and Main Street Districts

Project ID	Project Title	Description of Project	Approximate Implementation Year
Corporate District			
Construction Projects			
C1*	Construct Fitness Center	Construct an approximately 219,000-square foot (ft ²) fitness center using economical design and construction methods. Sufficient parking spots would be constructed to support the permanent facility occupants and visitors. This project includes site clearing via the demolition of Building 2750, a 10,000 ft ² building (Project D5), and two parking lots totaling approximately 30,000 ft ² . Approximately 170,000 ft ² would be impacted by this project.	2023
Infrastructure Improvement Projects			
I1*	Entry Boulevard and Roundabout	Construct a traffic circle on the installation near Walters Gate to correct circulation difficulties and create a boulevard with sidewalks, on-street parking, and landscaping. The project also includes demolition of existing roadways and parking, and construction of a new roadway, sidewalks, planting strips and other landscaping, median, and curb and gutter. Approximately 89,000 ft ² would be impacted by this project.	2023
I3	Martin Luther King Memorial and Sidewalk Network Improvement	The Martin Luther King memorial lies inside the traffic circle in front of Building 1000. This project includes construction of sidewalks around the memorial and circle and small recreational areas within the circle. Approximately 115,000 ft ² would be impacted by this project.	2025 to 2030
I4	Sidewalk Upgrades (Old Austin Road, Henry T. Allen Road, Parade Field, and Worth Road)	Old Austin Road extends northwest from Pershing Gate and requires sidewalks on the south side. Henry T. Allen Road crosses the Parade Field, connecting family housing to administrative buildings, and requires sidewalks on the south side of the road. The Parade Field crosses the district north to south and is a common pedestrian path for access and recreation. Sidewalks are intermittent and require connectivity. Worth Road connects family housing to administrative buildings across the Parade Field and requires sidewalks on both sides. Approximately 150,000 ft ² would be impacted by this project.	2025 to 2030

Draft EA for Area Development at JBSA-SAM, TX
PURPOSE OF AND NEED FOR THE PROPOSED ACTION

Project ID	Project Title	Description of Project	Approximate Implementation Year
Corporate District (continued)			
Infrastructure Improvement Projects (continued)			
15	Street Connection and Upgrades to Winfield Scott Road	Construct a road connection to Winfield Scott Road with sidewalks, planting strips, and curb and gutter. Upgrading and rerouting of Winfield Scott Road would include construction of sidewalks, landscaping, and a new roadway. Approximately 43,700 ft ² of roadway would be demolished and rerouted. Approximately 13,800 linear feet (ft) of roadway, 17,300 linear ft of sidewalks, and 11,300 linear ft of planting strips would be installed.	2025 to 2030
16	Access Street Crosswalks and Lighting	Major streets on the installation have lighting and are relatively safe; however, access streets generally do not have lighting and are not safe. This project includes installation of lighting and crosswalks to approximately 33 access street intersections within the Corporate District.	2025 to 2030
17	“Pole Away” Underground Overhead Electrical	Relocate overhead electrical lines underground, which can be accomplished as part of other street upgrade projects. There are approximately 80,000 linear ft of overhead powerlines in the Corporate District. Up to 9 acres of ground surface would be temporarily impacted by this project.	2025 to 2030
18	Dickman and Stanley Roads Connection Upgrade	Upgrade Dickman and Stanley Roads in front of Building 1000 with a complete street and sidewalks. This project would include construction of roadway, sidewalks, and planting strips. Approximately 1,350 linear ft of roadway, 2,700 linear ft of sidewalks, and 1,400 linear ft of planting strips would be installed.	2025 to 2030
Facility Demolition Projects			
D1*	Demolish Single-Family Residential Units	Demolish single-family housing units 518–527, 530–536, 544–554, 558–564, and 566. Approximately 5 acres of ground surface would be impacted by this project.	2023
D3	Demolish Building R162	Demolish Building R162, a 1,000 ft ² facility that is adjacent to Building 2735 to the west, was constructed in 1968, and has reached the end of its useful life.	2025 to 2030
D4	Demolish Physical Evaluation Board, Building 323	Demolish Building 323, a 6,552 ft ² facility, following consolidation of activities to Building 2000.	2025 to 2030
D5	Demolish Public Affairs Visual Info, Building 2750	Demolish Building 2750, a 10,000 ft ² facility constructed in 1978, to accommodate the site for the fitness center (Project C1).	2023
D6	Demolish Army and Air Force Exchange Service Building 2735	Demolish Building 2735, a 4,800 ft ² facility constructed in 1968, which houses fast food and package shipping establishments.	2025 to 2030

Draft EA for Area Development at JBSA-SAM, TX
PURPOSE OF AND NEED FOR THE PROPOSED ACTION

Project ID	Project Title	Description of Project	Approximate Implementation Year
Corporate District (continued)			
Natural Infrastructure Management Projects			
N1*	Physical Training Trail Extension	Construct physical training/recreational trails between Henry T. Allen Road and New Braunfels Avenue, connecting to the trails in the Main Street District. Approximately 118,000 ft ² would be impacted by this project.	2022
Main Street District			
Construction Projects			
C2*	ARNORTH Homeland Defense Operations Center (HDOC)	Construct a Command and Control facility to meet requirements associated with ARNORTH Army Service Component Command (ASCC) mission responsibilities. This facility would also provide for homeland defense, civil support, and theater security cooperation activities. Approximately 139,000 ft ² would be impacted by this project.	2023
C3	Car Park Addition	This project would provide replacement parking for the parking displaced by the Quadrangle Park project (Project N2), increasing capacity to support Headquarters and proposed new facilities. Approximately 43,000 ft ² would be impacted by this project.	2025 to 2030
C4	Storefront Plaza	502d Force Support Group (FSG) functions would relocate from Building 2263 to Stanley Road Storefronts (Buildings 147, 149, and 155–161) following renovation and outdoor promenade and landscaping upgrades. Storefront buildings would be connected by a covered walkway deck to enable their shared use by consolidated FSG functions. Up to 86,000 ft ² would be impacted by this project.	2025 to 2030
C5	Security Forces Addition	Construct a two- to three-story addition (7,950 ft ² per floor) to Building 2244 for 502 FSG.	2025 to 2030
Infrastructure Improvement Projects			
I2*	Storefront Parking Upgrade	Replace existing parking areas and S-4 Road between Buildings 158 and 272 with a larger parking area with landscaping and improved pedestrian access. This would add parking capacity to accommodate the functions relocating to the Storefront Plaza (Project C4). S-4 Road would be removed or realigned to the west. Approximately 211,000 ft ² would be impacted by this project. Demolition of Buildings 260 and 261 (Projects D2 and D7) would be required to accommodate the site for additional parking areas.	2023
I9	Security Forces Pedestrian Path	Replace S-9 Road with a pedestrian path to avoid an AT/FP violation. Approximately 45,000 ft ² would be impacted by this project.	2025 to 2030

Draft EA for Area Development at JBSA-SAM, TX
PURPOSE OF AND NEED FOR THE PROPOSED ACTION

Project ID	Project Title	Description of Project	Approximate Implementation Year
Main Street District (continued)			
Infrastructure Improvement Projects (continued)			
I10	Upgraded Car Park	Replace and expand the existing parking area north of S-4 Road and east of the installation's police station to south of the roadway. This would add parking capacity for functions in the area. Approximately 108,000 ft ² would be impacted by this project.	2025 to 2030
I11	Sidewalk Upgrades	Throughout the Main Street District, sufficient sidewalks would be installed on both sides of streets to the extent feasible. Approximately 230,000 ft ² would be impacted by this project.	2025 to 2030
I12	Walking Park	This project would provide a series of walking paths through the open area between Wilson Way and S-2 Road. Approximately 20,000 ft ² would be impacted by this project.	2025 to 2030
I13	"Pole Away" Overhead Electrical Lines to Underground	Relocate overhead electrical lines underground, which can be accomplished as part of other street upgrade projects. There are approximately 50,000 linear ft of overhead powerlines in the Main Street District. Up to 6 acres would be temporarily impacted by this project.	2025 to 2030
Facility Demolition Projects			
D2*	Demolish Building 260	Demolish Building 260, a 1,884 ft ² , single-story administrative facility constructed in 1908. Because of the age Building 260 and its presence within the Fort Sam Houston National Historic Landmark District (NHLD), consultation with the Texas State Historic Preservation Officer (SHPO) has been initiated.	2022
D7	Demolish Building 261	Demolish Building 261, a 1,883 ft ² , single-story administrative facility constructed in 1908. Because of the age Building 261 and its presence within the Fort Sam Houston NHLD, consultation with the Texas SHPO has been initiated.	2022
Natural Infrastructure Management Projects			
N2*	Quadrangle Park	This project would turn open space in the historic Quadrangle into a formal park area, removing parking. It also would convert S-6 Road into a pedestrian only path, creating the beginning of a walking path leading from the Quadrangle to Wilson Way. Approximately 230,000 ft ² would be impacted by this project.	2023
N3	Neighborhood Dog Parks	There are currently no dog parks in this part of the installation. Dog parks are being considered in open space in housing areas west of Long Barracks and east of Bandmaster Road, or in open space north of S-3 Road, northwest of the intersection of Artillery Loop and New Braunfels Avenue. Up to 63,000 ft ² would be impacted by this project.	2022

*Denotes representative projects being carried through for detailed analysis in the EA
 Sources: JBSA-SAM 2017a, JBSA-SAM 2017b, JBSA 2020a

1.6 Purpose of and Need for Individual Proposed Actions

Each of the representative projects to be analyzed in the EA serves a specific purpose to address a specific need. These are presented in **Table 1-2**.

Table 1-2. Purpose of and Need for Each Representative Project

Project ID	Project Title	Purpose	Need
Corporate District			
Construction Projects			
C1	Construct Fitness Center	Construct a new fitness center to consolidate and replace two undersized and poorly heated and ventilated facilities.	Consolidation of physical fitness centers would meet Morale, Welfare, and Recreation (MWR) guidelines by providing a single new facility to improve military personnel support readiness and quality of life, and avoid adversely affecting fitness training requirements.
Infrastructure Improvement Projects			
I1	Entry Boulevard and Roundabout	Create a grand entrance into the installation from Walters Gate that leads directly to the MacArthur Parade Field.	Current entry into Walters Gate contains a series of confounding intersections. Circulation difficulties require correction, and direct access to the parade field is required.
Facility Demolition Projects			
D1	Demolish Single-Family Residential Units	Demolish older housing units to clear the area for future development.	Older housing requires continuous maintenance or replacement with modern housing. Modern housing is available elsewhere on the installation and the area of Project D1 is needed for other development purposes.
Natural Infrastructure Management Projects			
N1	Physical Training Trail Extension	Extend physical training trail network across the installation, connecting parks, athletic courts, and athletic fields.	Trail would help provide required physical training for soldiers as well as improve military personnel support readiness and quality of life.
Main Street District			
Construction Projects			
C2	ARNORTH HDOC	To provide a HDOC facility to meet requirements associated with ARNORTH ASCC mission responsibilities.	ARNORTH facilities are currently dispersed throughout and off the installation, which does not meet AT/FP requirements and is not conducive to effective Command and Control.

Project ID	Project Title	Purpose	Need
Main Street District (continued)			
<i>Infrastructure Improvement Projects</i>			
I2	Storefront Parking Upgrade	Provide parking for 502 FSG personnel relocating from Building 2263 consolidating their functions to the Stanley Road Storefronts.	Address the need for parking capacity and improve pedestrian access to the Stanley Road Storefronts and nearby facilities.
<i>Facility Demolition Projects</i>			
D2	Demolish Building 260	Demolish Building 260, a single-story administrative facility, to make the site available for other uses.	Allow space for Storefront Parking Upgrade (Project I2).
<i>Natural Infrastructure Management Projects</i>			
N2	Quadrangle Park	Create a formal park area at the Quadrangle, one of the historic areas of the installation.	NHPA Section 106 consultation for the unaccompanied enlisted personnel housing currently being constructed culminated in a mitigation requirement that additional park space be constructed nearby.

Sources: JBSA-SAM 2017a, JBSA-SAM 2017b

1.7 Interagency/Intergovernmental Coordination and Consultation

1.7.1 Interagency and Intergovernmental Coordination and Consultation

Scoping is an early and open process for developing the breadth of issues to be addressed in an EA and for identifying significant concerns related to a proposed action. Per the requirements of the Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, as amended by EO 12416 of the same title, federal, state, and local agencies with jurisdiction that could be affected by the Proposed Action are being notified during development of the EA.

Appendix A contains the list of agencies to be consulted during the analysis and copies of all correspondence.

1.7.2 Government to Government Coordination and Consultation

The NHPA, 54 United States Code (USC) § 300101 et seq., requires federal agencies to consult with Native American tribal governments to identify cultural resources that may be adversely affected by the agency's proposed action. Consistent with the NHPA, DoD Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, and AFI 90-2002, *Air Force Interaction with Federally-Recognized Tribes*, federally recognized tribes that are historically affiliated with the JBSA-SAM geographic region are being invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes.

The tribal consultation process is distinct from NEPA consultation or the interagency coordination process and it requires separate notification to all relevant tribes. The timelines for tribal consultation are also distinct from those of other consultations. The Native American tribal

governments that are being coordinated or consulted with regarding these actions are listed in **Appendix A**. USAF correspondence and responses that are received will be included in this appendix in the Final EA.

1.7.3 Other Agency Consultations

Per the requirements of Section 106 of the NHPA and implementing regulations (36 CFR § 800), findings of effects and request for concurrence are being transmitted to the Texas SHPO (Texas Historical Commission). Per the requirements of Section 7 of the ESA and implementing regulations (50 CFR § 402) and the MBTA, findings of effects and request for concurrence are being transmitted to the US Fish and Wildlife Service (USFWS). Results of the consultation will be included in **Appendix A** of the Final EA.

1.8 Public and Agency Review of the EA

Through the public involvement process for the EA, USAF will notify relevant federal, state, and local agencies and the public of the Proposed Action and request input on environmental concerns they might have regarding the Proposed Action. The public involvement process will provide JBSA-SAM with the opportunity to consider and address federal, state, and local views in its decision regarding implementing this federal proposal. The Draft EA and FONSI are being sent to various agencies identified in **Appendix A** and any interested parties that have requested a copy.

A Notice of Availability (NOA) of the Draft EA and Draft FONSI is being published to announce the availability of the EA for review after it is developed. The NOA invites the public to review and comment on the Draft EA. The Draft EA and Draft FONSI are being made available in electronic format on the JBSA website and in hardcopy format at the San Antonio Public Library (Central Library location) if open. The NOA and public and agency comments will be provided in **Appendix A** of the Final EA.

1.9 Decision to be Made

The EA is a planning and decisionmaking tool that is being used to guide JBSA-SAM in implementing installation development in a manner consistent with USAF standards for environmental stewardship. This EA evaluates whether the area development projects and reasonable alternatives would result in major or significant environmental and socioeconomic impacts on the human environment. If significant impacts are identified, JBSA-SAM would undertake mitigation to reduce impacts to below the level of significance, undertake the preparation of an EIS, or abandon the area development projects that would have significant impacts.

2. Description of the Proposed Action and Alternatives

This section presents information on the Proposed Action of implementing representative projects from the JBSA-SAM Corporate and Main Street District ADPs. **Section 2.1** describes considerations and constraints for the Proposed Action at JBSA-SAM, **Section 2.2** identifies the selection standards and alternatives for the Proposed Action, **Section 2.3** provides a detailed description of the representative projects being analyzed in the EA, and **Section 2.4** provides a summary of the Proposed Action.

2.1 Proposed Action

As noted in **Section 1.4**, the Proposed Action is to implement short-term area development projects identified in the Corporate and Main Street District ADPs. The representative projects selected for analysis in this EA are described in **Section 2.3** and would meet the selection standards presented in **Section 2.2**. Each representative project has been assigned a project identification number corresponding to the project category and ADP to which they belong. **Figure 2-1** shows the proposed locations of all mappable projects associated with the Proposed Action relative to known constraints at JBSA-SAM that could influence and possibly limit future development projects at the installation. The remaining short-term projects presented in **Table 1-1** are addressed in the cumulative impacts analysis of this EA.

2.1.1 Project Considerations

During development of the ADPs, each representative project was sited in a manner compatible with JBSA-SAM's real property planning vision to operate in adaptable campuses and training sites, connected by shared modern infrastructure that supports readiness and quality of life while respecting the historic legacy and community partnerships. In order to identify planning limitations and developable areas, composite constraints were mapped using site analysis and geographic information system (GIS) data to provide built, operational, and natural constraints of the Corporate and Main Street Districts. Projects would avoid sensitive or constrained areas to the maximum extent practicable.

2.1.2 Installation Constraints

To incorporate selection parameters for the siting of projects, this EA was prepared using a constraints-based analysis. This approach enables a comprehensive evaluation of environmental concerns throughout the Corporate and Main Street Districts and also those concerns unique to specific areas of JBSA-SAM. The analysis uses the information layers from the installation's GIS database and information obtained from extensive recent EIAP evaluations for similar types of projects to help determine the direct, indirect, and cumulative effects of projects that would be completed as part of the ADPs. The constraints considered include the built environment, historic buildings and historic landmarks, operational constraints, environmental concerns, and existing utilities.

- **Built Environment.** Existing buildings, roads, and paving are important man-made constraints. Depending on their efficiency, quality, and historical significance, they

should be maintained to maximize use of past investments. Built elements, such as walkways and historic structures, play an important role in shaping how personnel view and experience the installation's outdoor space.

- **Historic Buildings and Historic Landmarks.** One of JBSA-SAM's most important strengths is the historic element of the installation, as many buildings and areas are both eligible and registered on the National Register of Historic Places. Many of the buildings in the Corporate and Main Street Districts date from 1878 when the installation was first established. The historic central Quadrangle and surrounding facilities (Building 1000 and 2000 series) in the Main Street District were constructed prior to the onset of World War I and should be maintained and retained at all costs. However, some historic buildings have deteriorated to the point that the cost of renovation may outweigh the benefit and planners should carefully consider the replacement or demolition of these facilities, which are within the Fort Sam Houston National Historic Landmark District (NHLD) and the New Post Conservation District.
- **AT/FP Setback Requirements.** Per UFC 4-010-01, AT/FP is a required site design consideration for all new development and redevelopment on military installations. Building setbacks from roadways and parking areas are defined according to the facility construction material and personnel occupancy. Setbacks take up space that could otherwise be used for development but are a necessary constraint on buildable areas.
- **Existing Utilities.** Utilities include electric, gas, water, sanitary sewer, and stormwater lines. The utility networks in the Corporate and Main Street Districts have capacity for growth, but further growth in the greenspace areas may require substantial utility upgrades to accommodate it. Greenspace areas are undeveloped areas within the planning districts designated as open fields, wetlands, woodlands, or recreation areas.
- **Environmental Concerns.** The primary environmental constraints affecting current and future development in the Corporate District include several areas of steep terrain. The areas north of Building 592 and east of Building 1000 have moderate slopes and ephemeral headwaters. The primary environmental constraints in the Main Street District include several areas with moderate slopes and ephemeral headwaters. Additional environmental constraints for the Corporate and Main Street Districts include wetlands, threatened and endangered species, stormwater management areas, and hazardous materials sites (JBSA-SAM 2017c, JBSA-SAM 2017d).
 - **Wetlands.** In accordance with EO 11990, construction of new facilities within areas containing wetlands is avoided, where practicable. In general, approximately 1.8 acres (0.5 percent) of the Main Street District is considered to be wetlands or open water. Appropriate permits must be obtained from applicable regulatory agencies to address impacts on wetland areas and determine potential mitigation, if required.
 - **Threatened and Endangered Species.** Several sensitive species have the potential to occur on JBSA-SAM. Of these species, no threatened and endangered species or critical habitat are known to reside or exist within or near the Corporate and Main Street Districts. If any of the projects have the potential to impact federally listed sensitive species, nonlethal management techniques

would be emphasized in accordance with the JBSA Integrated Natural Resources Management Plan. If a threatened or endangered species or habitat is anticipated to be affected by proposed development activities, 502d Civil Engineer Squadron would consult with USFWS to determine feasible conservation measures, including alternative project siting locations. If a state-protected species could be affected, JBSA-SAM would consult with the Texas Parks and Wildlife Department for all protected flora and fauna.

- **Stormwater Management Areas.** Stormwater management areas on JBSA-SAM consist of swales to manage stormwater flow and protect receiving water bodies from increased velocity and volume of stormwater runoff after a storm event. Swales are present and convey water to the unnamed ephemeral stream in the Main Street District. Stormwater management areas could be a constraint to installation development if development would result in modification to the system. JBSA-SAM must abide by the requirements of the Texas Commission on Environmental Quality (TCEQ) for new construction and redevelopment. Section 438 of the Energy Independence and Security Act (EISA) requires JBSA-SAM demonstrate that post-project hydrology matches pre-project conditions in terms of volume, flow rate, temperature, and other parameters. Stormwater management areas could be a constraint to installation development because increased development requires expansion of the stormwater management system, which in turn consumes additional land.
- **Hazardous Materials Sites.** Within the Corporate and Main Street Districts, there are 9 hazardous materials sites, 3 underground storage tanks (USTs), and 22 aboveground storage tanks (ASTs) (JBSA 2018a). These sites could be constraints to development as development around these sites may require additional approval prior to commencing any construction-related activities.

Figure 2-1 presents the mappable installation constraints, which are an important parameter in siting projects and development of reasonable alternatives for all projects proposed in the Corporate and Main Street Districts at JBSA-SAM. As a general practice, JBSA-SAM seeks to avoid any disturbance to sensitive or constrained areas. When these resources cannot be avoided and if projects would result in significant environmental impacts, separate and additional NEPA documentation would occur and consultation with appropriate regulatory agencies would be completed prior to initiating the action. All construction or other activities that would occur within resource areas of concern would comply with the requirements of various federal, state, and local policies and regulations that govern such resources, and the appropriate environmental protection measures would be implemented and followed.

2.2 Alternatives

NEPA and CEQ regulations mandate the consideration of reasonable alternatives to proposed actions. “Reasonable alternatives” are those that also could be utilized to meet the purpose of and need for each proposed action. The NEPA process is intended to support flexible, informed decisionmaking. The analysis provided by the EA and feedback from the public and other agencies will inform decisions made about whether, when, and how to execute the proposed

actions. Among the alternatives evaluated for each project is a No Action Alternative. The No Action Alternative will substantively analyze the consequences of not undertaking the Proposed Action, not simply conclude no impact, and serves to establish a comparative baseline for analysis.

As stated in **Section 1.2**, the CPP includes the development of alternatives to physical development projects, and guidance for complying with NEPA requires an assessment of potentially effective and reasonably feasible alternatives meeting the purpose and need of the agency. Consideration of alternatives helps to avoid unnecessary impacts and allows for an analysis of reasonable ways to achieve a purpose. The alternatives considered for each installation development project are described in detail in **Section 2.3**.

The scope and location of each proposed action and their alternatives, where applicable, have undergone phases of planning, development, and review. Developing a proposed action and potential alternatives is a critical component of the planning process. NEPA requires consideration of various alternatives to minimize adverse impacts on the environment. Evaluation of multiple options in the planning process allows the viable alternatives to be carried forward. Planners review functional and spatial relationship concepts, current facility locations, environmental conditions, and the existing on-installation environment. This analysis supports the NEPA process by considering several alternatives and evaluating their viability.

2.2.1 Selection Standards

Not every potential alternative is being analyzed in the EA. To warrant analysis, an alternative must be reasonable. Reasonable alternatives are those that are practical or feasible from a technical and economic standpoint and use common sense rather than simply being desirable from the standpoint of the applicant. To be reasonable, an alternative must meet the purpose of and need for the project (see **Section 1.6**), be feasible, and be suitable for consideration by decisionmakers. Considered alternatives are evaluated against the following three universal selection standards and project-specific selection standards, where applicable, to determine their reasonableness and suitability for analysis in the EA. Alternatives that meet all selection standards have been deemed reasonable for analysis in the EA. Alternatives that do not meet one or more selection standard have been deemed unreasonable and have been eliminated from analysis in the EA.

Selection Standard 1: Planning Constraints – Planning constraints are man-made or natural elements that can create limitations to the construction or operation of buildings, roadways, utility systems, airfields, training ranges, and other facilities. These constraints, when considered collectively with the installation’s capacity opportunities, inform the identification of potential areas for development as well as those areas that can be redeveloped to support growth. This selection standard addresses compatibility with installation operational aspects, natural and built resources, and land use compatibility, and largely dictates the location and placement of a proposed facility:

- *Operational* – Operational constraints are generally related to flying and maintaining aircraft; storing fuel, munitions, and other potentially hazardous cargo; and operating training ranges or fulfilling similar operational requirements that can limit future development activity. At JBSA-SAM, operational constraints include airfield clearance

and safety zones, noise contours, explosive safety quantity distance zones, and AT/FP standards.

- *Natural* – Natural constraints include environmental and cultural resources at JBSA-SAM. These provide positive aesthetic, social, cultural, and recreational attributes that substantially contribute to the overall quality of life on JBSA-SAM.
- *Built* – Built constraints are related to the condition, functionality, or effectiveness of infrastructure systems, facilities, and other man-made improvements.
- *Land Use Compatibility* – Land use compatibility constraints are associated with land use designations (e.g., airfield, administrative, recreation) on the installation and ensure that planning considerations account for compatibility between proposed and existing uses (e.g., recreational use may not be compatible with the airfield).

Selection Standard 2: Installation Capacity Opportunities – This selection standard refers to the capabilities of the installation’s existing facilities and infrastructure to meet existing and future mission needs. This standard largely drives the scope of facility and infrastructure development and improvement and requires that proposed facility and infrastructure development and improvements support mission operations, mission support, built infrastructure, and quality of life.

Selection Standard 3: Sustainability Development Indicators – This selection standard refers to the ability to operate into the future without a decline in either the mission or the natural and man-made systems that support it, creating a sustainable installation. Sustainability is a holistic approach to asset management that seeks to minimize negative impacts of USAF’s mission and operations on the environment. This standard also drives the scope of facility and infrastructure development and improvement and supports sustainability and resiliency of the installation through consideration of energy, water, wastewater, air quality, facilities space optimization, encroachment, airfields, natural and cultural resources, restoration sites, petroleum products, hazardous materials, solid and hazardous waste, and toxic substances.

Project-Specific Selection Standards – Project-specific selection standards address particular project requirements and are narrower than universal selection standards. No project-specific selection standards have been identified for the representative projects evaluated in the EA.

2.2.2 No Action Alternative

EIAP requires consideration of the No Action Alternative, which provides a baseline against which a proposed action and action alternatives can be compared. In addition, CEQ NEPA guidance recommends inclusion of the No Action Alternative in an EA to assess any environmental consequences that may occur if a proposed action is not implemented. Therefore, the No Action Alternative is analyzed in the EA although it does not meet the purpose of and need for installation development, as described in **Section 1.6**.

The No Action Alternative would not implement any of the short-term area development projects described in **Section 1.4**. Deficiencies of function and capability in facilities and infrastructure in the Corporate and Main Street Districts at JBSA-SAM that result from obsolescence, deterioration, and evolving mission needs would persist. 502 ABW and its tenant units would not

receive the infrastructure and functionality improvements necessary to successfully complete their missions. A detailed description of the No Action Alternative for each installation development project is provided in **Section 2.3**.

2.3 Detailed Description of the Representative Projects and Considered Alternatives

The scope, location, and objective of each installation development project are described in this section. This section also presents project-specific selection standards, alternatives that were considered but eliminated from analysis in the EA, and alternatives that are analyzed in the EA, where applicable. Disturbance area, change in impervious surface, and key environmental constraints are provided in this section for each analyzed alternative.

2.3.1 Corporate District

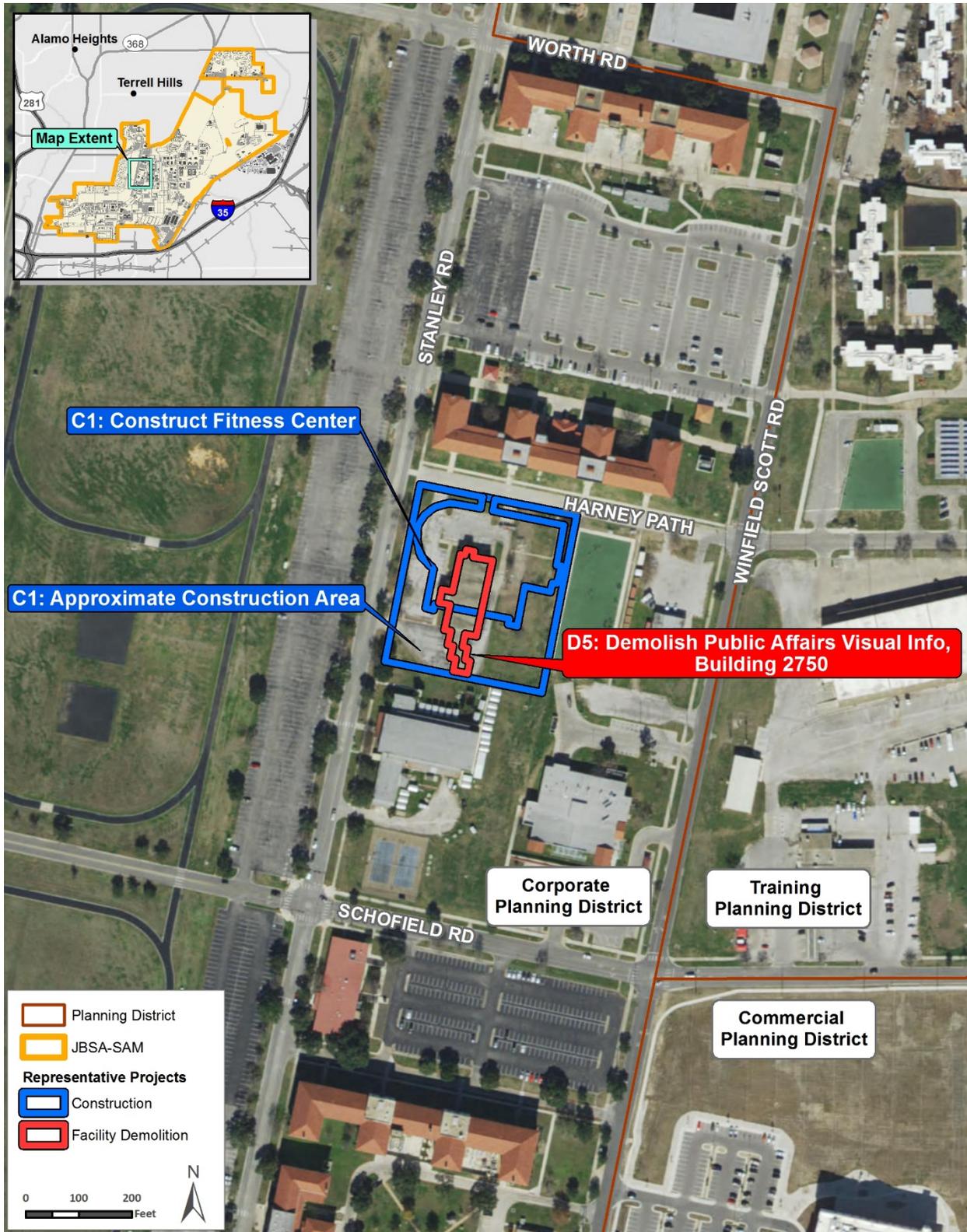
2.3.1.1 PROJECT C1: CONSTRUCT FITNESS CENTER

This project would construct and operate an approximately 219,000 ft² fitness center east of the intersection of Stanley Road and Harney Path. The proposed fitness center would include a gymnasium, fitness module, exercise module, structured activity module, locker and shower rooms, support spaces, special foundations, and building exterior and roof consistent with the New Post Conservation District. It would be constructed using sustainable design and development and Energy Policy Act of 2005 features and include information systems, mass notification system, and fire protection and alarm systems. Supporting facilities would include utilities (i.e., electrical, water, sewer, and gas), paving (i.e., access road, parking, sidewalks, curbs, and gutters), fencing, stormwater drainage, site improvements, landscaping, and information systems.

Alternatives Considered but Eliminated from Analysis in the EA: USAF considered constructing a new fitness center south of the site of the Preferred Alternative, east of the intersection of Stanley and Schofield Roads. This alternative would require demolition of Building 2797, the Military Family Readiness Center, which was recently renovated. Therefore, this alternative does not meet Universal Selection Standards 1 and 2 because available infrastructure capacity would not be maximized (Building 2797 was recently renovated for a family readiness center) and relocation of the family readiness center would be required, and is not carried forward for detailed analysis.

Alternatives to be Analyzed in the EA for Project C1:

- **Alternative C1 (Preferred Alternative).** JBSA-SAM would construct a fitness center east of Stanley Road and Harney Path, north of Building 2797. It would be situated within the current footprint of Building 2750, a 10,000-ft² building. Building 2750 (Project D5) and two adjacent parking lots totaling approximately 30,000 ft² would be demolished (approximately 40,000 ft² of demolition total) to accommodate the site for the new fitness center. A sufficient number of parking spaces would be constructed adjacent to the proposed fitness center. Alternative C1 would disturb approximately 170,000 ft² and would increase the amount of impervious surfaces by approximately 130,000 ft². **Figure 2-2** presents the proposed location for the new fitness center and associated parking.



Data Source: Joint Base San Antonio-Fort Sam Houston (2018).

Figure 2-2. Project C1: Proposed Location for the Fitness Center

- **No Action Alternative for Project C1.** Under the No Action Alternative, Project C1 would not be constructed. JBSA-SAM personnel would continue to use the physical fitness centers in Buildings 320 and 1030. Building 320 was renovated in 1993. Building 1030 was constructed in 1936, is undersized according to current standards, and poorly heated and ventilated. The fitness centers would continue to provide inadequate services operating from two facilities, would not meet MWR guidelines in AFI 34-101, *Air Force Morale, Welfare, and Recreation (MWR) Programs and Use Eligibility*, and would be unable to offer adequate social, leisure, athletic, and recreational activities. It would not provide sufficient fitness training opportunities for military personnel, their dependents, and civilians.

2.3.1.2 PROJECT I1: ENTRY BOULEVARD AND ROUNDABOUT

This project would construct a traffic circle north of Walters Gate and the intersection of Wilson Way and Winfield Scott Road to correct circulation difficulties and create an attractive road with sidewalks, on-street parking, and street trees. It would include demolishing roadway and parking, and constructing new roadway, sidewalks, on-street parking, planting strips and other landscaping, median, and curb and gutter. The new entry setup would include the installation of AT/FP control measures such as denial barriers.

Alternatives Considered but Eliminated from Analysis in the EA: No other alternatives for Project I1 were identified. The project is fixed in location and could not be addressed by siting elsewhere.

Alternatives to be Analyzed in the EA for Project I1:

- **Alternative I1 (Preferred Alternative).** The current entry into Walters Gate contains a series of confusing intersections and directs the eye to several unsightly warehouses. JBSA-SAM would construct a roundabout to improve traffic circulation entering and exiting the installation via Walters Gate. Most of the project would occur in the Corporate District; however, a small portion would occur in the Commercial District. **Figure 2-3** presents the proposed location and layout for the notional entry and roundabout. This project would require reconfiguration of an access area and parking lot around Building 331 (Gas Station) and the demolition of Building 325, a 25,340 ft² facility constructed in 1945 and occupied by Food Defense and Safety. Alternative I1 would disturb approximately 119,000 ft² and would decrease the amount of impervious surface by 30,000 ft².
- **No Action Alternative for Project I1.** Under the No Action Alternative, Project I1 would not be implemented to expand and update the entry into the installation through Walters Gate, traffic circulation issues would continue, and AT/FP and UFC requirements would not be met. These deficiencies would continue to represent safety hazards to the installation.

2.3.1.3 PROJECT D1: DEMOLISH SINGLE-FAMILY RESIDENTIAL UNITS

This project would demolish 37 single-family residential units to clear the area for future projects and increase available land capacity. **Figure 2-4** presents the location of the units proposed to be demolished.

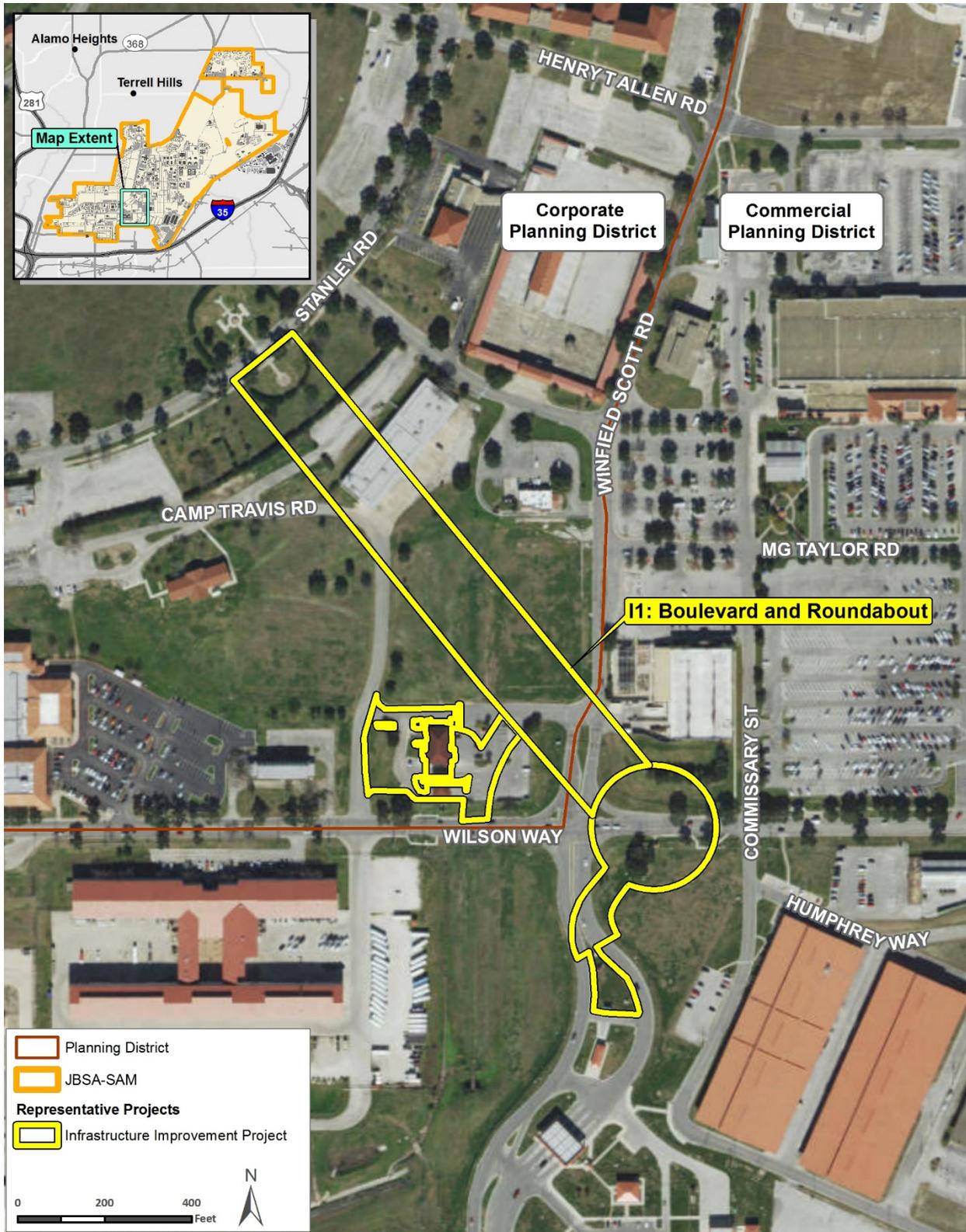


Figure 2-3. Project I1: Proposed Location and Layout of New Entry and Roundabout



Data Source: Joint Base San Antonio-Fort Sam Houston (2018).

Figure 2-4. Project D1: Single-Family Residential Units Proposed for Demolition

Alternatives Considered but Eliminated from Analysis in the EA: No other alternatives for Project D1 were identified.

Alternatives to be Analyzed in the EA for Project D1:

- **Alternative D1 (Preferred Alternative).** JBSA-SAM would demolish 37 residential units (Buildings 518–527, 530–536, 544–554, 558–564, and 566) to accommodate the area for future projects. Modern housing has been constructed on the installation to replace these older, less efficient homes. Approximately 5 acres of ground surface would be impacted by this project.
- **No Action Alternative for Project D1.** Under the No Action Alternative, Project D1 would not be implemented to demolish the older residential units. Land would not be freed up for other uses and residents would continue to live in older, less efficient homes.

2.3.1.4 PROJECT N1: PHYSICAL TRAINING TRAIL EXTENSION

This project would construct physical training/recreational trails between Henry T. Allen Road and New Braunfels Avenue (see **Figure 2-5**).

Alternatives Considered but Eliminated from Analysis in the EA: No other alternatives for Project N1 were identified.

Alternatives to be Analyzed in the EA for Project N1:

- **Alternative N1 (Preferred Alternative).** JBSA-SAM would construct physical training/recreational trails between Henry T. Allen Road and New Braunfels Avenue, connecting to trails in the Main Street District. The trail network would reach across the installation, connecting and circulating among the parks, athletic courts, and athletic fields. Approximately 118,000 ft² would be impacted by this project.
- **No Action Alternative for Project N1.** Under the No Action Alternative, additional physical training/recreational trails for Project N1 would not be constructed to expand the trail network on the installation and connect to trails in the Main Street District.

2.3.2 Main Street District

2.3.2.1 PROJECT C2: ARNORTH HDOC

This project would involve construction of a HDOC facility to support ARNORTH ASCC and serve as a headquarters for a Joint Task Force or Joint Force Land Component Command. Approximately 500 personnel would be consolidated to the HDOC from several existing dispersed ARNORTH facilities on and off the installation.

Alternatives Considered but Eliminated from Analysis in the EA: No other alternatives for Project C2 were identified.

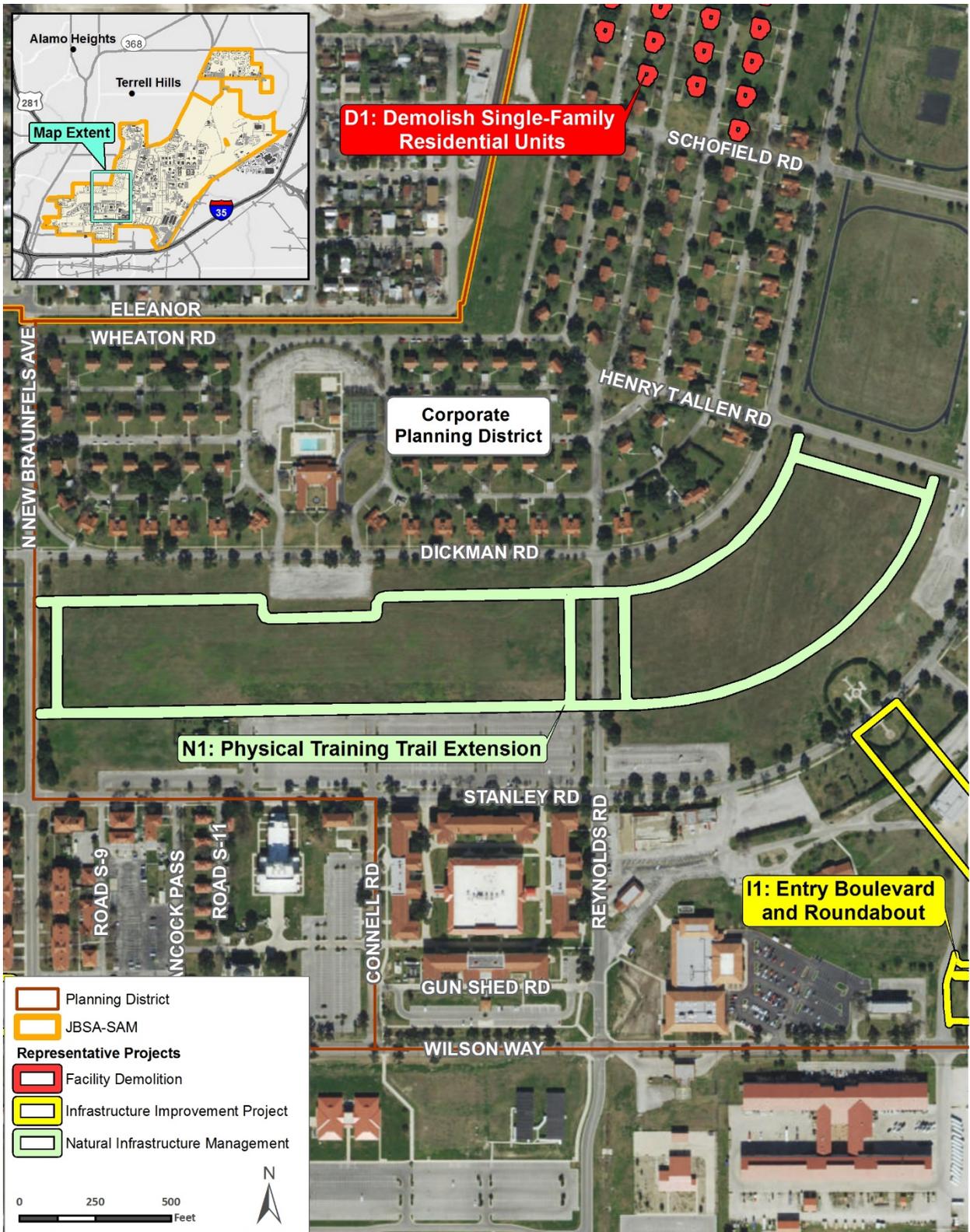


Figure 2-5. Project N1: Proposed Physical Training/Recreational Trail Extension

Alternatives to be Analyzed in the EA for Project C2:

- **Alternative C2 (Preferred Alternative).** JBSA-SAM would infill an open area north of the Quadrangle into a 148,750-ft² Command and Control facility (see **Figure 2-6**). The facility would provide for homeland defense, civil support, and theater security cooperation activities; a continuous area of responsibility situational awareness; integration of Joint Staff and interagency elements during exercise and operations; and maintain networks/communication with federal, state, and local agencies as well as other Army, Joint, and multinational headquarters. Approximately 139,000 ft² would be impacted by this project and approximately 113,000 ft² of impervious surfaces would be created.
- **No Action Alternative for Project C2.** Under the No Action Alternative, undeveloped space and a parking lot in the Quadrangle would not be converted into a Command and Control Facility. No construction would occur.

2.3.2.2 PROJECT I2: STOREFRONT PARKING UPGRADE

This project would provide parking for 502 FSG personnel relocating from Building 2263 and consolidation of their functions to the Stanley Road Storefronts (Project C4). It would improve parking and pedestrian access to the Stanley Road Storefronts and nearby facilities.

Alternatives Considered but Eliminated from Analysis in the EA: No other alternatives for Project I2 were identified.

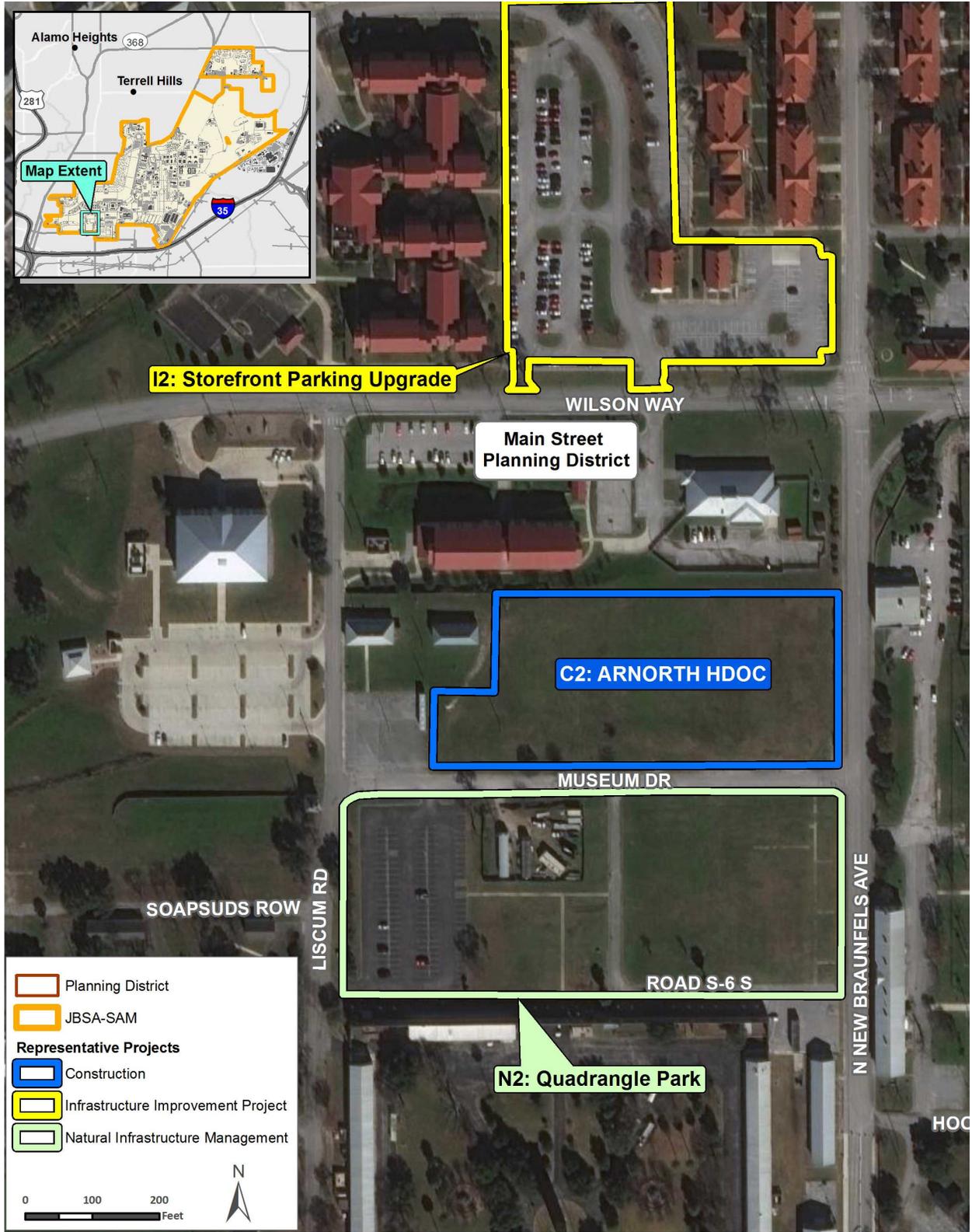
Alternatives to be Analyzed in the EA for Project I2:

- **Alternative I2 (Preferred Alternative).** This alternative would expand, reconfigure, and construct approximately 211,000 ft² of parking for 502 FSG personnel relocating as part of Project C4 and other personnel and visitors to the Stanley Road Storefronts or nearby facilities improving parking and pedestrian access to the area (see **Figure 2-7**). The site is occupied by a smaller parking lot and two buildings (260 and 261) that would be demolished (Projects D2 and D7). Dragon Valley Road, which bisects the site, would be reconfigured or replaced with a parking lot access roadway.
- **No Action Alternative for Project I2.** Under the No Action Alternative, expanded parking areas near the Stanley Road Storefronts would not be constructed. Parking would not be provided for relocated personnel or visitors to the Storefronts or nearby facilities.

2.3.2.3 PROJECT D2: DEMOLISH BUILDING 260

This project is to demolish Building 260, a 1,884 ft², single-story administrative facility constructed in 1908 (see **Figure 2-7**).

Alternatives Considered but Eliminated from Analysis in the EA: No other alternatives for Project D2 were identified.



Data Source: Joint Base San Antonio-Fort Sam Houston (2018).

Figure 2-6. Project C2: Proposed ARNORTH HDOC Facility



Data Source: Joint Base San Antonio-Fort Sam Houston (2018).

Figure 2-7. Projects I2 and D2: Proposed Storefront Parking Upgrade and Building 260 Proposed for Demolition

Alternatives to be Analyzed in the EA for Project D2:

- **Alternative D2 (Preferred Alternative).** This project is to demolish Building 260, a 1,884 ft², single-story administrative facility constructed in 1908. Demolition of Building 260 is necessary for the construction of the Storefront parking project (Project I2).
- **No Action Alternative for Project D2.** Under the No Action Alternative, Building 260 would not be demolished and the area would not be cleared for the construction of the Storefront parking project.

2.3.2.4 PROJECT N2: QUADRANGLE PARK

This project would turn open space north of S-6 Road in the Quadrangle into a formal park area, removing parking. It also would convert S 6 Road into a pedestrian only path, creating the beginning of a walking path leading from the Quadrangle north to Wilson Way.

Alternatives Considered but Eliminated from Analysis in the EA: USAF considered converting the parking area at the intersection of Liscum and Staff Post Roads into a formal park area. This alternative would not meet Universal Selection Standard 1 because it would not provide a centrally located park area for easy access and would also remove parking capacity in the area, which is in high demand by installation personnel. Therefore, this alternative is not carried forward for detailed analysis.

Alternatives to be Analyzed in the EA for Project N2:

- **Alternative N2 (Preferred Alternative).** JBSA-SAM would turn open space in a centrally located Quadrangle into a formal park area (see **Figure 2-8**), addressing a mitigation measure negotiated with the Texas SHPO during Section 106 consultation. This project would also convert S 6 Road into a pedestrian only path, creating the beginning of a walking path leading from the Quadrangle north to Wilson Way. Replacement parking would be required for those parking spaces lost to allow for park construction. Approximately 230,000 ft² would be impacted by this project.
- **No Action Alternative for Project N2.** Under the No Action Alternative, undeveloped space and a parking lot in the Quadrangle would not be converted into formal park area. No construction would occur. JBSA-SAM would not satisfy mitigation negotiated during previous Section 106 consultation with the Texas SHPO.

2.4 Summary of Installation Development Projects

The eight installation development projects and the No Action Alternative for each project are analyzed in the EA. **Table 2-1** summarizes the disturbance area, change in impervious surface, and key environmental constraints for each representative project.



Data Source: Joint Base San Antonio-Fort Sam Houston (2018).

Figure 2-8. Project N2: Proposed Quadrangle Park

Table 2-1. Summary of Installation Development Projects

Project ID	Alternative Name	Disturbance Area (ft ²)	Change in Impervious Surface (ft ²)	Key Environmental Constraints
Corporate District				
C1	Construct Fitness Center	170,000	+130,000	New Post Conservation District
I1	Entry Boulevard and Roundabout	119,000	-30,000	New Post Conservation District
D1	Demolish Single-Family Residential Units	218,000	-218,000	New Post Conservation District
N1	Physical Training Trail Extension	118,000	+118,000	New Post Conservation District Fort Sam Houston NHL
Corporate District Totals		625,000	0	
Main Street District				
C2	ARNORTH HDOC	139,000	+113,000	Fort Sam Houston NHL
I2	Storefront Parking Upgrades	211,000	0	Fort Sam Houston NHL
D2	Demolish Building 260	2,000	0	Fort Sam Houston NHL
N2	Quadrangle Park	230,000	-60,000	Fort Sam Houston NHL
Main Street District Totals		582,000	+53,000	
Grand Totals		1,207,000	+53,000	

Changing mission and funding priorities might necessitate implementation of the No Action Alternative for one or more installation development projects. Consequently, the disturbance area from all projects analyzed in this EA would range between approximately 2,000 and 230,000 ft² and the total change in impervious surfaces for the projects would range between -218,000 and 130,000 ft².

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3. Affected Environment

Section 3 describes the environmental resources and conditions most likely to be affected by the Proposed Action and provides information to serve as a baseline from which to identify and evaluate potential environmental and socioeconomic impacts that could result from the Proposed Action. Baseline conditions represent current conditions. The potential environmental impacts of the Proposed Action and alternatives (including the No Action Alternative) on the baseline conditions are described in **Section 4**.

Based upon the scope of the Proposed Action, resource areas with minimal or no impacts were identified through a preliminary screening process. The following describes those resource areas not being carried forward for detailed analysis, along with the rationale for their elimination.

- **Airspace Management.** No new airspace would be designated under the Proposed Action and no changes in the manner in which the existing airspace is used would occur. As a result, USAF anticipates no short- or long-term impacts on airspace management at JBSA-SAM. Therefore, airspace management is not discussed further in this EA.
- **Socioeconomics.** Installation development in the Corporate and Main Street Districts of JBSA-SAM would have insignificant impacts on socioeconomics. No new personnel would be added to the workforce at JBSA-SAM through installation development; therefore, no appreciable change to the local population and demand for housing and public and social services would occur. Beneficial impacts on the local economy would occur from the sale of construction materials and employment of local construction workers; however, the regional availability of building materials and labor would not be noticeably affected because of the limited scope of each installation development project and the timing of the projects over 10 years. Therefore, socioeconomics is not discussed further in this EA.
- **Environmental Justice.** EO 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, and EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, require that all federal agencies address the potential effects of policies on minorities, low-income populations, and children. Because of the distance of the project areas from off-installation populated areas, no off-installation minority, low income, or youth populations would be adversely impacted by the Proposed Action. Therefore, environmental justice is not discussed further in this EA.

3.1 Land Use

3.1.1 Definition of the Resource

“Land use” refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in master planning and local zoning laws. Land use planning ensures orderly growth and compatible uses among adjacent property parcels or areas. However, no nationally recognized convention or uniform terminology for describing land use categories exists. As a result, the meanings of various land use descriptions, labels, and definitions vary among jurisdictions.

Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. A wide variety of land use categories result from human activity. Descriptive terms for human activity land uses generally include commercial, industrial, military, residential, agricultural, institutional, transportation, communications and utilities, and recreational.

In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential effects on a project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed action, and its permanence.

3.1.2 Affected Environment

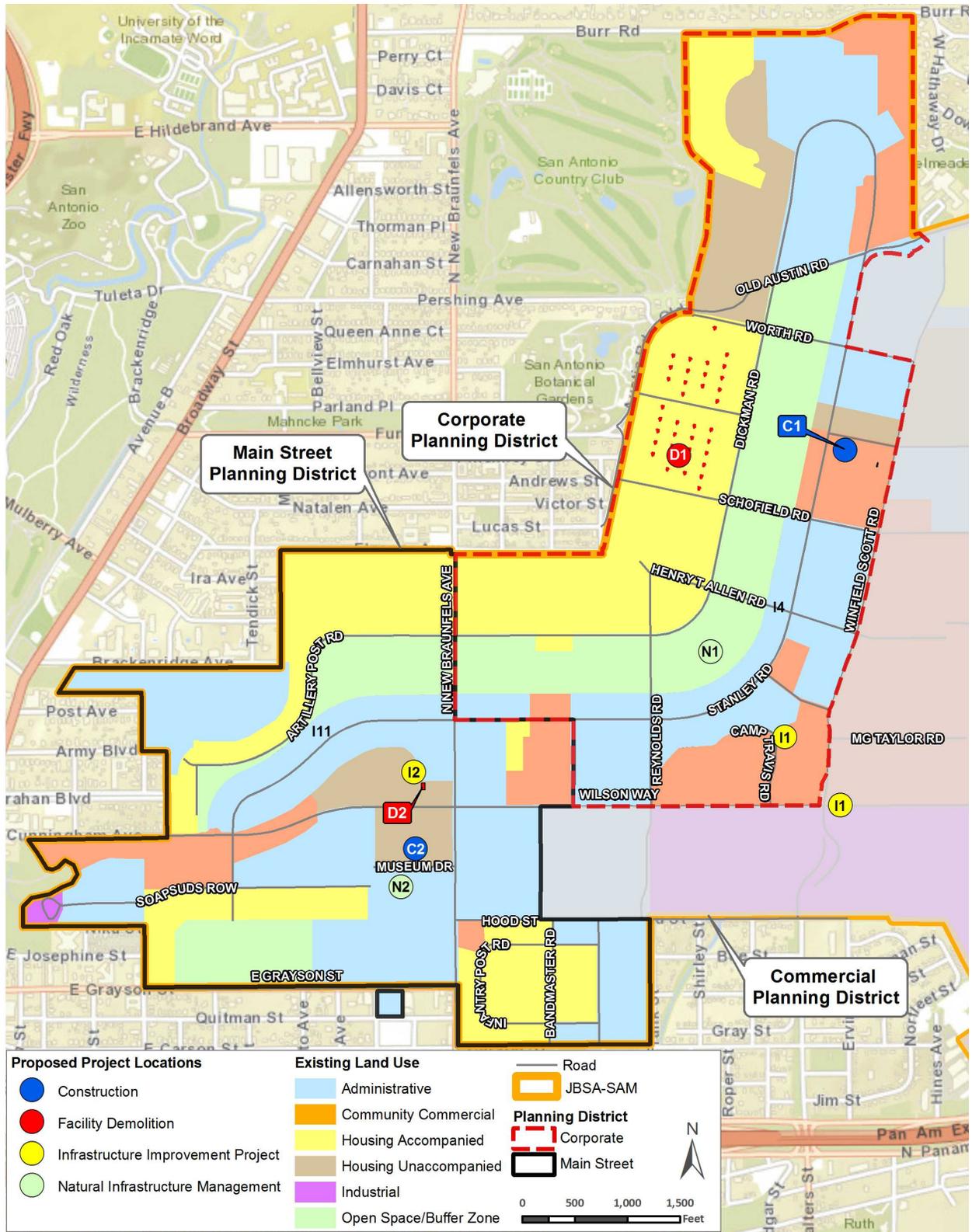
3.1.2.1 EXISTING CONDITIONS – CORPORATE DISTRICT

JBSA-SAM is in south-central Texas, surrounded by the city of San Antonio, in Bexar County. The Corporate District covers 430 acres with a total developable area of 253 acres. Many buildings in the district date from 1878, when the installation was first established. Land use within the Corporate District consists of administrative, community commercial, housing accompanied, housing unaccompanied, and open space/buffer zone (see **Figure 3-1**). The Corporate District ADP outlines the planning vision for the district as a diverse community of mission partners that work together to improve quality of life, infrastructure, and security while preserving the historic fabric of Fort Sam Houston by providing multi-use energy-efficient buildings, walkable neighborhoods and campuses, and modern transportation networks (JBSA 2017a). **Table 3-1** presents current land use designations and constraints associated with proposed projects within the Corporate District.

Table 3-1. Land Use Designations and Constraints Associated with Proposed Projects in the Corporate District

Project ID	Project Title	Land Use Designation	Land Use Constraints
C1	Construct Fitness Center	Community Commercial	New Post Conservation District
I1	Entry Boulevard and Roundabout	Community Commercial and Administrative	USTs New Post Conservation District
D1	Demolish Single-Family Residential Units	Housing Accompanied	Historic Buildings New Post Conservation District
N1	Physical Training Trail Extension	Open Space/Buffer Zone	New Post Conservation District Fort Sam Houston NHLD

The future land use plan discussion in the 2018 JBSA Installation Development Plan (IDP) identifies slight shifts in housing unaccompanied, community commercial, and open space/buffer zone; conversion of current open space/buffer zone to outdoor recreation; and the addition of two small areas of medical/dental within the Corporate District (JBSA 2018a). Land use designations identified in **Table 3-1** are consistent with future land use designations identified in the 2018 JBSA IDP.



Data Source: Joint Base San Antonio-Fort Sam Houston (2018).

Figure 3-1. Land Use and Proposed Projects within the Corporate and Main Street Districts

3.1.2.2 EXISTING CONDITIONS – MAIN STREET DISTRICT

The Main Street District covers 361 acres with a total developable area of 124 acres. Many buildings in the district date from 1878, when the installation was first established. Land use within the Main Street District consists of administrative, community commercial, housing accompanied, housing unaccompanied, open space/buffer zone, and a small area of industrial (see **Figure 3-1**). The Main Street District ADP outlines the planning vision for the district as a community of mission partners that will maintain, repair, and upgrade the modern and historic buildings by incorporating relevant styles and elements and appropriate streets, parks, and utilities (JBSA-SAM 2017b). **Table 3-2** presents current land use designations and constraints associated with proposed projects within the Main Street District.

Table 3-2. Land Use Designations and Constraints Associated with Proposed Projects in the Main Street District

Project ID	Project Title	Land Use Designation	Land Use Constraints
C2	ARNORTH HDOC	Administrative	Fort Sam Houston NHLD
I2	Storefront Parking Upgrade	Housing Unaccompanied	Historic Buildings Fort Sam Houston NHLD
D2	Demolish Building 260	Housing Unaccompanied	Historic Building Fort Sam Houston NHLD
N2	Quadrangle Park	Administrative	Fort Sam Houston NHLD

The future land use plan discussion in the 2018 JBSA IDP identifies the removal of community commercial; slight shifts in housing unaccompanied, open space/buffer zone, and administrative; conversion of current open space/buffer zone to outdoor recreation; and a slight increase in the industrial area within the Main Street District (JBSA 2018a). Land use designations identified in **Table 3-2** are consistent with future land use designations identified in the 2018 JBSA IDP.

3.1.2.3 OFF-INSTALLATION LAND USE

JBSA-SAM is surrounded by the city of San Antonio with whom DoD has a close and harmonious relationship. The installation also participates with the Alamo Area Council of Governments and hosts annual events that involve the local community. Land uses surrounding JBSA-SAM in the city of San Antonio include single- and multi-family residential, lodging, commercial, light industrial, office space, warehouse/distribution, institutional, religious, and recreational (JBSA 2018a).

3.2 Air Quality

3.2.1 Definition of the Resource

Air quality is defined by the concentration of various pollutants in the atmosphere at a given location. Under the Clean Air Act, the six pollutants defining air quality, called “criteria pollutants” are carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (measured less than or equal to 10 microns in diameter [PM₁₀] and measured less than or equal to 2.5 microns in diameter [PM_{2.5}]), and lead. CO, SO₂, NO₂, and some particulates are emitted directly into the atmosphere from emissions sources. NO₂, O₃, and some particulates

are formed through atmospheric chemical reactions that are influenced by weather, ultraviolet light, and other atmospheric processes. Volatile organic compounds (VOCs) and nitrogen oxides (NO_x) emissions are precursors of O₃ and are used to represent O₃ generation. The air emission sources from the representative projects would produce negligible emissions of lead; therefore, lead does not warrant further discussion in this EA.

Air Quality Standards. The US Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) (40 CFR § 50) for criteria pollutants. NAAQS are classified as either primary or secondary. Primary standards protect against adverse health impacts while secondary standards protect against welfare impacts, such as damage to farm crops, vegetation, and buildings. Some pollutants have short- and long-term standards. Short-term standards are designed to protect against acute, or short-term, health impacts, while long-term standards were established to protect against chronic health problems.

Areas that are and have historically been in compliance with the NAAQS or have not been evaluated for NAAQS compliance are designated as attainment areas. Areas that violate a federal air quality standard are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas and are required to adhere to maintenance plans to ensure continued attainment.

The USEPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specific thresholds. The emissions thresholds that trigger requirements for a conformity analysis are called *de minimis* levels. *De minimis* levels (in tons per year [tpy]) vary by pollutant and depend on the severity of the nonattainment status for the air quality management area in question.

USEPA also regulates synthetic minor air emissions sources that emit, or have the potential to emit, regulated New Source Review pollutants in amounts that are at or above the thresholds for major sources as cited in 40 CFR § 52.21 (100 tpy for criteria pollutants), but have added restrictions so that the potential to emit is less than such amounts for major sources. The potential to emit for a synthetic minor emissions source is limited by additional permits to stay below major emission source thresholds. Synthetic minor source permits (per 40 CFR § 49.158) apply to stationary air emissions sources and are permitted under the USEPA Title V Operating Permit program.

Climate Change and Greenhouse Gases. Global climate change refers to long-term fluctuations in temperature, precipitation, wind, sea level, and other elements of Earth's climate system. Ways in which the Earth's climate system may be influenced by changes in the concentration of various gases in the atmosphere have been discussed worldwide. Of particular interest, greenhouse gases (GHGs) are gas emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. Scientific evidence indicates a trend of increasing global temperature over the past century because of an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

3.2.2 Affected Environment

3.2.2.1 EXISTING CONDITIONS – CORPORATE DISTRICT

JBSA-SAM is located in Bexar County, Texas, which is within the Metropolitan San Antonio Interstate Air Quality Control Region (40 CFR § 81.40) and was designated as marginal nonattainment by the USEPA for the 2015 O₃ NAAQS with an effective date of 24 September 2018 (TCEQ 2019). According to 40 CFR § 93.153(k), General Conformity rules apply 1 year after designation, or were in effect starting 24 September 2019. Bexar County is in exceedance of standards for ground-level O₃, which forms when NO_x and VOCs in the air react in the presence of sunlight (San Antonio 2019a). Within 3 years following nonattainment designation, USEPA requires state and local governments to develop an implementation plan outlining how areas will attain and maintain air quality standards by reducing air pollutant emissions. Bexar County is in unclassifiable/attainment for all other criteria pollutants including NO₂, CO, SO₂, PM₁₀, and PM_{2.5} as of 2019 (TCEQ 2019).

TCEQ regulates air quality permits for stationary air pollution sources in the state of Texas in accordance with 30 Texas Administrative Code (TAC) 106, *Permits by Rule*; 30 TAC 116, *Control of Air Pollution by Permits for New Construction or Modification*; and 30 TAC 122, *Federal Operating Permits Program*. State regulations specific to emissions of VOCs and NO_x, the precursors to O₃, for which Bexar County is in marginal nonattainment, are outlined in 30 TAC 115, *Control of Air Pollution from Volatile Organic Compounds (VOCs)*, and in 30 TAC 117, *Control of Air Pollution from Nitrogen Compounds*.

Annual air emissions inventories define pollution sources and estimate the total mass of emissions generated from each source annually. The sources that emit criteria pollutants at JBSA-SAM include buildings, boilers, hot water heaters, fuel storage tanks, gasoline service stations, surface coating/paint booths, other miscellaneous chemical uses, emergency power generators, fuel storage, and medical laboratory testing. JBSA-SAM reports emissions in its annual air emissions inventory, which are presented in **Table 3-3**.

Table 3-3. 2017 Emissions Inventory for JBSA-SAM

Area	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
JBSA-SAM	4.58	23.79	35.91	0.32	14.48	10.15

Source: JBSA-SAM 2018

Notes: All values are in tpy. SO_x = sulfur oxides

Climate Change and Greenhouse Gases. Ongoing climate change in the Southern Great Plains region, including Bexar County, Texas, has the potential to increase average temperatures, as well as frequency, duration, and intensity of extreme heat events and droughts, and frequency of major storm events such as hurricanes and tornadoes. Increased average temperatures and consecutive dry days could reduce air quality leading to impairments of public health. Forest composition and species distribution may also change as rising temperatures force habitats to shift as a result of changing conditions. Increased extreme weather events could increase the frequency of flooding leading to damaged infrastructure, soil erosion, and lost agricultural productivity (Kloesel et al. 2018).

3.2.2.2 EXISTING CONDITIONS – MAIN STREET DISTRICT

The Main Street District is directly adjacent to the Corporate District and all existing air quality conditions are identical to those described for the Corporate District. See **Section 3.2.2.1** for a detailed evaluation of the current air quality conditions at JBSA-SAM.

3.3 Water Resources

3.3.1 Definition of the Resource

Water resources include groundwater, surface water, wetlands, and floodplains. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes.

Groundwater. Groundwater is water that collects or flows beneath the Earth's surface, filling the porous spaces in soil, sediment, and rocks. A deposit of subsurface water that is large enough to tap via a well is referred to as an aquifer. Groundwater originates from precipitation, percolates through the ground surface, and is often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater typically can be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

Surface Waters. Surface water includes natural, modified, and constructed water confinement and conveyance features above groundwater that may or may not have a defined channel and discernable water flows. These features are generally classified as streams, springs, wetlands, natural and artificial impoundments (e.g., ponds, lakes), and constructed drainage canals and ditches.

Surface water quality is protected through several laws and regulations. Water quality standards are regulated by USEPA, under the Safe Drinking Water Act (42 USC § 300[f] et seq.) and the CWA. TCEQ sets and implements standards for surface water quality in the state. The CWA (33 USC § 1251 et seq., as amended) establishes federal limits, through the National Pollutant Discharge Elimination System (NPDES), on the amounts of specific pollutants that are discharged to surface waters to restore and maintain the chemical, physical, and biological integrity of the water.

Wetlands. Wetlands are identified as those 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 generally include swamps, marshes, bogs, and similar areas. The US Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into waters and wetlands of the United States pursuant to Section 404 of the CWA. Section 401 of the CWA requires that an applicant for a federal license or permit to conduct an activity that could result in a discharge into waters of the United States provide the permitting agency a certification from the state in which the discharge originates certifying that the license or permit complies with CWA requirements, including applicable state water quality standards.

Floodplains and Floodways. A floodplain is the area adjacent to a watercourse, inundated by a particular flood event. The Federal Emergency Management Agency (FEMA) defines a

regulatory floodplain as the 1 percent annual chance, or 100-year, floodplain. A floodway refers to the channel of a river or other watercourse and the adjacent land areas that must remain in order to convey the base flood without cumulatively increasing the water surface elevation more than a designated height. A floodway occurs within a floodplain.

The federal requirements for floodplains and floodways are specified at 44 CFR § 60.3(d) and 44 CFR § 65.12. Regulations in 44 CFR § 60.3 are intended to address the need for effective floodplain management and provide assurance that the cumulative effects of floodplain encroachment do not cause more than a 1-foot rise after the floodplain has been identified on the Flood Insurance Rate Map. EO 11988, *Floodplain Management* (42 Federal Register 26951), requires federal agencies to identify potential floodplain encroachment by projects they fund and to assess the impact of this encroachment on human health, safety, and welfare and on the natural and beneficial values of the floodplain.

3.3.2 Affected Environment

3.3.2.1 EXISTING CONDITIONS – CORPORATE DISTRICT

Groundwater. JBSA-SAM falls within the artesian zone of the Edwards Aquifer. The Edwards Aquifer is approximately 180 miles in length and varies in width from 5 to 40 miles. It is divided into two segments, the Barton Springs and San Antonio segments. The aquifer is the primary water source for the city of San Antonio and its surrounding communities, including JBSA-SAM. Water withdrawal from the Edwards Aquifer at JBSA is restricted to 12,012 acre ft per year as determined by agreement with the USFWS in a Biological Opinion issued for protecting endangered species dependent on the aquifer (JBSA 2014a, EAA 2020). The withdrawal rate from the aquifer is at a level such that artesian wells in the area are rare.

Water conservation and use reduction measures identified in the JBSA Water Management Program are outlined in Air Force Energy Program Procedural Memorandum 96-2, 1 Jun 96, *Air Force Water Management Program*, and *Joint Base San Antonio Drought Management Plan* and are implemented at each JBSA location within the Edwards Aquifer, in order to meet the requirements of the Biological Opinion.

Surface Water. The installation lies within the Salado Creek Watershed. The headwaters of Salado Creek are in the northwestern portion of JBSA-Camp Bullis. Salado Creek is an intermittent tributary of the San Antonio River and its watershed drains approximately 218 square miles, including JBSA-SAM (JBSA 2014a). No surface waters are present within the Corporate District.

Wetlands. A 1999 survey identified 22.2 acres of wetlands on JBSA-SAM (JBSA 2014a). A few riverine and freshwater forested-shrub wetlands are located on the eastern portion of the installation. No wetlands are present in the Corporate District.

Floodplains. The Corporate District lies outside of the 100- and 500-year floodplains (JBSA 2017b). Approximately 1 mile east of the district, Salado Creek and an approximately 0.2 mile buffer on either side are within the 100-year floodplain.

3.3.2.2 EXISTING CONDITIONS – MAIN STREET DISTRICT

Groundwater. Groundwater resources for the Main Street District are similar to those for the Corporate District as described in **Section 3.3.2.1**.

Surface Water. Surface water in the Main Street District consists of an ephemeral stream running across the central portion of the district and a small pond located along the stream drainageway (see **Figure 2-1**).

Wetlands. A 1999 survey identified 22.2 acres of wetlands on JBSA-SAM (JBSA 2014a). A few riverine and freshwater forested-shrub wetlands are located on the eastern portion of the installation. In the Main Street District, there is a riverine wetland with an interceding freshwater pond that occupy 1.8 acre (see **Figure 2-1**).

Floodplains. Floodplain resources for the Main Street District are similar to those for the Corporate District as described in **Section 3.3.2.1**.

3.4 Noise

3.4.1 Definition of the Resource

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and frequencies. It can be readily identifiable or generally nondescript. Human response to increased sound levels varies according to the source type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day. Affected receptors are specific (e.g., schools, churches, hospitals) or broad (e.g., nature preserves, designated districts) areas in which occasional or persistent sensitivity to noise above ambient levels exists.

Sound Metrics. Sound varies by intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz are used to quantify sound frequency. The human ear responds differently to different frequencies. “A-weighting,” measured in A-weighted decibels (dBA), approximates a frequency response expressing the perception of sound by humans. Sounds encountered in daily life and their dBA levels are presented in **Table 3-4**.

Table 3-4. Common Sounds and their Levels

Common Sounds Outdoor	Sound Level (dBA)	Common Sounds Indoor
Motorcycle	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Vacuum cleaner
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris 1998

Ambient Sound Levels. Ambient sound is defined as the all-encompassing sound associated with a given environment, being usually a composite of sounds from many sources, near and far. Noise level is dependent upon the surrounding environment (e.g., nearby airports, heavy traffic, open space) and the density of individuals. The noise level in a normal suburban area is approximately 55 dBA, which increases to 60 dBA for an urban residential area, and to 80 dBA in the downtown section of a city (USEPA 1974). Most people are exposed to sound levels of 50 to 55 dBA or higher on a daily basis.

Day-Night Level (DNL). DNL is the primary descriptor for military noise, except for small arms. DNL combines five major factors of noise annoyance into a single index: loudness, duration, number of occurrences, time of day and nature of the disturbance. The DNL is the time-weighted energy average sound level occurring over a 24-hour period with a 10 dB penalty added to the nighttime levels between 10 p.m. and 7 a.m.

Construction Sound Levels. Construction and demolition can cause an increase in sound that is well above the ambient level. A variety of sounds are emitted from loaders, trucks, pavers, and other work equipment. **Table 3-5** presents a list of construction and demolition equipment that could be used to support the Proposed Action and their corresponding noise levels. Construction and demolition equipment usually exceeds the ambient sound levels by 20 to 25 dBA in an urban environment, and up to 30 to 35 dBA in a quiet suburban area.

Table 3-5. Average Noise Levels for Construction Equipment

Construction Category and Equipment	Predicted Noise Level at 50 ft (dBA)	Predicted Noise Level at 500 ft (dBA)	Predicted Noise Level at 1,000 ft (dBA)
Clearing and Grading			
Bulldozer	80	60	54
Grader	80–93	60–73	54–67
Truck	83–94	63–74	57–68
Excavation			
Backhoe	72–93	52–73	46–67
Jackhammer	81–98	61–78	55–72
Building Construction			
Concrete mixer	74–88	54–68	48–62
Welding generator	71–82	51–62	45–56
Pile driver	91–105	71–85	65–78
Crane	75–87	55–67	49–61
Paver	86–88	66–68	60–62
Miscellaneous			
Chain saw	87	67	61
Tree stump grinder	69	49	43

Sources: USEPA 1971, Predator 2007, Purdue 2000, TRS Audio 2020

Notes: Equipment fitted with noise control devices (e.g., mufflers) and use of sound barriers are expected to result in lower noise levels than shown in this table.

Federal Regulations. The federal government established noise guidelines and regulations to protect citizens from potential hearing damage and various other adverse physiological, psychological, and social effects associated with noise. According to the US Army, Federal

Aviation Administration, and US Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are “clearly unacceptable” in areas where noise exposure exceeds 75 dBA, “normally unacceptable” in regions exposed to noise between 65 and 75 dBA, and “normally acceptable” in areas exposed to noise of 65 dBA or less. For outdoor activities, USEPA recommends 55 dBA as the sound level below which there is no reason to suspect that the general population would be at risk from any of the effects of noise (USEPA 1974).

State and Local Regulations. The state of Texas issues general nuisance regulations that restrict noise generating activities to weekdays and business hours. Noise regulations are more specifically driven by city authorities. City of San Antonio Code of Ordinances Chapter 21, Article III, Division 1, Sections 21-52, *Noise Nuisance Enumeration*, restricts noise generation to daylight hours, during weekdays, and prohibits noise generation that exceeds 80 dB at or across any real property boundary. Several exceptions to these restrictions include activities generating sound to alert of an emergency, sound produced by moving vehicles in a public right-of-way, sound produced by any governmental body in the performance of a governmental function, stadium events, election campaigns, or sound produced by heating, ventilation, or air conditioning units on residential properties.

3.4.2 Affected Environment

Generally, ambient noise levels for JBSA-SAM are similar to those of a commercial/light industrial setting. Noise sources common to JBSA-SAM include helicopters, nontactical vehicles, and routine operation of equipment and machinery (e.g., generators; heating, ventilation and air conditioning; and construction equipment) (JBSA-SAM 2007).

Helicopter Life Flight operations and aircraft engine simulation and pyrotechnics noise associated with the medical training facility are the major noise sources at JBSA-SAM (JBSA 2014a). Life Flight operations use the Brooke Army Medical Center helipad and generally involve the Bell 206, Bell 412, and Black Hawk Utility Helicopters (UH-60) (JBSA-SAM 2007). No change to these activities would occur under the Proposed Action.

Environmental noise at JBSA is managed through the DoD Air Installation Compatible Use Zone program. JBSA-SAM has additional noise management protocols in place, as well, to mitigate disturbances on- and off-installation. Noise mitigation measures that help ensure compatibility between training and adjacent residential areas include the following:

- Notify the public of unusual operations that may produce a temporary increase in noise levels.
- Post noise contour maps and other pertinent information on the JBSA-SAM website.
- Coordinate with the Alamo Area Council of Governments to inform citizens about flight corridors.
- Conduct certain training activities away from the installation perimeter and adjacent residential areas (JBSA 2014a).

3.4.2.1 EXISTING CONDITIONS – CORPORATE DISTRICT

Noise sensitive receptors in the Corporate District consists of several noise sensitive receptors include residential housing, the library, and the community center.

3.4.2.2 EXISTING CONDITIONS – MAIN STREET DISTRICT

Noise sensitive receptors in the Main Street District include residential housing, which makes up a large portion of the district.

3.5 Geological Resources

3.5.1 Definition of the Resources

Geological resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography and physiography, geology, soils, and, where applicable, geologic hazards and paleontology.

Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features.

Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The land could be cropland, pasture, rangeland, or other land, but not urban built-up land or water. The intent of the FPPA is to minimize the extent that federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses. The implementing procedures of the FPPA and the Natural Resources Conservation Service (NRCS) require federal agencies to evaluate the adverse effects (direct and indirect) of their activities on prime and unique farmland, as well as farmland of statewide and local importance, and to consider alternative actions that could avoid adverse effects.

Geologic hazards are defined as a natural geologic event that can endanger human lives and threaten property. Examples of geologic hazards include erosion, earthquakes, landslides, ground subsidence, and sinkholes.

3.5.2 Affected Environment

3.5.2.1 EXISTING CONDITIONS – CORPORATE DISTRICT

Regional Geology. The regional geology of JBSA-SAM is composed primarily of Cretaceous-aged (from 145.5 to 65 million years before present) undifferentiated marine and fluvial

sediments, which are overlain in places with Quaternary-aged (from 1.8 million years before present to Recent) fluvial terrace deposits. Specific Cretaceous-aged lithographic units underlying the JBSA-SAM includes the Marlbrook Marl and Navarro Group, which are composed of medium-sized, gray-colored, clays, silts, and sands that are between 150 and 775 ft thick in places (JBSA-SAM 2009). The Quaternary-aged fluvial terrace deposits along Salado Creek (that crosses the eastern portion of the installation) consist of gravel, sand, and silt that are approximately 45 ft thick overall (JBSA-SAM 2004).

Topography. JBSA-SAM is in the Gulf Coastal Plains physiographic province of Texas on the boundary of the Interior Coastal Plain and Blackland Prairie subprovinces. The elevation of the Gulf Coastal Plain physiographic province gradually increases from mean sea level along the Gulf of Mexico to approximately 800 to 1,000 ft above mean sea level near the innermost portions of the province near Austin and Del Rio, Texas, respectively. The elevation across the JBSA-SAM installation is approximately 620 to 770 ft above mean sea level, and the topography contains gently sloping terrain (JBSA-SAM 2009). The elevation in the Corporate District is approximately 750 to 770 ft above mean sea level.

Soils. The primary soil characteristics at JSBA-SAM include silty-clays, gravelly clays, and clayey-loam from approximately six different soil series. The specific soil types are Houston Black, Lewisville, Tarrant, Frio, Trinity and Frio, and Venus (JBSA-SAM 2004). The most extensive soil in the Corporate District is the Houston Black soil series (clay and gravelly clay) (see **Table 3-6**) (JBSA-SAM 2007). Houston Black soils consist of clayey soils that are deep, dark gray to black, and calcareous. They have variable surface drainage with poor to nonexistent internal drainage. Runoff can be fairly rapid when the soils exhibit slopes greater than one percent, and erosion problems can be severe. Houston Black soils are fairly productive, and in rural areas, they are cultivated for grains and fiber crops (JBSA 2014b). With clay soil types being the most present within the Corporate District, infiltration is typically poor and runoff can be fairly rapid over areas with a 1 percent or greater slope. As a result, moderate to severe erosion potential exists in non-vegetated areas that do not have adequate stormwater management infrastructure (JBSA-SAM 2009).

Table 3-6. Soil Properties Found Within the Corporate District

Mapping Unit	Texture	Percent Slope	Depth to Water Table (inches)	Drainage	Runoff Class	Prime Farmland
Houston Black (HuC)	Gravelly clay	3 to 5	More than 80	Moderately well-drained	Very high	Yes
Houston Black (HuB)	Gravelly clay	1 to 3	More than 80	Moderately well-drained	Very high	Yes
Houston Black (HsB)	Clay	1 to 3	More than 80	Moderately well-drained	Very high	Yes

Source: USDA NRCS 2019

Prime Farmland. All of the soils series mapped within the Corporate District are considered prime farmland soils by the NRCS. However, because of the existing and current development planned within the District and because the area has been used as a military installation since the late 1800s, agricultural activities presently do not occur and are not planned. Therefore, these soils are not available for future agricultural use.

Geologic Hazards. No major geologic hazards exist for the JBSA-SAM area; however, there is a very low potential for earthquakes and sinkholes. The US Geological Survey has classified the JBSA-SAM area as having a low potential for earthquake hazards. The region of JBSA-SAM has a seismic hazard rating of approximately 4 to 6 percent gravity, meaning little or no damage to buildings would be expected during an earthquake that has a 2 percent chance of occurring during a 50-year time period. (JBSA-SAM 2009).

Given that Texas is prone to periodic droughts, sinkholes are a geologic feature that can be expected to occur in Corporate District. Portions of Bexar County are located in karst regions, which are susceptible to cave and sinkhole development. The city of San Antonio is considered at moderate risk for sinkhole development. However, limited property damage or loss of life due to sinkholes in these areas has been recorded. Given the geologic composition of the region, the Corporate District can expect to experience a variety of sinkholes, in unpredictable depths and diameters (AACOG 2012).

3.5.2.2 EXISTING CONDITIONS – MAIN STREET DISTRICT

Regional Geology. Regional geological conditions for the Main Street District are the same as those discussed for the Corporate District in **Section 3.5.2.1**.

Topography. Topography conditions for the Main Street District are the same as those discussed for the Corporate District in **Section 3.5.2.1**. The elevation within the Main Street District is approximately 680 to 750 ft above mean sea level, and the topography contains gently sloping terrain.

Soils. The specific soil types in the Main Street District consist of the Houston Black Soil series (clay and gravelly clay), Heiden-Ferris complex (clay), Lewisville (silty clay) and Eddy (gravelly clay loam) (see **Table 3-7**) (JBSA-SAM 2007). With clay soil types being the most present within the Main Street District, infiltration is typically poor and runoff can be fairly rapid over areas with a 1 percent or greater slope. As a result, moderate to severe erosion potential exists at non-vegetated areas that do not have adequate stormwater management infrastructure (JBSA-SAM 2009).

Table 3-7. Soil Properties Found Within the Main Street District

Mapping Unit	Texture	Percent Slope	Depth to Water Table (inches)	Drainage	Runoff Class	Prime Farmland
Heiden-Ferris complex (HoD3)	Clay	5 to 10	More than 80	Well-drained	Low	No
Houston Black (HuB)	Gravelly clay	1 to 3	More than 80	Moderately well-drained	Very high	Yes
Houston Black (HsB)	Clay	1 to 3	More than 80	Moderately well-drained	Very high	Yes
Lewisville (LvB)	Silty clay	1 to 3	More than 80	Well-drained	Low	Yes
Eddy (Tb)	Gravelly clay loam	1 to 8	More than 80	Well-drained	Low	No

Source: USDA NRCS 2019

Prime Farmland. Three of the five soils series mapped within the Main Street District are considered prime farmland soils by the NRCS. However, because of the existing and current development planned within the District and because the area has been used as a military

installation since the late 1800s, agricultural activities presently do not occur and are not planned. Therefore, these soils are currently not available for future agricultural use.

Geologic Hazards. Regional geologic hazards for the Main Street District are the same as those discussed for the Corporate District in **Section 3.1.2.1**. Given the geologic composition of the area, the planning area can expect to experience a variety of sinkholes, in varying depths and diameters.

3.6 Biological Resources

3.6.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats (e.g., grasslands, forests, wetlands) in which they exist. Protected and sensitive biological resources include ESA listed species (threatened or endangered) and those proposed for ESA-listing as designated by USFWS (terrestrial and freshwater organisms) and migratory birds. Migratory birds are protected species under the MBTA. Sensitive habitats include those areas designated or proposed by USFWS as critical habitat protected by the ESA and as sensitive ecological areas designated by state or other federal rulings. Sensitive habitats also include wetlands, plant communities that are unusual or limited in distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer and winter habitats).

Endangered Species Act. The ESA (16 USC § 1531 et seq.) established a federal program to protect and recover imperiled species and the ecosystems upon which they depend. The ESA requires federal agencies, in consultation with USFWS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. Under the ESA, “jeopardy” occurs when an action is reasonably expected, directly or indirectly, to diminish numbers, reproduction, or distribution of a species so that the likelihood of survival and recovery in the wild is appreciably reduced. An “endangered species” is defined by the ESA as any species in danger of extinction throughout all or a significant portion of its range. A “threatened species” is defined by the ESA as any species likely to become an endangered species in the foreseeable future. The ESA also prohibits any action that causes a “take” of any listed animal. “Take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” Listed plants are not protected from take, although it is illegal to collect or maliciously harm them on federal land.

Critical habitat is designated if USFWS determines that the habitat is essential to the conservation of a threatened or endangered species. Federal agencies must ensure that their activities do not adversely modify designated critical habitat to the point that it will no longer aid in the species’ recovery.

Migratory Bird Treaty Act. The MBTA of 1918 (16 USC §§ 703–712), as amended, and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, require federal agencies to minimize or avoid impacts on migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to (or attempt to) pursue, hunt, take, capture, or kill any migratory bird, nest, or egg. Federal agencies with activities that could have measurable negative impacts on migratory birds are directed by EO 13186 to develop and implement a

Memorandum of Understanding with USFWS to promote the conservation of migratory bird populations.

Bald and Golden Eagle Protection Act. Bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are protected under the Bald and Golden Eagle Protection Act (BGEPA), which prohibits the “take” of bald or golden eagles in the United States without a permit. The BGEPA defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.” For purposes of these guidelines, “disturb” means “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause: (1) injury to an eagle; (2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.” In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle’s return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

3.6.2 Affected Environment

3.6.2.1 EXISTING CONDITIONS – CORPORATE DISTRICT

Biological resources (vegetation, wildlife, and special status species) within the Corporate and Main Street Districts are the same due to the close proximity of the two districts. Therefore, the Affected Environment is described once and applies to both districts.

Vegetation. JBSA-SAM is within the Blackland Prairie Section of the Coastal Plains geomorphic province. Natural habitat in this area is dominated by various herbaceous plants, dependent on the local geology, of bluestem species (*Andropogon* sp.), eastern gama grass (*Tripsacum dactyloides*), Indiangrass (*Sorghastrum nutans*), and switchgrass (*Panicum virgatum*). Very few woody species are present due to the historical frequency of fire and grazing pressure by bison. Most of JBSA-SAM has been developed with buildings, streets, and runways to support the missions of the installation. Very little of the installation remains undeveloped. Most remaining vegetative cover consists of nonnative grass species including St. Augustine grass (*Stenotaphrum secundatum*), bermudagrass (*Cynodon dactylon*), and crabgrass (*Digitaria* spp.). Most of the area within the Corporate District is considered improved grounds or semi-improved grounds (JBSA 2014a). There are approximately 22 acres of wetlands in other parts of JBSA-SAM. No wetlands occur within the Corporate District.

The JBSA-SAM Installation Facilities Standards (JBSA 2018b) states trees should be the focus of landscape planting and, where possible, should be a mix of deciduous and evergreen species for variety. Tree grates and tree guards on smaller trees should be used where appropriate. Deciduous trees planted to the south, east, and west of facilities provide summer shade and reduce energy consumption. As the trees lose their leaves in the winter, they allow for solar heat gain in buildings, also reducing energy use. In parking lots, 1 tree for every 10 vehicle spaces in lots with 15 or more spaces is recommended.

Wildlife. The highly developed nature of JBSA-SAM results in limited habitat to support wildlife species. Urban-adapted species that are observed throughout JBSA-SAM include fox squirrel

(*Sciurus niger*), cottontail rabbit (*Sylvilagus floridanus*), black-tailed jackrabbit (*Lepus californicus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), common gray fox (*Urocyon cinereoargenteus*), common grackle (*Quiscalus quicula*), great-tailed grackle (*Quiscalus mexicanus*), white-winged dove (*Zenaida asiatica*), northern mockingbird (*Mimus polyglottos*), and blue jay (*Cyanocitta cristata*). Coyote (*Canis latrans*) and white-tailed deer (*Odocoileus virginianus*) are also known to visit urban areas but are not considered to be primary species due to the absence of preferred habitat (JBSA 2014a).

Federally Listed Species. There are 24 federally listed threatened, endangered, or candidate species near JBSA-SAM (USFWS 2019). These species include two species of unnamed beetles (*Rhadine exilis* and *Rhadine infernalis*), Braken Bat Cave meshweaver (*Cicurina venii*), Cokendolpher Cave harvestman (*Texella cokendolpheri*), Comal Springs dryopid beetle (*Stygoparmus comalensis*), Comal Springs riffle beetle (*Heterelmis comalensis*), Government Canyon bat cave meshweaver (*Cicurina vespera*), Government Canyon bat cave spider (*Neoleptoneta microps*), Helotes mold beetle (*Batrisesodes venyivi*), Madla Cave meshweaver (*Cicurina madla*), Robber Baron cave meshweaver (*Cicurina baronia*); three crustaceans and clams: the Peck's cave amphipod (*Stygobromus pecki*), Texas fatmucket (*Lampsilis bracteata*), Texas pimpleback (*Quadrula petrina*), one fish, the fountain darter (*Etheostoma fonticola*), two amphibians: San Marcos salamander (*Eurycea nana*) and Texas blind salamander (*Typhlomolge rathbuni*); five birds: golden-cheeked warbler (*Setophaga chrysoparia*), least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), and whooping crane (*Grus americana*); and two plant species: bracted twistflower (*Streptanthus bracteatus*) and Texas wild-rice (*Zizania texana*). However, these federally listed species require unique habitats that are not present at JBSA-SAM. Therefore, federally listed species are not discussed further in this EA.

Other Special Status Species. There are 20 state-listed threatened or endangered species within Bexar County that have the potential to occur near JBSA-SAM (TPWD 2019). These species include two fish: the toothless blindcat (*Trogloglanis pattersoni*) and widemouth blindcat (*Satan eurystomus*); four amphibians: black-spotted newt (*Notophthalmus meridionalis*), Cascade Caverns salamander (*Eurycea latitans*), Comal blind salamander (*Eurycea tridentifera*), and Mexican tree frog (*Smilisca baudinii*); five reptiles: Cagle's map turtle (*Graptemys caglei*), Texas horned lizard (*Phrynosoma cornutum*), Texas indigo snake (*Drymarchon melanurus erebennus*), Texas tortoise (*Gopherus berlandieri*), and timber rattlesnake (*Crotalus horridus*); and seven birds: bald eagle, black-capped vireo (*Vireo atricapilla*), reddish egret (*Egretta rufescens*), tropical parula (*Setophaga pitiayumi*), white-faced ibis (*Plegadis chihi*), wood stork (*Mycteria americana*), and zone-tailed hawk (*Buteo albonotatus*); and two mammals: black bear (*Ursus americanus*) and white-nosed coati (*Nasua narica*). These species occur in unique habitats that are not present at JBSA-SAM. Therefore, special status species are not discussed further in this EA.

MBTA- and BGEPA-Protected Species. The MBTA and BGEPA prohibit the unlawful killing, capturing, or disturbance to migratory birds and bald and golden eagles, including their parts, nests, or eggs. JBSA-SAM is located in the Central Flyway migratory route. The Central Flyway extends from northern Alaska, south through Canada, through the central United States, and through Texas into northern Mexico. Bird species present on JBSA-SAM can vary greatly

depending on the time of year and which species are migrating through the vicinity (JBSA 2014a).

The Texas Parks and Wildlife Department (TPWD) lists 431 species of birds that are known to occur in the Edwards Plateau, including Bexar County. This is almost half of all bird species that occur in North America. Out of those species, 158 species have been known to nest or could potentially nest in the Edwards Plateau. Avian species diversity is high throughout the vicinity due to the wide variety of habitat types found throughout the installation within its neighborhoods (JBSA 2014a).

Bald eagles are found primarily near rivers and large lakes; this species nests in tall trees or on cliffs near water. Bald eagles communally roost, especially in winter. This species hunts live prey, scavenges, and pirates food from other birds (TPWD 2019). Bald eagles are an unlikely transient at JBSA-SAM. The bald eagle has been observed as a stopover species at other JBSA installations (JBSA 2014a). Golden eagles are scarce migrants in this part of Texas.

3.6.2.2 EXISTING CONDITIONS – MAIN STREET DISTRICT

The biological resources (vegetation, wildlife, and special status species) within the Corporate and Main Street Districts are the same due to the close proximity of the two districts. Therefore, the Affected Environment for biological resources in the Main Street District is the same as described for the Corporate District (see **Section 3.6.2.1**). There is one 1.8-acre wetland within the Main Street District on JBSA-SAM. **Section 3.3.2.2** contains further details on wetlands.

3.7 Cultural Resources

3.7.1 Definition of the Resource

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. Depending on the condition and historic use, such resources might provide insight into the cultural practices of previous civilizations, or they might retain cultural and religious significance to modern groups. Typically, cultural resources are subdivided into archaeological resources, architectural resources, or resources of traditional or religious significance.

Archaeological Resources. These resources comprise areas where human activity has measurably altered the earth or deposits of physical remains are found (e.g., projectile points and bottles).

Architectural Resources. These resources include standing buildings, bridges, dams, other structures, and designed landscapes of historic or aesthetic significance. Historic landscapes are geographic areas associated with a historic event, activity, or person, and are composed of cultural and natural features that contribute to the landscape's physical appearance as it has evolved over time. These features can include elements such as lighting, mature tree rows, parade fields, and other open spaces in addition to buildings and other structural elements.

Traditional Resources. Resources of traditional, religious, or cultural significance can include archaeological resources, sacred sites, structures, districts, prominent topographic features, habitat, plants, animals, or minerals considered essential for the preservation of traditional culture.

Several federal laws and regulations govern protection of cultural resources, including the NHPA of 1966, the Archeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act of 1990. JBSA-SAM is required to comply with DoD regulations and instructions regarding cultural resources, including DoD Instruction 4715.16, *Cultural Resources Management*, and JBSA-SAM's Integrated Cultural Resources Management Plan (ICRMP) (JBSA 2014b). JBSA-SAM regularly consults with federally recognized tribes in accordance with the laws listed, as well as EO 13175, *Consultation and Coordination with Indian Tribal Governments*, and DoD Instruction 4710.02, *Interactions with Federally-Recognized Tribes*.

The NHPA establishes criteria for assessing the significance of cultural resources. Resources that are listed or eligible for listing in the National Register of Historic Places (NRHP) are termed "historic properties." Historic districts are a type of historic property with a concentration or linkage of related resources. The individual buildings or sites within a district are evaluated as either "contributing" or "non-contributing" to the district's overall eligibility for the NRHP. Generally, cultural resources must be more than 50 years old to warrant consideration for the NRHP. More recent resources might warrant listing if they are of exceptional importance or if they have the potential to gain significance in the future. Section 106 of the NHPA requires federal agencies to assess the potential impact of their undertakings on historic properties in the area of potential effect. JBSA-SAM will consult under Section 106 of the NHPA with the Texas SHPO and appropriate federally recognized tribes. As a part of the Section 106 process, JBSA-SAM has defined the area of potential effect to include the boundaries of the Corporate and Main Street Districts as well as a portion of the Commercial District that contains proposed infrastructure footprints associated with Project I1 (see **Figures 2-1** and **2-3**).

3.7.2 Affected Environment

JBSA-SAM has been heavily developed and little remains that reflects the area's prehistory and early history, which spans nearly 12,000 years. The earliest inhabitants were highly mobile bands of hunter-gatherers who are best known as hunters of extinct megafauna such as mammoth and bison, but who also utilized a broad range of smaller game and wild plants. People continued to live a nomadic lifestyle, but became more regionally focused over time, travelling seasonally based on the availability of local resources and trading for resources from further away. Europeans first ventured into the region in 1518, and their arrival led to significant changes for local Native American groups, many of whom were severely impacted by disease and conflict. Spanish settlement in the region began with a village and five missions established near San Antonio between 1718 and 1731. The population in the San Antonio area grew slowly until Mexican independence, after which time Anglo-Americans settled the area in large numbers and contributed to the unsettled politics of the region. Between 1845 and 1865, San Antonio was embroiled in the creation of the Republic of Texas, the Mexican-American War, and the Civil War. The Civil War and post-war Reconstruction period were a time of economic hardship; however, the arrival of the railroad in 1877 precipitated economic development and population growth (JBSA 2014b).

The earliest US Army post in San Antonio was built in 1845 and served as a base of operations during the Mexican War. A Quartermaster Depot was also developed from rented storehouses

and offices (JBSA 2014b). However, a permanent installation was not built until the 1870s. Construction on what would become Fort Sam Houston began with the Quartermaster Depot and associated facilities. The post was expanded as an infantry post as a result of the consolidation of military installations in the 1880s. The post grew further in the early 1900s as a result of an overall expansion of the army after the Spanish-American war (USDI/NPS 2002). By 1914, the 600-acre Army post was the largest in the United States (JBSA 2014b).

World War I brought a wave of temporary construction at Fort Sam Houston's Camp Travis in order to support troop training and, later, demobilization. By the 1920s, many of these buildings were in poor condition and a major building phase followed, with much of the new construction in the distinctive Spanish Mission style. Land acquisition and new construction continued in the 1930s and increased dramatically during World War II with the construction of over 400 barracks and other temporary buildings. Fort Sam Houston's war-time missions included training, running service schools, operating a prisoner-of-war camp, and procurement. After World War II, Fort Sam Houston was redirected toward a medical mission. A number of medical schools and training centers, institutes, and units are located at the installation, which became at the forefront of Army medical activities (JBSA 2014b).

3.7.2.1 EXISTING CONDITIONS – CORPORATE DISTRICT

Archaeological Resources. The Corporate District is heavily developed and is not known to contain archaeological resources. No archaeological surveys have occurred within the district due to the extent of previous disturbance. Unknown archaeological resources from the prehistoric period are not likely to occur in the Corporate District; all known sites on JBSA-SAM from this period are located near Salado Creek, outside the district. However, there is some potential for buried historic-period sites associated with early farmsteads or military activities at the former Camp Travis (JBSA 2014b).

Architectural Resources. JBSA-SAM has conducted a number of architectural studies since 1974, with most of the studies involving large numbers of buildings from across the installation, including the Corporate District. In 1980, JBSA-SAM inventoried and assessed 1,945 historic resources. Surveys of Army family housing were conducted in the mid-1980s, and 1,427 buildings were reassessed in 1997 (JBSA 2014b). These early studies focused primarily on resources from World War II and earlier. In 2005 to 2006, a Cold War historic context was prepared and 295 Cold War-era buildings were inventoried and evaluated for listing in the NRHP.

In 2002, the historic buildings and landscape elements of the New Post within the Corporate District were designated as a Conservation District. The New Post was an area of installation growth from 1918 to 1939 and encompassed the former World War I-era Camp Travis. The New Post was developed in the Spanish Mission style, a new style for the installation, but also incorporated elements found in older parts of the installation, such as the arrangement of housing around open spaces. The primary components of the New Post include an extension of the parade grounds, infantry barracks, officer's quarters, and non-commissioned officer's quarters. The design of the New Post provided privacy for housing areas and separated them from industrial and support activities. The boundary of the New Post Conservation District and its contributing buildings are presented in **Figure 2-1**.

The New Post Conservation District has been determined eligible for listing in the NRHP and contains 268 contributing buildings. One building, the former Brooke Army Medical Center (Building 1000), is also individually listed in the NRHP. Of the 268 contributing buildings in the New Post Conservation District, 239 buildings are residential housing units that have been leased to a private company. JBSA-SAM retains a perpetual easement on privatized housing for the purposes of compliance with the NHPA, which is conducted in accordance with a programmatic agreement among JBSA-SAM, the Texas SHPO, and the Advisory Council on Historic Preservation. The programmatic agreement requires JBSA-SAM to monitor the lessee's activities and consult with the SHPO in the event that activities are proposed that could have adverse effects on the Conservation District or other historic properties.

Three landscape-related studies have been conducted at JBSA-SAM. The US Army Construction Engineering Research Laboratory undertook a project in the 1990s to develop methodology and guidelines to consider potential historic landscapes on military installations, with the first report focusing on Fort Sam Houston and the different landscapes that had developed through time (JBSA 2014b). In 1998, a historic landscape management plan was developed to guide future landscape planning and help protect the historic fabric of Fort Sam Houston, including the New Post.

Traditional Resources. JBSA-SAM regularly consults with the following Native American tribes associated with the JBSA-SAM area: Mescalero Apache and Affiliated Tribes, Comanche Nation, Wichita and Affiliated Tribes, and Tonkawa Tribe. These tribes have not identified any resources of traditional, religious, or cultural significance within the Corporate District. JBSA-SAM will consult with these tribes regarding the ADPs.

3.7.2.2 EXISTING CONDITIONS – MAIN STREET DISTRICT

Archaeological Resources. As with the Corporate District, the Main Street District is heavily developed and does not contain any known archaeological resources. No archaeological surveys have been conducted due to the extent of previous disturbance. Prehistoric archaeological sites would not be expected; however, it is possible that buried historic-period sites could occur in the Main Street District including farmsteads or military sites associated with the Quadrangle and the Staff, Cavalry, and Infantry Posts (JBSA 2014b).

Architectural Resources. The history of architectural and landscape inventories at JBSA-SAM is described under the existing conditions for the Corporate District in **Section 3.7.2.1**. The first study in the Main Street District was a 1974 study of four of the oldest historic buildings on the installation, which were determined individually eligible for listing in the NRHP: the Quadrangle (Building 16), Clock Tower (Building 40), Pershing House (Building 6), and Post Chapel (Building 2200). The following year, the National Park Service designated 103 buildings in the Main Street District as a NHL. The Fort Sam Houston NHL captures the military significance of Fort Sam Houston between 1875 and 1924, a period during which the post evolved from a frontier post into a major military installation with national significance. The post is also recognized for its architectural significance and its excellent examples of nineteenth- and early-twentieth-century architecture (JBSA 2014b). The buildings in the Fort Sam Houston NHL represent four phases of the installation's development spanning from the first construction in 1875 through 1924: the Quadrangle, Staff Post, Infantry Post, and Calvary and Artillery Post.

Each part of the Fort Sam Houston NHL, described below, has a distinct architectural style. However, certain design principles are common to all of the sections of the district, such as building setbacks from roads, separation of service roads from public streets, and arrangement of buildings around open spaces.

The Quadrangle was designed as a scaled-down version of the Jeffersonville Depot in Indiana, and was the first construction at Fort Sam Houston, begun in 1875 (USDI/NPS 2002). The Quadrangle consists of a fortress-like building of both one- and two-story sections that surrounds a central tower.

The Staff Post was developed in 1881 as permanent officers' quarters built in the Italianate style. The post was developed west of the Quadrangle in an L-shape around an open parade ground that connected the post to the city.

Between 1881 and 1895, the Infantry Post was built to accommodate the post's new infantry-focused mission as troops were consolidated from other installations. Barracks and officer's quarters were built around an enclosed parade ground east of the Quadrangle. The Commanding Officer's quarters were built in the Greek Revival style, while the remaining officer's quarters were built in a simple folk or vernacular style (USDI/NPS 2002).

The Calvary and Artillery Post was developed north of the Quadrangle during another period of expansion during and after the Spanish-American War, between 1895 and 1913. The post was built to conform to the hilly topography in this area. Officer's quarters were built in the Colonial Revival style along the edge of a curving parade ground (USDI/NPS 2002). The parade ground was later expanded to the east with construction of the New Post, as described in **Section 3.7.2.1**.

Additional architectural studies since 1975 have expanded the inventory of contributing buildings in the Fort Sam Houston NHL to 296. Of these, 171 buildings are housing units that have been privatized. As with housing units in the New Post Conservation District, JBSA-SAM retains a perpetual easement on privatized housing in the Fort Sam Houston NHL for the purposes of compliance with the NHPA, and the buildings are subject to the installation's programmatic agreement with the Texas SHPO and the Advisory Council on Historic Preservation (see **Section 3.7.2.1**). As described above, four buildings in the Fort Sam Houston NHL are individually listed in the NRHP: the Quadrangle (Building 16), Clock Tower (Building 40), Pershing House (Building 6), and Gift Chapel (Building 2200). In addition, Building 18 (Film Storage Vault), which is outside the Fort Sam Houston NHL but within the Main Street District, is also individually eligible for listing in the NRHP.

Traditional Resources. Native American tribes have not identified any resources of traditional, religious, or cultural significance within the Main Street District.

3.8 Infrastructure and Transportation

3.8.1 Definition of the Resource

Infrastructure consists of the systems and physical 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 of which an area is characterized as “urban” or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. The infrastructure components discussed in this section are utilities such as electrical system, water supply, wastewater system, stormwater system, natural gas, liquid fuel, communications, and solid waste. Solid waste management primarily references the availability of systems and landfills to support a population’s residential, commercial, and industrial needs.

Transportation refers to major and minor roadways that feed into the installation and the security gates, and roadways and parking areas on the installation. Public transit, rail, and pedestrian networks are also elements of transportation. Street and highway operation are primarily regulated by the Federal Highway Administration and implemented by Texas Department of Transportation. Local street operations and maintenance are managed by the city of San Antonio and JBSA-SAM. Roadway transportation conditions are evaluated using capacity estimates that depend on several factors including number of lanes, width of lanes, roadway gradient, obstructions, bus and truck volumes, and other physical characteristics of the roadway network. Operation of roadway segments and intersections are expressed in terms of Level of Service (LOS), which range from A (best) to F (worst). The LOS is a measure of quality of operational conditions within a traffic stream based on service measures such as speed, travel time, freedom to maneuver, traffic interruptions, and convenience. The city of San Antonio considers LOS A through C to be acceptable, while LOS D through F are unacceptable (San Antonio 2009).

3.8.2 Affected Environment

3.8.2.1 EXISTING CONDITIONS – CORPORATE DISTRICT

Infrastructure and transportation networks within the Corporate and Main Street Districts are the same due to the close proximity of the two districts and data was primarily only available at the JBSA-SAM installation level. Therefore, the Affected Environment is described once and applies to both districts.

Utilities

Electrical System. Electrical power at JBSA-SAM was privatized in 2000 and is currently provided by City Public Service Energy (CPSE). The existing capacity of the electrical system is 90 megawatts while the current demand is 36 megawatts, which is sufficient to meet existing and anticipated future electricity needs. CPSE sources power from a variety of sources including coal plants, natural gas plants, and wind power facilities. Power is distributed to various facilities at JBSA-SAM via overhead and buried powerlines owned by CPSE and metered at individual facilities. There are 80,000 linear ft of overhead utility powerlines within the Corporate District, which are subject to damage by severe weather and other accidents. Although the condition of the electrical distribution system at JBSA-SAM is considered adequate, occasional power outages are caused by issues at the circuit/facility level. There is an ongoing project to replace the aging main electrical transmission line and overhead high-voltage electrical lines that have passed their life cycle period (JBSA 2017a, JBSA 2018a).

Water Supply. Potable water at JBSA-SAM is supplied by five on-installation wells (Nos. 1, 2, 5, 6, and 7). These five wells produce a maximum of 9.25 million gallons per day (MGD) from the artesian zone of the Edwards Aquifer. Once pumped, the well water is chemically treated using chlorine, fluoride, and phosphate (a corrosion inhibitor) at one of the two water treatment plants at the installation and then distributed. The portion of the water system owned and operated by JBSA-SAM, who maintains well pumping rights, is considered in good condition. As of 2017, the average daily water consumption at JBSA-SAM was 2.14 MGD with a peak water consumption of 5.18 MGD. The installation is capable of storing 2.56 million gallons of potable water and maintains approximately 421,740 ft of water distribution and transmission lines (JBSA 2018a).

The majority of the water supply system at JBSA-SAM has been privatized and is managed by American Water. A portion of the water system is privatized under the San Antonio Water System (SAWS), who provides recycled water at 17 locations within JBSA-SAM. Recycled water is used for irrigation of golf courses, watering parade fields, and in cooling towers. In total, there are approximately 24,000 linear ft of recycled water lines throughout the installation (JBSA 2018a).

Wastewater System. The wastewater collection system at JBSA-SAM consists of approximately 262,000 linear ft of main pipelines and is routed through 17 connections with SAWS. Wastewater pipelines at the installation consist of terra cotta, concrete, cast iron, asbestos concrete, and polyvinyl chloride pipe in various diameters ranging from 6 to 48 inches. Wastewater collected through the system, managed by American Water under the privatization contract, is delivered via lift stations into sewer mains at 22 locations that are owned and maintained by SAWS. The wastewater system at JBSA-SAM operates at 64.3 percent capacity of 2.02 MGD maximum. No wastewater is treated within the installation boundaries (JBSA 2018a).

JBSA-SAM currently maintains wastewater discharge permits and operates under a Federal Acquisition Regulation Part 41 contract for utilities connecting with SAWS at 26 points around the installation. The requirements of the permit include sampling for inorganic chemicals, fats, oils and grease, pH, temperature, solids, biochemical oxygen demand, and total suspended solids at several manholes where wastewater leaves the installation and enters the SAWS system. A 2008 review of sewage flows indicated that the average dry-weather flows at the installation are approximately 20 percent of peak pipe capacity (JBSA 2018a).

Stormwater System. In accordance with the Clean Water Act (33 USC §§ 1251–1387) and implementing regulation, JBSA-SAM is a regulated small municipal separate storm sewer system (MS4) and is required to have coverage under the NPDES for stormwater discharges. JBSA-SAM has a stormwater management program, designed to reduce the discharge of pollutants, and maintains a MS4 permit. Stormwater at JBSA-SAM drains primarily to Salado Creek, which runs north to south through the eastern portion of the installation and drains into the San Antonio River. The western portion of JBSA-SAM is drained by the Alamo Ditch, a tributary of the San Antonio River. The southern and central portions of the installation drain into the MS4 owned by the city of San Antonio. The stormwater infrastructure within the perimeter of JBSA-SAM is owned and operated by the installation and is in adequate condition (JBSA-SAM 2014, JBSA 2018a).

Natural Gas. Natural gas at JBSA-SAM was privatized in September 1999 and is now provided by CPSE, who owns and maintains the underground gas distribution lines throughout the installation. The peak natural gas usage at JBSA-SAM is 600,000 cubic ft per minute, while the average usage is 46,539 cubic ft per minute and the annual average is 558,472,000 cubic ft per year. Underground gas lines are primarily located along roadways and in residential areas (JBSA 2018a).

Liquid Fuel. JBSA-SAM has aboveground and underground storage tanks that store jet A fuel, diesel, and gasoline. The current fuel capacity at JBSA-SAM is 60,000 gallons, which includes 20,000 gallons of jet A fuel, 10,000 gallons of diesel, and 30,000 gallons of gasoline. The 30,000 gallons of gasoline is stored in one AST within the Corporate District located on the corner of Wilson Way and Winfield Scott Road that was built in 1993. There are four other liquid fuel storage tanks located elsewhere throughout the installation. The current fuel supply is sufficient to support operations at the installation. However, diesel and automotive fuel dispensing capabilities are routinely jeopardized by ground dispenser pump failures. Although the mission at JBSA-SAM can still be completed, upgrades to the fuel distribution system are required to prevent pump failures and support mission expansion (JBSA 2018a).

Communications. JBSA-SAM has over 96,000 linear ft (18 miles) of underground copper telephone communications cabling and 131,000 linear ft (25 miles) of underground fiber optic cabling to support secure telephone and data communications throughout the installation. JBSA-SAM owns the infrastructure, while private service providers manage and maintain the communications system. Communications for voice, video, and data have been expanded to meet USAF's Unified Communications objective and all existing communications systems are adequate to meet mission needs (JBSA 2018a).

Solid Waste. All municipal solid waste from JBSA-SAM is collected and taken off-installation by private contract disposal services. Solid waste is disposed of at a certified TCEQ solid waste landfill. For 2009, JBSA-SAM produced an average of 29.6 tons of solid waste daily. The majority of solid waste from JBSA-SAM is taken to the Waste Management Covel Gardens Landfill approximately 13 miles southwest of the installation. The landfill is a 502-acre, permitted facility and is estimated to remain in operation until 2027 (JBSA-SAM 2009).

Construction and demolition wastes are generated from demolition, construction, and renovation activities. Quantities of construction and demolition wastes generated are dependent on the amount of demolition, construction, and renovation occurring. Construction and demolition debris typically consist of concrete, wood, metals, gypsum wallboard, insulation materials, asphalt, masonry, brick, roofing material, pipe, wire, rock, rubble, soil, paper, cardboard, plastics, glass, carpet and padding, and related equipment and fixtures. Solid waste from demolition and construction is manifested and taken to a certified TCEQ landfill by the construction contractor (JBSA 2018c).

In 2017, JBSA implemented a mandatory recycling program and requires paper products, cardboard, newspaper, metal, plastic, glass, used oil, lead acid batteries, pallets, and toner cartridges to be recycled (USAF 2017). Contract specifications for construction contractors at JBSA include guidelines for recycling and disposal of construction and demolition waste. JBSA has a goal for a construction and demolition waste diversion rate of 99.4 percent. Typical

recyclable construction and demolition wastes include uncontaminated concrete and asphalt and scrap metals (JBSA 2018c).

Transportation

Gate Access. The Corporate District is in the vicinity of three access control points (ACPs). The operating ACPs include Walters Gate just southeast of the district along Winfield Scott Road, which turns into N Walters Street off of the installation, and Harry Wurzbach East Gate in the upper east portion of the district along Harry Wurzbach Road. Both gates are open 24 hours a day and are open to all vehicles (JBSA 2020b). Pershing Gate is located on Old Austin Road opposite Harry Wurzbach East Gate on the western perimeter of the Corporate District and remains closed to all traffic. Walters Gate, which is one of two installation ACPs that can be accessed by commercial vehicles, was upgraded in 2018 and included the construction of new guardhouse and queueing lanes on Winfield Scott Road, south of Wilson Street. However, Winfield Scott Road north of Wilson Street remains unimproved and the series of intersections along the road is not clear to drivers. Because of the design of Winfield Scott Road, there is no direct access to the parade field from Walters Gate. Vehicle processing capacity at each ACP with access to the Corporate and Main Street Districts is provided by JBSA-SAM, as summarized in **Table 3-8**. All ACPs for which information is available are operating beyond their capacity.

Table 3-8. Processing Capacity for Corporate and Main Street ACPs

ACP	Capacity/Processing Hourly Rate (# of vehicles)	Peak Hour Demand (# of vehicles)	Headroom (# of vehicles)
Corporate District			
Walters Gate	750	1,662	-912
Harry Wurzbach East Gate	750	1,190	-440
Pershing Gate	450	N/A	N/A
Main Street District			
Wilson Gate	375	379	-4
New Braunfels Gate	450	N/A	N/A

Source: JBSA 2018a

Additional traffic information has been collected by the Texas Department of Transportation, who collects traffic count data for the state of Texas using traffic monitoring software and publishes their findings on the Traffic Count Database System. **Table 3-9** represents traffic count data for key locations on roadways in which ACPs are located. The data indicate that Walters Gate is the busiest ACP with access to the Corporate District.

Table 3-9. 2018 Traffic Counts for Corporate and Main Street District ACPs

ACP	Traffic Count Location	Annual Average Daily Traffic (2-way)
Corporate District		
Walters Gate	N. Walters Street	18,235
Harry Wurzbach East Gate	Harry Wurzbach Road	3,235
Pershing Gate	Old Austin Road	1,892

ACP	Traffic Count Location	Annual Average Daily Traffic (2-way)
Main Street District		
Wilson Gate	Cunningham Avenue	17,183
New Braunfels Gate	N. New Braunfels Avenue	767

Source: TxDOT 2018

On-Installation Roadways. The primary east-west roadways within the Corporate District include Old Austin Road, Worth Road, Schofield Road, and Henry T. Allen Road. The primary north-south roadways include Stanley Road and Dickman Road. The south central area of the installation, where portions of the Corporate District are located, is the most heavily trafficked area within the installation. As of 2007, the roadways within the Corporate District are operating at an acceptable LOS, generally C or higher (JBSA-SAM 2009). A condition of good, fair, or poor has been assigned to all pavement within the Corporate District and is based on a street's condition and presence of curbs/gutters, trees, pedestrians buffers, planting strips, and sidewalks. In the Corporate District, there is little roadway pavement in poor condition but the majority of pavement is in fair condition and requires significant maintenance or upgrades to be considered in good condition (JBSA 2017a).

Off-Installation Roadways. JBSA-SAM is within a well-developed urban roadway system composed of all levels of roads. The installation is bounded by Interstate (I-) 35 on the south and east, Broadway Street to the west, and Harry Wurzbach Highway and Rittiman Road to the north. Several arterial roadways, including North Walters Street, North New Braunfels Avenue, Harry Wurzbach Road, and Binz-Engleman Road connect the installation with surrounding highways and communities in all directions. The *City of San Antonio Thoroughfare Plan* classifies I-35 as a freeway in the vicinity of JBSA-SAM (San Antonio 2019b). Walters Gate is north of I-35 along N. Walters Street, which can be accessed using exit 159b. N. Walters Street is a six-lane road with four incoming (northbound) lanes and two outgoing (southbound) lanes. Harry Wurzbach Road (Old Austin Road on the installation), classified as a secondary arterial roadway, bisects the Corporate District and follows the majority of the northwest installation perimeter. Off-installation roadways are generally LOS C or higher; however, intermittent gate closures result in choke point during peak traffic hours that cause traffic to backup for several blocks (JBSA 2018a).

Parking. The Corporate District currently contains 7,507 parking spaces which is sufficient to support the existing parking demand. All parking areas are in lots and there is no street parking. 1,925 parking spaces (25 percent) are considered to be in parking lots with pavement of poor condition (JBSA 2017a).

Pedestrian Facilities. The primary roadways within the Corporate District at JBSA-SAM include concrete sidewalks and crosswalks where appropriate; however, the existing sidewalks have deteriorated over time and require improvements (JBSA 2017a). Pedestrian facilities along residential streets and minor roadways are uncommon. The Physical Training trail within the Corporate District does not connect with the Physical Training trail within the Main Street District and remains an incomplete pedestrian network. Additionally, the sidewalk network surrounding the Martin Luther King Memorial is lacking perimeter sidewalks and requires improvement.

The Corporate District ADP outlines a district planning vision that includes promoting walkable neighborhoods and campuses, and providing modern, multi-use transportation networks. To achieve the goals of the planning vision, the existing pedestrian network would need to be improved along with the addition of bicycle and other multifunctional transportation options (JBSA-SAM 2017a).

Public Transportation. VIA, the metropolitan transit system, services the city of San Antonio with bus routes throughout the city and surrounding areas. There are numerous bus routes with stops adjacent to JBSA-SAM including routes 9 and 10 located west of the installation; routes 630 and 17 located east of the installation; routes 8, 509, and 647 located north of the installation; and routes 17, 20, 21, and 515 located south of the installation. Bus route 16 services the installation with six stops along Winfield Scott Road, William Hardee Road, Garden Road, and Wilson Street within the installation. Several bus routes include stops at Walters Gate (VIA 2016). There is no public rail system within the city of San Antonio and the closest public airport to the installation is the San Antonio International Airport approximately 5 miles north of JBSA-SAM.

3.8.2.2 EXISTING CONDITIONS – MAIN STREET DISTRICT

Utilities

An overview of the infrastructure system at JBSA-SAM is provided in **Section 3.8.2.1**. Features unique to the Main Street District are noted as follows.

Electrical System. A standby diesel engine within the Main Street District is located in the western portion of the district. There are 50,000 linear ft of overhead utility powerlines within the Main Street District (JBSA 2017b).

Water Supply. JBSA-SAM draws potable water from the Edwards Aquifer. The southwest water treatment plant is located on an unnamed road in the southwestern corner of the Main Street District, north of Nika Street and west of Pine Street. A potable water pump house (Facility 2190) for well 7, a potable water pump house (Facility 2194) for wells 1 and 2, temporary potable water storage containers, a fluoride tank, and a phosphate tank are also located in the area (JBSA 2018a).

Stormwater System. Most of the Main Street District drains into the Alamo Ditch, a tributary of the San Antonio River. There are 17 stormwater outfalls in the western portion of the Main Street District that drain directly into a small tributary of the Alamo Ditch. Additionally, some southern areas of the Main Street District may drain into the MS4 owned by the city of San Antonio (JBSA-SAM 2014).

Liquid Fuel. There are currently no fuel storage tanks within the Main Street District (JBSA 2018a).

Transportation

Gate Access. The Main Street District can be accessed by Wilson Gate off of Cunningham Avenue, which turns into Wilson Street within the western portion of the district. Wilson Gate is open from 6 a.m. to 1 p.m. for all traffic and 1 p.m. to 9 p.m. for outbound traffic only. Wilson

Gate is closed Saturdays, Sundays, and all holidays. Additionally, New Braunfels Gate is on the southern perimeter of the Main Street District, on N. New Braunfels Avenue, and is open between 6 a.m. and 10 p.m. daily. The data summarized in **Table 3-9** indicate that Wilson Gate is the busiest ACP with access to the Main Street District. **Table 3-8** indicates that Wilson Gate is operating just above its processing capacity, and the peak hour demand for New Braunfels Gate is unknown (JBSA 2020b, JBSA 2018a).

On-Installation Roadways. The primary east-west roadways within the Main Street District include Artillery Post Road, Stanley Road, and Wilson Street. The primary north-south roadways are N. New Braunfels Avenue and Liscum Road. As of 2007, roadways within the Main Street District are operating under desirable traffic conditions at LOS A for most segments.

Off-Installation Roadways. State Road 368, also referred to as Broadway Street, is a primary arterial roadway adjacent to the western perimeter of the installation. Wilson Gate can be accessed from Cunningham Avenue, which intersects State Road 368.

Parking. The Main Street District currently contains 3,642 parking spaces, which is sufficient to support the existing parking demand. Parking includes 3,586 lot spaces and 56 on-street spaces. 415 parking spaces (11 percent) throughout the Main Street District are in poor condition and require significant upgrades (JBSA 2017b).

Pedestrian Facilities. The Main Street District ADP outlines a district planning vision that includes improving existing streets to make them safer for pedestrian use, providing a more walkable community, and developing connected greenspace through the integration of walking trails throughout the district. The primary roadways within the Main Street District include intermittent concrete sidewalks and crosswalks; however, the existing sidewalks have deteriorated over time and require improvements. Pedestrian facilities along residential streets and minor roadways are uncommon. The physical training trail in the northern portion of the Main Street District does not connect with the physical training trail within the Corporate District and remains an incomplete pedestrian network (JBSA 2018a).

Public Transportation. There are currently no public transportation routes within the Main Street District. Several VIA bus routes include stops within the vicinity of Wilson Gate. There are no public rail services in the city of San Antonio and the closest airport to the installation is the San Antonio International Airport approximately 5 miles north.

3.9 Safety

3.9.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety addresses both worker and public health and safety during and following demolition and construction. This section addresses the well-being, safety, and health of members of the public, contractors, and USAF personnel associated with the implementation of the Proposed Action.

3.9.2 Affected Environment

3.9.2.1 EXISTING CONDITIONS – CORPORATE DISTRICT

Site safety requires adherence to regulatory requirements imposed for the benefit of employees and the public. It includes the implementation of engineering and administrative practices that aim to reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers, to include contractors, are safeguarded by numerous DoD and USAF regulations designed to comply with standards issued by the Occupational Safety and Health Administration (OSHA) and USEPA. These standards specify health and safety requirements, the amount and type of training required for workers, the use of personal protective equipment (PPE), administrative controls, engineering controls, and permissible exposure limits for workplace stressors.

Contractors performing construction activities on USAF installation, including JBSA-SAM, are responsible for following federal OSHA regulations and are required to conduct these activities in a manner that does not increase risk to workers or the public. Construction contractors are responsible for reviewing potentially hazardous workplace conditions; monitoring worker exposure to workplace chemical (e.g., asbestos, lead, hazardous substances), physical (e.g., noise propagation, falls), and biological (e.g., infectious waste, wildlife, poisonous plants) agents, and ergonomic stressors; and recommending and evaluating controls (e.g., preventive, administrative, engineering, PPE) to ensure exposure to personnel is eliminated or adequately controlled. Additionally, employers are responsible for ensuring a medical surveillance program is in place to perform occupational health physicals for those workers subject to the use of respiratory protection, engaged in hazardous waste work, asbestos, lead, or other work requirement medical monitoring.

The USAF has policies and regulations developed to protect workers associated with USAF activities. AFI 91-202, *US Air Force Mishap Prevention Program*, “establishes mishap prevention program requirements, assigns responsibilities for program elements, and contains program management information.” To meet the goals of minimizing loss of USAF resources and protecting military personnel, mishap prevention programs address groups at increased risk for mishaps, injury, or illness; a process for tracking incidents; funding for safety programs; metrics for measuring performance; safety goals; and methods to identify safety BMPs.

3.9.2.2 EXISTING CONDITIONS – MAIN STREET DISTRICT

Safety conditions within the Main Street District are the same as those described under **Section 3.9.2.1**.

3.10 Hazardous Materials and Wastes

3.10.1 Definition of the Resource

Hazardous Materials, Hazardous Wastes, and Petroleum Products. Hazardous materials are defined by 49 CFR § 171.8 as hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR § 172.101), and materials that meet the defining criteria for hazard classes and divisions in 49 CFR § 173. Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA) at 42 USC § 6903(5), as amended by the Hazardous and Solid Waste

Amendments, as “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.”

Petroleum products include crude oil or any derivative thereof, such as gasoline, diesel, or propane. They are considered hazardous materials because they present health hazards to users in the event of incidental releases or extended exposure to their vapors.

Evaluation of hazardous materials and wastes focuses on the storage, transportation, handling, and use of hazardous materials, as well as the generation, storage, transportation, handling, and disposal of hazardous wastes. In addition to being a threat to humans, the improper release or storage of hazardous materials, hazardous wastes, and petroleum products can threaten the health and well-being of wildlife species, habitats, soil systems, and water resources.

Toxic Substances. Toxic substances are substances that might pose a risk to human health and are addressed separately from hazardous materials and hazardous wastes. A toxic substance is a chemical or mixture of chemicals that may present an unreasonable risk of injury to health or the environment. These substances include asbestos-containing materials (ACMs), lead-based paint (LBP), and polychlorinated biphenyls (PCBs), all of which are typically found in older buildings and utilities infrastructure. The USEPA is given authority to regulate these substances by the Toxic Substances Control Act (15 USC § 53).

Asbestos is regulated by USEPA under the Clean Air Act; Toxic Substances Control Act; and Comprehensive Environmental Response, Compensation, and Liability Act. USEPA has established that any material containing more than 1 percent asbestos by weight is considered an ACM. USEPA has implemented several bans on various ACMs between 1973 and 1990, so ACMs are most likely in older buildings (i.e., constructed before 1990). ACMs are generally found in building materials such as floor tiles, mastic, roofing materials, pipe wrap, and wall plaster. LBP was commonly used prior to its ban in 1978; therefore, any building constructed prior to 1978 may contain LBP. PCBs are man-made chemicals that persist in the environment and were widely used in building materials (e.g., caulk) and electrical products prior to 1979. Structures constructed prior to 1979 potentially include PCB-containing building materials.

Environmental Contamination. The Comprehensive Environmental Response, Compensation, and Liability Act governs the response or cleanup actions to address releases of hazardous substances, pollutants, and contaminants into the environment and includes federal facilities such as JBSA-SAM. The Defense Environmental Restoration Program was formally established by Congress in 1986 to provide for the cleanup of Department of Defense property at active installations, Base Realignment and Closure installations, and formerly used defense sites throughout the United States and its territories. The two restoration programs under the Defense Environmental Restoration Program are the Environmental Restoration Program (ERP) and the Military Munitions Response Program (MMRP). The ERP addresses contaminated sites while the MMRP addresses nonoperational military ranges and other sites suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituents. Each site

is investigated and appropriate remedial actions are taken under the supervision of applicable federal and state regulatory programs. When no further remedial action is necessary for a given site, the site is closed and it no longer represents a threat to human health.

Radon. Radon is a naturally occurring odorless and colorless radioactive gas found in soils and rocks that can lead to the development of lung cancer. Radon tends to accumulate in enclosed spaces, usually those that are below ground and poorly ventilated (e.g., basements). USEPA established a guidance radon level of 4 picocuries per liter (pCi/L) in indoor air for residences, and radon levels above this amount are considered a health risk to occupants.

3.10.2 Affected Environment

3.10.2.1 EXISTING CONDITIONS – CORPORATE DISTRICT

Hazardous Materials, Petroleum Products, and Hazardous Wastes. JBSA-SAM uses hazardous materials and petroleum products such as liquid fuels (gasoline and diesel), pharmaceuticals, pesticides, and solvents for everyday operations at JBSA-SAM. The use of these hazardous materials and petroleum products results in the generation and storage of hazardous wastes and used petroleum products on the installation. JBSA-SAM is a RCRA Large Quantity Generator (USEPA identification number TX3214020429) (JBSA-SAM 2016a). RCRA Large Quantity Generators generate 1,000 kilograms or more of hazardous waste, or more than 1 kilogram of acutely hazardous waste, per month.

USAF installations manage hazardous materials through AFI 32-7086, *Hazardous Materials Management*, and hazardous wastes through Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*. JBSA has implemented installation-wide pollution prevention and hazardous waste management plans, and a Spill Prevention Control Countermeasures (SPCC) Plan for JBSA-SAM. These plans define roles and responsibilities, address record keeping requirements, and provide spill contingency and response requirements (USACE 2003, JBSA 2016a, JBSA 2016b).

Within the Corporate District, hazardous materials, hazardous wastes, and petroleum products are used, stored, or generated at Buildings 320, 331, 1001, 1070, 2265, 2372, 2375, 2382, 2745, and 2792 (USACE 2003, JBSA 2016b, JBSA 2017b).

Toxic Substances. ACMs on JBSA-SAM are managed in accordance with the JBSA asbestos operating plan and through a database that contains detailed and updated information on surveys and abatement actions. The plan addresses asbestos management practices throughout JBSA. The plan is designed to 1) protect personnel who live and work on JBSA from exposure to airborne asbestos fibers, and 2) ensure JBSA remains in compliance with all USAF, federal, state, and local asbestos regulations. The plan assigns responsibilities, establishes inspection and repair capabilities, and provides repair procedures and personal protection instructions (JBSA 2018d). Facilities constructed prior to 1990 have the greatest potential to contain ACMs in building materials. Of the facilities proposed for demolition under the Proposed Action in the Corporate District, Buildings 325, 518–527, 530–536, 544–554, 558–564, 566, and 2750 were constructed prior to 1990.

The JBSA LBP management plan provides guidance to properly manage LBP within JBSA facilities. The plan is designed to 1) protect personnel who live and work on JBSA from exposure to airborne lead and damaged painted surfaces and 2) ensure JBSA remains in compliance with all USAF, federal, state, and local LBP regulations. The most important line of defense in the protection of human health at JBSA is the dissemination of information regarding the presence of LBP in buildings. The locations of LBP in facilities is communicated to appropriate personnel in order to identify potential hazards and avoid disturbance of affected building materials. (JBSA 2017c). Facilities constructed prior to 1978 have the greatest potential to contain LBPs. Of the facilities proposed for demolition under the Proposed Action in the Corporate District, Buildings 325, 518–527, 530–536, 544–554, 558–564, and 566 were constructed prior to 1978.

Facilities constructed prior to 1979 have the greatest potential to contain PCBs in building material. Older electrical infrastructure, such as light fixtures and surge protectors, within these buildings might also contain PCBs. Of the facilities proposed for demolition under the Proposed Action in the Corporate District, Buildings 325, 518–527, 530–536, 544–554, 558–564, and 566 were constructed prior to 1979.

Environmental Contamination. There are six ERP sites within JBSA-SAM. Four of the sites are former construction waste landfills, and a parcel between Winfield Scott Road and Camp Travis Road is a previous trichloroethylene plume, which has been remediated. The remaining site, which consists of munitions debris from the small arms range, is south of Petroleum Drive near the intersection of Holbrook Road. There are no active ERP or MMRP sites within the Corporate District (JBSA 2018a). Therefore, there are no concerns related to environmental contamination within the Corporate District.

Radon. Bexar County has a low potential for radon accumulation greater than 2 pCi/L within buildings (USEPA 2019a). Therefore, there are no concerns related to the proposed activities within the Corporate District.

3.10.2.2 EXISTING CONDITIONS – MAIN STREET DISTRICT

Existing conditions described for JBSA-SAM in **Section 3.10.2.1** also apply to the Main Street District.

Hazardous Materials, Petroleum Products, and Hazardous Wastes. Within the Main Street District, hazardous materials, hazardous wastes, and petroleum products are used, stored, or generated at Buildings 16,143, 247, 268, 2003, 2186, 2190, 2225, 2244, 2272, and 4019 (USACE 2003, JBSA 2016a, JBSA 2017b).

Toxic Substances. Of the facilities proposed for demolition under the Proposed Action in the Main Street District, Buildings 260 and 261 were constructed prior to 1978. Therefore, these buildings could contain ACMs, LBP, and PCBs.

Environmental Contamination. There are no active ERP or MMRP sites within the Main Street District (JBSA 2018a). Therefore, there are no concerns related to environmental contamination within the Main Street District.

Radon. Bexar County has a low potential for radon accumulation greater than 2 pCi/L within buildings (USEPA 2019a). Therefore, there are no concerns related to the proposed activities within the Main Street District.

4. Environmental Consequences

4.1 Introduction

Section 4 of this EA presents criteria for evaluating potential impacts for resource areas (**Section 4.1**) and a general analysis of the environmental impacts from the representative projects (**Section 4.2**) analyzed under the Proposed Action in this EA. The general analysis identifies impacts on each resource area associated with construction, infrastructure improvement, facility demolition, and natural infrastructure management projects with a focus on avoiding those areas that are constraints to development. The general analysis of potential activities is intended to provide a summary of impacts, but alone does not provide the framework to adequately assess the potential environmental consequences of a single proposed project. Therefore, **Section 4.3** presents a detailed analysis of the environmental impacts from the representative projects under the Proposed Action as described in **Section 2.1**. A general analysis of the environmental effects of the No Action Alternatives is provided in **Section 4.4**.

The specific criteria for evaluating the potential environmental effects of the No Action Alternative or the Proposed Action are discussed in the following text, identified by resource area. The significance of an action is also measured in terms of its context and intensity. The context and intensity of potential environmental effects are described in terms of duration, whether they are direct or indirect, the magnitude of the impact, and whether they are adverse or beneficial, and are summarized as follows:

- **Short-term or long-term.** In general, short-term impacts are those that would occur only with respect to a particular activity, for a finite period, or only during the time required for construction or installation activities. Long-term impacts are those that are more likely to be persistent or chronic.
- **Direct or indirect.** A direct impact is caused by an action and occurs around the same time and place. An indirect impact is caused by an action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action.
- **Negligible, minor, moderate, or major (significant).** The relative terms are used to characterize the magnitude or intensity of an impact. Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor impact is slight, but detectable. A moderate impact is readily apparent. Major or significant impacts are those that, in their context and due to their magnitude (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR § 1508.27) and, thus, warrant heightened attention and examination for potential means for mitigation or the preparation of an Environmental Impact Statement to fulfill the policies set forth in NEPA.
- **Adverse or beneficial.** An adverse impact is one having unfavorable or undesirable outcomes on the natural or man-made environment. A beneficial impact is one having positive outcomes on the natural or man-made environment.

Best management practices (BMPs) and environmental protection measures are discussed to describe how the level of impact of a project on a resource area could be minimized (see **Section 5.2**). BMPs are actions required by statutes, regulations, or to fulfill permitting requirements that reduce potential impacts. Environmental protection measures are those actions that are used to minimize impacts that are not required as part of statutes, regulations, or to fulfill permitting requirements, but are typically measures taken during design and construction phases of a project to reduce impacts on the environment. None of the BMPs or environmental protection measures described are needed to bring an impact below the threshold or significance. The following text presents the criteria that would constitute a significant environmental impact resulting from implementation of the No Action Alternative (see **Section 4.4**) or the Proposed Action. The same significance criteria are also applied to potential cumulative impacts (see **Section 5**) of implementing the Proposed Action in conjunction with other past, present, and reasonably foreseeable future actions.

4.1.1 Land Use

The significance of potential land use effects is based on the level of land use sensitivity in areas affected by a proposed action and the compatibility of a proposed action with existing conditions. A proposed action could have a significant effect with respect to land use if any of the following were to occur:

- Be inconsistent or in noncompliance with existing land use plans or policies.
- Preclude the viability of existing land use.
- Preclude continued use or occupation of an area.
- Be incompatible with adjacent land uses to the extent that public health or safety is threatened.
- Conflict with planning criteria established to ensure the safety and protection of human life and property.

Land use compatibility is defined as the ability of two or more land uses to coexist without conflict. Examples of conflict include interference of proposed activities with existing activities; insufficient availability of facilities, infrastructure, or resources to safely accommodate a proposed activity; and activities resulting in human health and safety issues because of poor siting. Frequently, compatibility between land uses exists in varying degrees based on the frequency, duration, and intensity of a proposed activity. Typically, land use designations preclude proposed activities from being located within a designation that would be incompatible with current or proposed uses. However, through consideration of the planning districts, future planning areas, and form-based planning, an activity could be collocated within a land use designation that it is not normally associated with based on evaluation of its compatibility with nearby activities, including consideration of the availability of facilities and infrastructure, safety of personnel, and sensitive environments. Potential impacts on land use compatibility are based on qualitative assessments. Land disturbance within a given land use designation is not considered a land use impact under these criteria unless the disturbance results from a project that is incompatible with land use designations.

4.1.2 Air Quality

Impacts on air quality would be significant if installation development were to exceed the applicable General Conformity Rule *de minimis* level thresholds. Based on compliance with the NAAQS, the General Conformity Rule is potentially applicable in Bexar County to emissions of NO_x and VOC, and the applicable *de minimis* level threshold for these pollutants is 100 tpy. While the General Conformity Rule is not applicable to emissions of CO, SO₂, PM₁₀, and PM_{2.5}, 100 tpy also can be used as a surrogate to determine the level of impacts under NEPA. Should emissions of an attainment pollutant exceed 100 tpy, further investigation would be performed to ensure the new emissions would not interfere with Bexar County's ability to maintain attainment for that NAAQS. Installation development also would be significant if the emissions from stationary sources (e.g., boilers, furnaces, electricity generators) were to increase JBSA-SAM's potential to emit above major source thresholds. Lastly, significant impacts would occur if installation development meaningfully contributed to the potential effects of global climate change.

4.1.3 Water Resources

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

- Substantially reduce water availability or supply to existing users.
- Overdraft groundwater basins.
- Exceed safe annual yield of water supply sources.
- Substantially affect water quality.
- Endanger public health or safety by creating or substantially worsening health or flood hazard conditions.
- Threaten or damage unique hydrologic characteristics.
- Violate established laws or regulations adopted to protect water resources or public welfare.

4.1.4 Noise

An analysis of the potential effects associated with noise typically evaluates potential changes to the existing acoustical environment that would result from implementation of a proposed action. Potential changes in the acoustical environment can be beneficial (i.e., they reduce the number of sensitive receptors exposed to unacceptable noise levels or reduce the ambient sound level), negligible (i.e., the total number of sensitive receptors to unacceptable noise levels is essentially unchanged), or adverse (i.e., they result in increased sound exposure to unacceptable noise levels or ultimately increase the ambient sound level). Effects would be considered significant if noise levels were to be unacceptable to multiple sound receptors or violate noise regulations.

The main issues concerning noise effects on humans are physiological effects (e.g., hearing loss and non-auditory effects), behavioral effects (e.g., speech or sleep interference and performance effects), and subjective effects such as annoyance. A noise analysis considers

potential effects on identified noise sensitive receptors located near a proposed action. The major sources of noise, their contribution to the overall noise environment, and maximum sound level were estimated for comparison to local noise control standards.

4.1.5 Geological Resources

Effects on geologic resources are evaluated based on their potential impacts on topography, geology, soils, and geologic hazards. Impacts might arise from removal of sensitive soils during construction, increased wind and water erosion because of construction and operations, and changes to unique geologic features and the geologic environment resulting in modifications in topography and increased hazards. An effect might be considered adverse if a proposed action results in long-term changes to the environment or loss of unique and sensitive soils or geologic features. A proposed action could have a significant effect with respect to geologic resources if the following were to occur:

- Destruction and substantial loss of prime and unique farmlands.
- Substantial destabilization of soils.
- Changes noticeably affecting local and regional geology.
- Removal of unique geologic features.

4.1.6 Biological Resources

The biological resources analysis discusses impacts from construction, demolition, and the operation of new facilities and infrastructure on vegetation, wildlife, and protected and sensitive species from the Proposed Action and its alternatives. Evaluation of impacts on biological resources considers whether an action would result in a direct injury or mortality of an individual, particularly a protected or sensitive species. Each species has unique, fundamental needs for food, shelter, water, and space and can be sustained only where their specific combination of habitat requirements are available. Removal of sustaining elements of a species' habitat impacts its ability to exist. Therefore, the evaluation of impacts on biological resources also is based on whether an action would cause habitat displacement resulting in reduced feeding or reproduction, removal of critical habitat for sensitive species, and/or behavioral avoidance of available habitat as a result of noise or human disturbance. The level of impacts is based on (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to the proposed activities, and (4) the duration of ecological ramifications. Impacts on biological resources would be considered significant if species or special habitats would be adversely affected over large areas, or disturbances would cause reductions in population size or distribution of a species of special concern.

4.1.7 Cultural Resources

Impacts on cultural resources result from actions that change culturally valued elements of a resource or restrict access to cultural resources. Impacts on cultural resources may be short-term or long-term and direct or indirect. Direct impacts can result from physically altering, damaging, or destroying all or part of a resource. Indirect impacts can occur from alterations to characteristics of the surrounding environment that contribute to the importance of the resource

or introducing visual, atmospheric, or audible elements that are out of character with the property or that alter its setting or feeling. Impacts would be considered major or significant if the physical alterations or elemental changes are substantial. Actions may have beneficial impacts if they improve the preservation of cultural resources or their historic settings.

JBSA-SAM is coordinating the analysis in this EA with their review under Section 106 of the NHPA, which requires federal agencies to assess the effects of their undertakings on historic properties in consultation with the Texas SHPO. JBSA-SAM may reach a determination of *no historic properties affected*, *no adverse effect on historic properties*, or *adverse effect on historic properties*. According to 36 CFR § 800.5, “an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the [NRHP] in a manner that would diminish the integrity of the [property].” If an undertaking is determined to have an adverse effect, JBSA-SAM must implement measures to avoid, minimize, or mitigate the effect. JBSA-SAM’s Section 106 determinations are presented in this section along with the analysis of impacts under NEPA.

4.1.8 Infrastructure and Transportation

Impacts on infrastructure are evaluated based on their potential to disrupt or improve existing infrastructure service levels and create additional needs. An impact could be significant if a proposed action could result in any of the following:

- Exceed capacity of a utility.
- Create a long-term interruption in the operation of a utility.

Impact analysis for transportation considers changes to roadway and intersection LOS, and travel patterns and accessibility (i.e., ease of drivers to reach a desired destination). An impact on transportation could be considered significant if a proposed action resulted in any of the following:

- Substantial decline in LOS conditions.
- Reduced traffic safety leading to increased risk of vehicular accidents.
- Substantial and permanent changes to roadway accessibility.

4.1.9 Safety

Any increase in safety hazards would be considered an adverse impact on safety. A Proposed Action could have a significant impact with respect to health and safety if the following were to occur:

- Substantially increase risks associated with the safety or construction and installation personnel, contractors, or the local community.
- Hinder the ability to respond to an emergency.
- Introduce a new health or safety risk for which the installation is not prepared or does not have adequate management and response plans in place.

4.1.10 Hazardous Materials and Wastes

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

4.2 General Environmental Consequences of the Proposed Action by Resource Area

4.2.1 Land Use

Long-term, minor to moderate, beneficial impacts on land use in the Corporate and Main Street Districts would occur from the Proposed Action. Construction and operation of the proposed projects would be generally consistent with existing land use designations and operational support functions. Projects would be implemented in accordance with the Corporate and Main Street District ADPs and the 2018 JBSA IDP goals for consolidating functional land uses within these districts for optimized land use efficiency. Beneficial impacts on land use would also result from efficient use of installation land through demolition of aging, underused facilities and consolidation of like functions. None of the proposed projects would result in an impact on off-installation land uses.

4.2.2 Air Quality

Short-term, minor, adverse impacts on air quality would occur during construction activities associated with the representative projects under the Proposed Action. Short-term emissions of criteria pollutants would be produced from on-road (e.g., employee vehicles, deliveries) and off-road (e.g., backhoes, dozers, portable generators) vehicles or equipment associated with construction and demolition (e.g., excavating, paving, site grading activities) for each representative project. Such emissions would be temporary and would only occur when construction and demolition took place.

Sources of construction air emissions would include the operation of heavy equipment, workers commuting and from project areas in their personal vehicles, heavy duty diesel vehicles hauling materials and debris to and from project areas, and ground disturbance activities. Construction activities would also generate particulates such as fugitive dust from ground-disturbing activities and from the combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during initial site preparation activities and would vary from day to day depending on the work phase, level of activity, and prevailing weather conditions. BMPs and environmental control measures (e.g., wetting the ground surface) would be incorporated into construction and demolition activities to minimize fugitive dust emissions. Additionally, work vehicles would be well-maintained and use diesel particulate filters to reduce emissions of criteria pollutants.

The USAF's Air Conformity Applicability Model (ACAM), version 5.0.13, was used to estimate air emissions from each representative project (provided in **Appendix B**). **Table 4-1** presents

total air emissions per year from implementation of the Proposed Action. To estimate air emissions from implementing the representative projects, the construction and demolition phases for each project were assumed to occur in the year the project would be implemented, which is listed in **Table 1-1. Section 4.3** provides estimated implementation air emissions for each of the individual representative projects and identifies the assumptions used to develop those estimates. Construction and mobile emissions sources resulting from the Proposed Action would not contribute to JBSA-SAM’s potential to emit above source thresholds. Therefore, any potential mobile emissions sources would not be added to the air emissions inventory at the installation and would not affect any applicable synthetic minor permit.

Table 4-1. Annual Construction Air Emissions from Implementing the Representative Projects

Year	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}
2022	0.327	1.988	2.018	0.004	5.533	0.089	464.0
2023	4.331	10.679	11.838	0.030	93.933	0.425	2,711.0

Notes: All values are in tpy. CO_{2e} = carbon dioxide equivalent

Long-term, minor, adverse and beneficial impacts would occur from operational air emissions associated with the representative projects under the Proposed Action. Projects C1 and C2 would add new building space to JBSA-SAM, and new air emissions would be produced from heating the new space with natural gas-fired furnaces. However, Projects I1, D1, I2, and D2 would offset these new emissions through a reduction in heated interior space. Projects N1 and N2 would not produce any operational air emissions. **Table 4-2** summarizes the annual net change in operational air emissions from the combination of heating new building space and the reduction in heated interior space. **Section 4.3** provides estimated operational air emissions for each of the representative projects. As demonstrated in **Table 3-3**, JBSA-SAM is sufficiently below major source thresholds to absorb the new operational air emissions, which would be less than 1.5 tpy for each criteria pollutant (see **Table 4-2**). As such, the installation would not emit above major source thresholds.

Table 4-2. Annual Change in Operational Air Emissions from the Representative Projects

Year	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}
2023	<0.001	-0.009	-0.007	<0.001	-0.001	-0.001	-10.2
2024	0.078	1.436	1.306	0.009	0.108	0.108	1,710.4
Final Net	0.078	1.427	1.299	0.009	0.107	0.107	1,700.2

Note: All values are in tpy.

As stated in **Section 3.2.2**, Bexar County is designated by USEPA as in unclassified/attainment for all criteria pollutants except 8-hour O₃, which is designated as marginal nonattainment. As such, the general Conformity Rule is potentially applicable to emissions of NO_x and VOCs. For NO_x and VOCs, 100 tpy is the *de minimis* level threshold for new emissions to trigger a conformity analysis. As demonstrated in **Tables 4-1** and **4-2**, the annual new emissions of each of these pollutants would be less than 100 tpy; therefore, the requirements of the General Conformity Rule are not applicable. JBSA-SAM would be required to follow state VOC and NO_x regulations outlined in 30 TAC 115 and 30 TAC 117. New stationary emissions sources

(e.g., boilers, generators, paint booths) that may result from the implementation of the representative projects of the Proposed Action would be added to JBSA-SAM's air emissions inventory to ensure the installation's potential to emit above source thresholds stays within the requirements of applicable synthetic minor permits. The installation's air quality manager would be notified of any new air emissions sources for tracking purposes.

Climate Change and Greenhouse Gases. Long-term, negligible, adverse impacts would result because the short-term emissions from construction and demolition would be minimal and of limited duration, and operational emissions would also be expected to be minimal. The representative projects at JBSA-SAM would produce GHGs from construction and demolition associated with each project. Construction would produce approximately 464 and 2,711 tons of CO₂e during 2022 and 2023, respectively. Once the representative projects are completed, an additional approximate 1,700 tons of CO₂e from pre-construction conditions would occur per year. By comparison, 1,700 tons of CO₂e is approximately the GHG footprint of 3,826,834 miles driven by an average passenger vehicle or 178 homes' energy use for 1 year (USEPA 2020). Therefore, these emissions would not meaningfully contribute to the potential effects of global climate change.

Ongoing changes to climate patterns in the Southern Great Plains region are described in **Section 3.2.2**. These changes are unlikely to affect USAF's ability to implement installation development at JBSA-SAM. Because climate change could increase the frequency and intensity of major storm events such as hurricanes and tornadoes in the region, reduction of impervious surfaces for some of the representative projects in the Corporate and Main Street Districts would serve as climate change resiliency actions to lessen potential flood damage if a severe flooding event were to occur.

4.2.3 Water Resources

Short- and long-term, negligible, adverse impacts on water resources would be expected as a result of the Proposed Action.

Groundwater. Long-term, negligible, adverse impacts on groundwater resources would occur from the Proposed Action. Demolition and construction associated with the Proposed Action (i.e., minor grading, excavation, and foundation preparations for proposed building and infrastructure) would create the potential for soil erosion in the project area, but would not affect the local groundwater table. Because no increases in personnel are expected, withdrawal rates from the Edwards Aquifer would not be expected to change.

Based on existing soil conditions (moderate to low permeability clays) and depth to the groundwater table, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from construction equipment would not be expected to reach the groundwater table given prompt response to potential discharges. Additionally, onsite project personnel would be responsible for ensuring that equipment is in good operating order to reduce the potential for leaks, and immediately handle any potential spills.

Surface water runoff would be managed through drainage control measures, with no direct pathways to groundwater recharge points. Through the implementation of BMPs and the JBSA-

SAM Spill Prevention Control and Countermeasures Plan, there would be no adverse impacts on groundwater from proposed construction.

Surface Water. Short-term, negligible, adverse impacts on surface water would occur from the Proposed Action. Construction (i.e., minor grading, excavation, and foundation preparations) would result in temporary soil disturbance. The majority of the projects would not be sited in or adjacent to any surface water features, and implementation of BMPs and an Erosion and Sediment Control Plan (ESCP) would minimize sedimentation and erosion in overland flow runoff.

Individual projects that would disturb 1 or more acre of land are subject to NPDES permitting by TCEQ and would be required to use BMPs to ensure that soils disturbed during construction activities do not impact nearby water bodies. Nearly all of the representative projects under the Proposed Action would disturb more than 1 acre of land and require a Construction General Permit (CGP) under NPDES. Construction projects that result in soil disturbance require an ESCP, which would include BMPs (e.g., silt fences, straw bales) to manage stormwater flow, minimize sedimentation, and protect surface water quality. Ensuring onsite stormwater infiltration during construction activities, as required by EISA Section 438, would sustain groundwater recharge and minimize stormwater runoff. As a result, no long-term, adverse impacts on surface water would be expected.

Wetlands. No impacts on wetlands would occur from the Proposed Action because no construction or demolition activities would be sited in or adjacent to wetland areas. Therefore, wetlands are not discussed further in the EA.

Floodplains. No impacts on floodplains would occur from the Proposed Action because the Corporate and Main Districts are located outside of the 100- and 500-year floodplains. Therefore, floodplains are not discussed further in the EA.

4.2.4 Noise

Short-term, negligible to moderate, adverse impacts on the ambient noise environment at JBSA-SAM would occur from the Proposed Action. Increases in noise levels would occur intermittently during demolition and construction. Noise from these activities would vary depending on the type of equipment being used, the area in which the action would occur, and the distance of the receptor from the noise source. Heavy construction equipment would be used periodically during construction; therefore, noise levels would fluctuate. Most equipment used would be expected to produce noise levels between 70 and 95 dBA at a distance of 50 ft (see **Table 3-5**). Noise levels at the upper end of this range would be associated with equipment such as pile drivers, and be limited to intermittent uses.

Sound levels on the lower end of the range would be more constant during construction activities. These noise levels would decrease with distance from the project areas. Noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between approximately 500 and 4,000 ft from the source, depending on the equipment in use. The Proposed Action would occur within developed areas where ambient noise such as traffic could occasionally exceed 65 dBA.

The primary sources of noise associated with construction activities include the use of heavy trucks (dump trucks and concrete mixers), bulldozers, backhoes, generators, and ground compactors. These vehicles and equipment generate noise during demolition/deconstruction, site and foundation preparation, construction, and finishing work. The levels of noise generated by these vehicles and equipment during these activities are presented in **Table 3-5**. During construction, trucks would travel to and from the project areas. Because of the existing ambient noise environment of the project areas and surrounding areas, negligible effects would be expected from the increase in truck noise, as those sounds would not incrementally increase existing ambient noise levels.

Noise generation would only occur for the duration of construction and would be confined to normal workdays and working hours (i.e., 7 a.m. to 5 p.m.). All applicable noise laws and guidelines would be followed to reduce effects from noise produced by construction activities. Workers would be required to use proper personal hearing protection in accordance with Air Force Occupational Safety and Health Standard 48-20, *Operational Noise and Hearing Conservation Program*, to limit exposure. Appropriate noise attenuation equipment would also be used where applicable.

4.2.5 Geological Resources

Short- and long-term, negligible to minor, adverse impacts would be expected on topography, soils, and geologic hazards from demolition, site preparation (any grading and excavating), construction, and restoration of the representative projects under the Proposed Action. To reduce adverse impacts as a result of soil erosion and sedimentation, an ESCP would be prepared and implemented.

Geology. No short- or long-term impacts on geology would occur from the Proposed Action. Some construction projects would likely include foundations or supports installed into the subsurface; however, no impacts on geologic resources would occur because no geologic formations would be substantially altered. Geotechnical analysis should be undertaken for each project site so that site development precautions can be applied during the planning stage. Therefore, geology will not be discussed further.

Topography. Short-term, negligible, adverse impacts would occur on the natural topography from construction activities under the Proposed Action. The topography of JBSA-SAM varies little and only minimal grading and excavation would be expected to occur because most of the project sites are on previously disturbed lands. Post-construction topography would not be expected to vary significantly from pre-construction topography. No long-term impacts on topography would be expected as a result of construction and demolition activities under the Proposed Action.

Soils. Short- and long-term, minor, adverse impacts on soils would occur from soil compaction, disturbance, and erosion under the Proposed Action. Heavy rain events could potentially cause erosion of unstable embankments and bare soil resulting from excavation and grading activities. However, most construction would occur on previously disturbed sites and a number of the sites are relatively level. Impacts would be minimized through the implementation of environmental protection measures, including ESCPs. Compaction of soils would result in disturbance and

modification of soil structures. Soil productivity would decline in a disturbed area and be eliminated within the footprint of buildings, pavements, and roadways. Loss of soil structure due to compaction from foot and vehicle traffic could result in changes in drainage patterns, but could be mitigated by soil decompaction methods.

Site-specific soil testing would be conducted prior to implementing projects to determine if limitations exist and to determine appropriate environmental protection measures to offset potential adverse effects. Environmental protection measures could include installing silt fencing and sediment traps, applying water to disturbed soil, and revegetating disturbed areas as soon as possible after the disturbance, as appropriate. In the event of a chemical or fuel spill (from construction and demolition activities) the installation's SPCC Plan would be followed to quickly contain and remediate any spills (see **Section 4.2.10** for more information). There are prime farmland soils identified in the Corporate and Main Street Districts, but they are not used for agriculture; therefore, no impacts on prime farmland soils would occur, and prime farmland and this topic is not discussed further in the EA.

Geologic Hazards. Short-term, negligible to minor, adverse impacts on geologic hazards would occur from the Proposed Action. Although the Main Street and Corporate Districts at JBSA-SAM are in a geologically and seismically stable location, potential adverse impacts on humans and property could occur in the event of an earthquake or sinkhole. During implementation of the Proposed Action, no geologic hazards would be created or exacerbated. No long-term impacts prompting increased geologic hazards would be expected as a result of operations of facilities under the Proposed Action.

4.2.6 Biological Resources

Short- and long-term, negligible to minor, adverse and beneficial impacts on biological resources (vegetation and wildlife) would be expected within the Corporate and Main Street Districts under the Proposed Action.

Vegetation. Short- and long-term, negligible, adverse impacts on vegetation would occur from the Proposed Action because several of the representative projects would occur in open, semi-improved spaces where regularly maintained/landscaped vegetation occurs or would be planted. Trees and landscaping planted along building footprints and parking lots in accordance with the JBSA Installation Facilities Standards would be incorporated into project design where possible, to reduce energy consumption through summer shading and winter heat gain. Short-term, negligible impacts could occur if disturbance associated with construction and demolition activities results in the spread of nonnative and/or invasive species in vegetated areas. Soil disturbances could provide opportunities for nonnative and invasive species to establish or spread; however, the proposed project areas would generally be covered by impervious surfaces and surrounded by maintained areas. As a result, invasive species or nonnative plants would have few opportunities to become established.

The following BMPs could be implemented during and after demolition and construction to prevent damage and the establishment and spread of nonnative species:

- Treat oak trees that are trimmed or damaged with pruning paint within 30 minutes of exposure to prevent the spread of oak wilt.

- Chain saws and equipment used for cutting oak trees would be sterilized between use on each individual oak tree.
- Inspect and clean construction equipment to remove soil, plants, and seeds.
- Ensure all fill is as free of nonnative plant propagules as is practicable.
- Revegetate disturbed areas with low water consumption, drought tolerant, Texas regional native plant species.

Invasive weeds would not be expected to become permanently established in disturbed areas with the proper implementation of these management practices. Additionally, BMPs would be implemented to minimize soil disturbance and control erosion and sedimentation during proposed activities to minimize potential impacts on adjacent vegetated areas (see **Section 4.2.5**).

Long-term, negligible, adverse impacts on vegetation would occur from the conversion of vegetated areas to impervious surfaces under the Proposed Action. The representative projects would generally occur in previously disturbed and maintained areas. Operations would not involve ground disturbing activities or vegetation removal and would not affect vegetation.

Wildlife. Short- and long-term, negligible to minor, adverse impacts on wildlife would be expected under the Proposed Action. Loud noise from demolition and construction could disturb wildlife resulting in escape or avoidance behaviors; however, these effects would be temporary. Noise can also distort or mask bird communications signals (e.g., songs, warning calls, fledgling begging calls) and their ability to find prey or detect predators. If noise persists in a particular area, animals could leave their habitat and avoid it permanently. However, resident wildlife species have likely habituated to high noise levels because of the proximity of the airfield and development (Larkin 1994). Short-term, negligible, adverse impacts could also occur from the potential mortality of small, less mobile terrestrial species (e.g., reptiles, rodents, and small mammals) as a result of collision with construction equipment. However, wildlife in the project areas would be expected to generally avoid active project sites. As a result, no population-level impact would be expected to occur.

Long-term, negligible, adverse impacts would occur from the removal of urban habitat. Operation of the proposed facilities would not result in long-term adverse effects on wildlife because similar activities occur elsewhere on the installation and would not significantly increase baseline noise levels (see **Section 4.2.4**).

Long-term beneficial impacts on wildlife would occur from the construction of a park under Project N2. The park would create open space and vegetated habitat within an area that was previously largely impervious.

Migratory Birds. Impacts on migratory birds would be similar to those described for wildlife if these species are present within the project areas. Long-term, negligible, adverse impacts would be expected on migratory birds because of temporary behavior modifications from increased noise levels associated with construction activities. Migratory birds would be expected to temporarily relocate to similar adjacent habitats readily available surrounding JBSA-SAM.

Additionally, the following BMPs would be implemented to avoid effects on migratory birds that could be present:

- If construction is scheduled to start during the period when migratory birds are present, site-specific surveys for nesting migratory birds should be performed starting at least 2 weeks prior to site clearing.
- If nesting birds are found during surveys, buffer areas should be established around nests. Construction should be deferred in buffer areas until birds have left the nest. Confirmation that all young have fledged should be made by a qualified biologist.
- In the event trees need to be removed or trimmed, these activities would not be conducted during the migratory bird breeding season (1 March to 15 August) to ensure compliance with the MTBA.

Steps should also be taken to prevent migratory birds from establishing nests in the project areas. These could include covering equipment and structures and use of various excluders (e.g., noise).

4.2.7 Cultural Resources

Short- and long-term, direct and indirect, negligible to major, adverse and beneficial impacts on cultural resources would occur from the Proposed Action. Major or significant impacts would be reduced to less than significant through use of mitigation. Adverse impacts would result from building demolition, new aboveground construction, and landscape changes. Beneficial impacts would result from positive landscape changes that emphasize or recreate existing patterns within historic landscapes. These impacts would affect architectural resources of JBSA-SAM.

No impacts on archaeological and traditional resources are expected, because no such resources have been identified in the Corporate and Main Street Districts. In the event of an unanticipated discovery of an unknown archaeological resource or human remains, JBSA-SAM would implement inadvertent discovery procedures established in the ICRMP (JBSA 2014b). Therefore, archaeological and traditional resources are not discussed further in the EA.

Architectural Resources. Area development in the Corporate and Main Street Districts would include building construction, building demolition, and changes in landscape patterns that would have adverse and beneficial impacts on historic architectural resources. Affected resources would primarily be the New Post Conservation District, the Fort Sam NHLD, and their contributing resources. New construction would adhere to JBSA-SAM's Standard Operating Procedure (SOP) for Planned New Construction, SOP #1 in the ICRMP, which includes consideration of the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation*. Construction projects would be designed to be compatible with the character-defining qualities of the New Post Conservation District and would not have long-term, adverse visual impacts on the historic district. Noise and activity during construction would however have short-term, indirect, minor, adverse impacts on the historic district. BMPs to address vibration from construction equipment, such as strategically locating equipment or setting horsepower limits, would be implemented near historic and sensitive buildings to avoid damage to facilities. Potentially affected buildings approaching 50 years of age would be evaluated for eligibility at the time project planning matures and gets closer to implementation.

Consultation is required with the Texas SHPO for construction of Projects C1, I1, N1, C2, and I2.

Area development in the Corporate and Main Street Districts would involve building demolition, including the demolition of buildings that contribute to the New Post Conservation District and the Fort Sam Houston NHLD. Demolition of historic buildings would adhere to JBSA-SAM's SOP for Planned Demolition of Buildings, SOP #2 in the ICRMP. This SOP requires justification for demolishing historic properties and the preparation of documentation to Historic American Buildings Survey (HABS) standards in the event a historic building must be demolished. The projects analyzed in this EA would result in the demolition of 40 buildings that contribute to the New Post Conservation District or Fort Sam Houston NHLD (under Projects I1, D1, I2, and D2). Of the 40 buildings, 38 would be demolished in the New Post Conservation District, representing 14 percent of the district's total number of buildings. Thirty-seven buildings proposed for demolition are single-family housing units that are similar in design and contained in a contiguous area. The demolition of contributing buildings within the two districts would degrade the character and coherence of the districts and affect their historic integrity. JBSA-SAM would mitigate building demolitions and potential viewshed impacts for each project with measures such as preparing documentation of the most representative examples of the different building types and styles to be demolished in accordance with HABS Level III standards and developing interpretive signage regarding housing in the New Post Conservation District to mitigate the broader impacts on the district's overall coherence and historic integrity. Other potential measures include development of Memorandums of Agreement (MOAs) with the Texas SHPO, signage and displays, brochures, or others to be identified through consultation for each project. With consideration of these mitigations, the effects of building demolition from Projects I1, D1, I2, and D2 would have direct, long-term, minor to moderate, adverse impacts on the New Post Conservation District and Fort Sam Houston NHLD. Section 106 consultation with the Texas SHPO, the National Park Service (NPS), and tribes would commence as planning processes for each project matures and project details become more refined to determine final mitigations.

Area development would cause changes in landscape patterns in the New Post Conservation District and Fort Sam Houston NHLD, having both adverse and beneficial impacts. Projects C1, I1, D1, N1, C2, I2, and D2 would alter historic landscape patterns by changing land use and traffic circulation patterns that contribute to the historic character and integrity of the New Post Conservation District. These projects would have long-term, direct, negligible to major, adverse impacts on the historic district. JBSA-SAM would reduce major impacts to less than significant by implementing mitigation measures such as developing interpretive signage regarding housing in the New Post Conservation District to mitigate the broader impacts of housing demolition on the district's overall coherence and historic integrity.

Area development in the Corporate and Main Street districts would also have beneficial impacts by restoring or recreating historic landscape patterns and improving conditions that may detract from the character of the historic district. In the case of Project I1, road construction under this project would have beneficial landscape impacts by reducing traffic congestion and emphasizing certain landscape elements that characterize the New Post Conservation District. Project N2 would recreate historic open space in the Fort Sam Houston NHLD and would improve the

historic character of the district as well as the Quadrangle (Building 16), which is individually listed in the NRHP. Overall, the beneficial impacts from area development would be long-term, direct, and minor to moderate.

Building construction and demolition would introduce noise and activity out of character with the New Post Conservation District and Fort Sam Houston NHL, affecting the historic setting and feeling of the districts. This noise and activity would be temporary and localized. Therefore, adverse impacts would be short-term, indirect, and minor.

NHPA Section 106 Consultation. JBSA-SAM is in compliance with Section 106 of the NHPA. As the planning process for each project outlined in the Corporate and Main Street District ADPs mature and project details become more refined, Section 106 consultation with the Texas SHPO, NPS, and tribes will continue or commence as necessary. Specific mitigation measures would be identified through the consultation process to address minor to major impacts. JBSA has initially determined the area development projects analyzed in this EA would have adverse effects on historic properties. Specifically, Projects I1, D1, I2, and D2 would adversely affect historic properties due to the demolition of historic properties that contribute to the New Post Conservation District and Fort Sam Houston NHL. If these projects are selected for implementation, JBSA-SAM would implement measures to reduce impacts to less than significant, such as preparing documentation in accordance with HABS Level III standards for the most representative examples of the different types and styles of buildings to be demolished; developing MOAs; preparing interpretive signage, displays, or brochures; or other measures identified through the consultation process.

4.2.8 Infrastructure and Transportation

Utilities

Short- and long-term, negligible and minor, adverse and beneficial impacts on utility systems would occur under the Proposed Action.

Electrical System. Short-term, negligible, adverse impacts on the electrical system would occur from construction and demolition activities associated with the Proposed Action. Short-term electrical disruptions could be experienced when buildings are disconnected from or connected to the JBSA-SAM electrical distribution system. However, any electrical disruptions would be temporary and coordinated with area users prior to disconnection.

Long-term, minor, beneficial impacts on the electrical system would occur from demolishing old buildings with outdated electrical systems and constructing new buildings with updated electrical systems, which would increase overall electrical efficiency.

Water Supply. Short-term, negligible, adverse impacts on the water supply system at JBSA-SAM would occur from the Proposed Action. Short-term interruptions would be experienced when buildings are disconnected from or connected to the JBSA-SAM water supply system. Any potential disruptions would be temporary and coordinated with area users prior to beginning demolition or construction activities. Water necessary for construction would be obtained from the existing water supply system and have a negligible effect on the installation's overall water supply capacity.

Long-term, minor, beneficial impacts on the water supply system at JBSA-SAM would occur from the demolition of old buildings with outdated, inefficient water fixtures and construction of new buildings with updated water fixtures, which would increase the overall water system efficiency. Because no new personnel or new uses for water are proposed, no long-term increase in water consumption would be expected and no long-term, adverse impacts on the water supply would result.

Wastewater System. Short-term, negligible, adverse impacts on the wastewater system at JBSA-SAM would occur from the Proposed Action. Short-term interruptions could be experienced when buildings are disconnected from or connected to the wastewater system; however, disruption would be temporary and coordinated with area users prior to demolition or construction activities.

Long-term, negligible, beneficial impacts on the wastewater collection system at JBSA-SAM would occur from the increase in water use efficiency associated with the demolition of older buildings and construction of new, modern facilities.

Stormwater System. Short-term, negligible, adverse impacts on the stormwater system at JBSA-SAM would occur from the Proposed Action. Temporary disturbance of stormwater systems would occur during demolition and construction activities. Adverse impacts could be minimized through the implementation of BMPs, which would include installing temporary stormwater controls to minimize the volume and velocity of stormwater flow. Federally required design principles, such as UFC 1-200-02, *High Performance and Sustainable Building Requirements*; UFC 3-210-10, *Low Impact Development*; and EISA Section 438 require project sites to maintain or restore disturbed sites to pre-construction hydrologic conditions.

Natural Gas. Short-term, negligible, adverse impacts on the natural gas distribution system at JBSA-SAM would occur from demolition and construction activities associated with the representative projects under the Proposed Action. Short-term interruptions could occur when buildings are disconnected from or connected to the natural gas main pipelines and any natural gas disruptions would be coordinated with area users beforehand.

Long-term, minor, beneficial impacts would occur from a decrease in overall building space that requires heating, which would result in a decrease in natural gas demand. Additionally, the construction of new buildings with modern, efficient heating systems would further reduce natural gas demand.

Liquid Fuel. Short-term, minor, adverse impacts on the liquid fuel supply at JBSA-SAM would occur from the consumption of fuels during demolition and construction activities associated with the representative projects under the Proposed Action. Following the completion of construction activities, liquid fuel consumption and storage would return to existing conditions and no long-term impacts would occur.

Communications. Short-term, negligible, adverse impacts on the communications system at JBSA-SAM would occur from the representative projects under the Proposed Action. Temporary interruptions could occur when buildings are disconnected from or connected to the

communications system; however, disruptions would be temporary and coordinated with area users prior to potential interruptions.

Long-term, minor, beneficial impacts on the communications system would occur from the demolition of old buildings and removal of outdated communications systems, and the installation of upgraded communications systems at new facilities.

Solid Waste. Short-term, minor, adverse impacts on solid waste management at JBSA-SAM would occur from the addition of demolition and construction debris. Solid waste generated from the representative projects would consist of building materials such as solid pieces of concrete, metals (e.g., conduit, piping, and wiring), lumber, cement, and asphalt. To maximize landfill diversion rates, contractors would be required to recycle construction and demolition debris in accordance with applicable federal regulations, AFIs, and installation policies. The contractor would be responsible for disposing non-recyclable debris at permitted waste facilities such as the Covell Gardens Landfill or Tessman Road Landfill, which would have a long-term, negligible, adverse impact on solid waste management by permanently reducing landfill capacity.

Transportation

Short- and long-term, negligible and minor, adverse and beneficial impacts on the transportation system would occur under the Proposed Action.

Gate Access. Short-term, minor, adverse impacts on gate access and processing rates could occur from the representative projects under the Proposed Action. Additional construction traffic including daily commutes from workers and material hauling would increase the number of daily vehicles accessing the installation. The greatest congestion at the ACPs would occur during peak travel times, typically from 7 a.m. to 9 a.m. and from 4 p.m. to 6 p.m. The level of impact on ACP traffic volumes would be dependent on construction vehicle routes from Walters Gate, frequency of travel, peak times for construction vehicle activity, and length of construction period. Construction traffic would compose a small percentage of the total ACP traffic volume when compared with existing conditions; however, Walters Gate is currently operating above its capacity of 750 vehicles per hour. Temporary partial or full gate closures, traffic pattern changes, and detours would be communicated to installation personnel via electronic signs, bulletins, and memos. Additional construction traffic traveling through the ACPs at JBSA-SAM would cease once construction activities are complete, resulting in no long-term, adverse impacts on gate access.

Long-term, minor, beneficial impacts on traffic circulation could occur from Project I1 under the Proposed Action. Currently, Walters Gate is operating beyond its capacity. An entry reconfiguration and on-installation roundabout could increase traffic circulation in the vicinity of Walters Street.

On-Installation Roadways. Short-term, minor, adverse impacts on the on-installation roadways would occur from the representative projects under the Proposed Action. Demolition and construction phases would require daily contractor and construction crew commutes, and delivery of materials to, and removal of debris from project sites, which could cause an increase in traffic. Construction traffic would compose a small percentage of the total on-installation traffic when compared with existing conditions. Many of the heavy construction vehicles would remain

within a project site for the duration of construction and demolition activities, which would minimize impacts on installation roadways.

The proposed installation development activities would occur at various times and locations over a period of 10 or more years, meaning timing and location of increased traffic would likely not overlap. Any potential increases in traffic volume associated with the proposed demolition and construction would be temporary, and partial or full road closures, traffic pattern changes, and detours would be communicated to installation personnel via electronic signs, bulletins, and memorandums.

Off-Installation Roadways. Short-term, negligible, adverse impacts on off-installation roadways would occur from the Proposed Action. No installation development projects would occur beyond the installation perimeter; therefore, impacts to off-installation roadways would be traffic related. Increased traffic on roadways adjacent to installation ACPs would likely result from the daily commutes of construction and demolition work crews, and delivery of materials to, and removal of debris from, work sites. No long-term impacts on off-installation roadways would be expected.

Parking. Short-term, negligible, adverse impacts on the parking capacity at JBSA-SAM would occur from representative projects under the Proposed Action. Increased parking lot use associated with construction equipment and worker vehicles would occur; however, the existing parking capacity is sufficient to accommodate the increased need for spaces. Additionally, the existing parking capacity could accommodate additional vehicles for projects that involve demolition or reconfiguration of parking areas and would require vehicles to be redirected to other areas to park.

Pedestrian Facilities. Short-term, minor, adverse impacts on pedestrian facilities at JBSA-SAM would occur in the event that construction or demolition activities would interfere with existing pedestrian networks. Any adverse impact would be temporary and activities would be phased to maintain pedestrian pathways when feasible, or provide detours for safe pedestrian movement. Long-term, minor, beneficial impacts would occur on pedestrian facilities at JBSA-SAM from the addition of new, upgraded pedestrian pathways.

Public Transportation. No short- or long-term impacts on public transportation within the installation would be anticipated from the representative projects under the Proposed Action because no construction or demolition activities would take place along roadways used for public transport vehicles.

4.2.9 Safety

Short-term, negligible to minor, adverse impacts on health and safety would result during demolition and construction under the Proposed Action. Construction activities pose an inherent risk of accidents to workers, but this level of risk would be managed by adhering to established federal, state, and USAF safety regulations and policies. Construction and demolition contractors would establish and maintain health and safety programs for their workers. Construction workers would be required to wear PPE such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Health and safety for non-construction-related personnel or dependents that might be in the area during construction would be

maintained through administrative controls and engineering controls, such as construction barriers and warning posters and signs.

Long-term, minor, beneficial impacts on health and safety would result from the demolition of aging facilities that could contain ACMs, LBP, or PCBs and the construction of new facilities and infrastructure providing a safer environment for installation personnel. Sidewalks would be constructed and upgraded throughout the Corporate and Main Street Districts promoting walkable neighborhoods and campuses with a well-connected transportation network.

4.2.10 Hazardous Materials and Wastes

Short- and long-term, negligible to minor, adverse and beneficial impacts on hazardous materials and wastes would be expected under the Proposed Action.

Hazardous Materials, Petroleum Products, and Hazardous Wastes. Short-term, negligible, adverse impacts would occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during facility demolition, construction, and maintenance under the Proposed Action. Hazardous materials that could be used include concrete, asphalt, paints, solvents, preservatives, and sealants. Hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in vehicles and equipment supporting facility construction and demolition. Demolition activities under the Proposed Action would generate negligible to minor quantities of hazardous wastes. Contractors would be responsible for the disposal of hazardous wastes in accordance with federal and state laws. All hazardous materials, petroleum products, and hazardous wastes used or generated during construction would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with applicable regulations to minimize the potential for releases. All construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed.

Toxic Substances. Short-term, negligible to minor, adverse impacts from toxic substances would occur from demolition of buildings that could contain ACMs, LBP, and PCBs under the Proposed Action. Surveys and appropriate abatement for these substances would be completed, as necessary, by a certified contractor prior to work activities to ensure that appropriate measures are taken to reduce potential exposure to, and release of, these substances. Contractors would wear appropriate PPE and would be required to adhere to all federal, state, and local regulations as well as JBSA's management plans for toxic substances. All ACM- and LBP-contaminated debris would be disposed of at a USEPA-approved landfill.

Long-term, negligible to minor, beneficial impacts through demolition would occur from reducing the potential for future human exposure to and the amount of ACMs, LBP, and PCBs to maintain at JBSA-SAM.

Environmental Contamination. No short- or long-term impacts associated with environmental contamination sites would be expected. As stated in **Section 3.10.2**, none of the installation's ERP or MMRP sites represent impediments to the Proposed Action within the Corporate or Main Street Districts.

Contractors performing demolition and construction could encounter undocumented soil or groundwater contamination. If soil or groundwater that is believed to be contaminated were discovered, the contractor would be required to immediately stop work, report the discovery to the installation, and implement appropriate safety measures. Commencement of field activities would not continue in this area until the issue was investigated and resolved. Therefore, environmental contamination will not be discussed further.

Radon. No short- or long-term impacts associated with radon would be expected from implementation of the Proposed Action because Bexar County has a low potential for radon accumulation greater than 2 pCi/L within buildings. Therefore, radon is not discussed further in the EA.

4.3 Detailed Environmental Consequences of the Proposed Action

4.3.1 Representative Projects in Corporate District

4.3.1.1 PROJECT C1: CONSTRUCT FITNESS CENTER

Land Use. Long-term, minor to moderate, beneficial impacts on land use in the Corporate District would occur from Project C1. The proposed fitness center would be constructed in an area designated as community commercial as identified in the Corporate District ADP and 2018 JBSA IDP. Land use designations would not need to be changed and construction of the fitness center would occur in accordance with existing land use policies. Construction of the fitness center at the proposed location would require the demolition of Building 2750 and provide a new, expanded fitness center that is easily accessible to employees and residences, thus providing safe, comfortable, and accessible neighborhoods and campuses that connect operational, family, and community areas. Beneficial impacts on land use would also result from efficient use of installation land through demolition of aging, underused facilities and consolidation of like functions. Project C1 would have no impact on off-installation land use.

Air Quality. Short-term, minor, adverse impacts on air quality would occur from Project C1. Construction activities would produce criteria pollutants and GHGs during demolition of Building 2750, site grading, trenching, building construction, and paving activities, which would be limited to 2023.

Long-term, minor, adverse impacts would occur from operation of the proposed fitness center. Operation would include heating the facility with a natural gas-fired furnace, which would produce criteria pollutants and GHGs. Heating air emissions would occur annually following construction and such emissions would not increase JBSA-SAM's potential to emit above major source thresholds. Newly installed heating, ventilation, and air conditioning (HVAC) systems and the use of refrigerant have historically lead to stratospheric O₃ depletion; however, such systems are not known to cause increases in ground level ozone, for which Bexar County is in marginal nonattainment. Guidelines in 40 CFR § 82, *Protection of Stratospheric Ozone*, along with modern manufacturing techniques and international guidelines, have reduced potential effects on stratospheric ozone from HVAC systems. Annual air emissions for Project C1 were estimated using USAF'S ACAM and are summarized in **Table 4-3**. Annual air emissions would

be less than the 100 tpy *de minimis* threshold; therefore, Project C1 would not require a General Conformity analysis and would not result in a significant impact on air quality.

Table 4-3. Air Emissions from Alternative C1

Action	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO ₂ e	Year
Construct Fitness Center	2.947	2.560	2.913	0.008	3.567	0.101	791.3	2023
Heat Fitness Center	0.055	1.009	0.847	0.006	0.077	0.077	1,214.4	2024 and later

Note: All values are in tpy.

Water Resources. Short-term, negligible, adverse impacts on surface waters could occur from Project C1. Construction activities, such as minor grading, excavation, and foundation preparations for the proposed fitness center would create the potential for soil erosion in the project area, but would not be expected to encounter the local groundwater table. Project C1 would disturb more than 1 acre of land and, therefore, would be subject to NPDES permitting by TCEQ. Construction activities would be required to obtain a CGP and use BMPs to ensure that soils disturbed during construction activities do not impact nearby water bodies. An ESCP, which includes BMPs (e.g., silt fences, straw bales) to manage stormwater flow, minimize sedimentation, and protect surface water quality would be implemented. Ensuring onsite stormwater infiltration during construction activities, as required by EISA Section 438, would sustain groundwater recharge and minimize stormwater runoff. Implementation of these stormwater management controls would minimize potential adverse impacts including erosion and sedimentation. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from construction equipment would not be expected to reach the groundwater table given prompt responses to potential discharges.

Long-term, negligible, adverse impacts on groundwater resources would occur from the increased demand for water as a result of the proposed fitness center.

Noise. Short-term, minor, adverse impacts on the noise environment would occur from Project C1. There would be a slight increase in overall noise levels from construction. As described in **Section 4.2.4**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between 500 and 4,000 ft from the source, depending on the type of equipment. Because the project site is approximately 1,000 ft from the nearest residence, most noise associated with construction activities for this project would likely be at or below 65 dBA before it reaches the receptor. Noise impacts from this project would be temporary during construction. No long-term impacts on the ambient noise environment would be expected from Project C1.

Geological Resources. Short- and long-term, negligible to minor, adverse impacts on soils would be expected from demolition, debris removal, site preparation (grading and excavating), construction, and site restoration under Project C1. Short-term impacts during demolition and construction would result from disturbance of soils, clearing of vegetation, grading, paving, and excavation. Clearing of vegetation would increase erosion and sedimentation potential. Soils would be compacted, and soil structure disturbed and modified. Soil productivity, which is the capacity of the soil to produce vegetative biomass, would decline in disturbed areas and be eliminated in some small areas within the footprint of the facility for parking or driveway

improvements to the fitness center. Loss of soil structure due to compaction from foot and vehicle traffic could result in changes in drainage patterns. Soil erosion and sediment control measures would be included in site plans to minimize long-term erosion and sediment production at each site. Use of stormwater control measures that favor re-infiltration would minimize the potential for erosion and sediment production as a result of future storm events. Demolition and construction would require the use of fuels, oils, lubricants, and chemicals. In the event of a hazardous spill, the environmental protection measures identified in the installation's SPCC Plan would be followed to quickly contain and remediate a spill and minimize the potential impacts on soils.

Biological Resources. Long-term, negligible, adverse impacts on vegetation would occur from Project C1. Construction of the proposed fitness center would result in approximately 170,000 ft² of ground disturbance; however, the construction footprint occurs within a previously disturbed area that contains mostly impervious surfaces. There are small areas of landscaped/semi-improved vegetation that would be temporarily or permanently removed, but the impact is expected to be negligible because the vegetation is not naturally occurring. Upgraded landscaping including Texas regional native species would be planted around the new fitness center. No native vegetation would be permanently lost during development of Project C1.

Short-term, negligible, adverse impacts on wildlife, to include migratory birds, could occur from Project C1. Urban wildlife that may utilize the area near the proposed fitness center and associated demolition of Building 2750 would temporarily avoid the vicinity during construction activities due to intermittent increases in noise from heavy equipment. Studies have documented that traffic and construction noise adversely affects wildlife. Reported noise impacts on wildlife included hearing loss, increase in stress hormones, altered behaviors, interference with communication during breeding activities, differential sensitivity to different frequencies, and deleterious impacts on food supply or other habitat attributes (Forman and Alexander 1998). The wildlife habitat within the project area is of low quality because the area is highly developed. Species that would use this area are urban-adapted and would likely return to normal behavior once construction is complete and the fitness center is operational.

Cultural Resources. Short- and long-term, indirect, minor, adverse impacts on cultural resources would occur from Project C1 from construction and operational noise and visual impacts on the New Post Conservation District and nearby Building 2791 (Barracks), which is a contributing element to the the New Post Conservation District (JBSA 2014b). The proposed new fitness center would be constructed within the New Post Conservation District in the place of a modern building, Building 2750, that would be demolished. The new building would be designed to ensure compatibility with the character-defining qualities of the district, minimizing the long-term visual impact of the new construction on the historic district. Demolition and construction activities would introduce audible and visual elements out of character with the Conservation District, resulting in an adverse impact on the district and Building 2791. Therefore, Project C1 would require consultation with the Texas SHPO and tribes under Section 106 of the NHPA and potentially the development of an MOA outlining mitigation measures determined during consultation.

Infrastructure and Transportation. Short-term, minor, adverse impacts on traffic circulation would be expected from construction and demolition activities because of potential road and lane closures. The proposed fitness center would be located east of the intersection of Stanley Road and Harney Path (see **Figure 2-2**) and would require the demolition of Building 2750 and two parking lots, and construction of new utilities, stormwater infrastructure, and paved areas. Interruptions in utilities could occur from disconnecting Building 2750 and connecting the new fitness center. Debris produced from demolition and construction that cannot be recycled or reused would be disposed of in nearby landfills, which would permanently decrease landfill capacity.

Long-term, negligible, adverse impacts on utilities would be expected because of the additional infrastructure and increase in building space and utility use. Long-term, minor, adverse impacts on the stormwater system at JBSA-SAM would be expected from the increase of 130,000 ft² of impervious surfaces associated with the fitness center.

Long-term, minor, beneficial impacts on infrastructure at JBSA-SAM would occur following completion of the new fitness center because the current fitness center capacity is not adequate to fulfill mission requirements. It is expected that patrons of the proposed fitness center would include military personnel, civilian employees, and their dependents. The addition of a new fitness facility would allow users to take advantage of proper social, leisure, athletic, training, and recreational opportunities at the installation.

Safety. Short-term, negligible, adverse impacts on health and safety could occur during demolition and construction under Project C1. Demolition and construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adhering to established federal, state, and USAF safety regulations and JBSA-SAM management plans. Construction contractors would establish and maintain health and safety programs for their workers. Construction workers would be required to wear PPE such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Fencing and signage would be used to manage accessibility and clearly identify construction areas. Transportation of construction materials would occur during nonpeak hours using alternative routes when possible to alleviate increased traffic on heavier traveled roadways.

Building 2750, which was constructed in 1978, would be demolished under Project C1. Because of the age of Building 2750, materials such as ACM, LBP, and PCBs could be present. **Section 4.2.10** provides guidance on the handling and disposal of these materials.

Long-term, negligible to minor, beneficial impacts on safety would be expected from the removal of ACM, LBP, and PCB materials, thus reducing the potential for exposure to personnel.

Hazardous Materials and Wastes. Short-term, negligible, adverse impacts would occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during facility demolition, construction, and maintenance associated with Project C1. Hazardous materials that could be used include concrete, asphalt, paints, solvents, preservatives, and sealants. Hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in vehicles and equipment supporting facility construction. Demolition of Building 2750 and adjacent parking areas and construction of the fitness center would generate negligible

quantities of hazardous wastes. Contractors would be responsible for the disposal of hazardous wastes in accordance with federal and state laws. All hazardous materials, petroleum products, and hazardous wastes used or generated during construction would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with applicable regulations to minimize the potential for releases. All construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed.

Short-term, negligible, adverse impacts from toxic substances might occur from the proposed demolition of Building 2750, which was constructed in 1978 and could contain ACMs, LBP, and PCBs. Surveys and appropriate abatement for these substances would be completed, as necessary, by a certified contractor prior to work activities to ensure that appropriate measures are taken to reduce potential exposure to, and release of, these substances. Contractors would wear appropriate PPE and would be required to adhere to all federal, state, and local regulations as well as JBSA's management plans for toxic substances. All ACM- and LBP-contaminated debris would be disposed of at a USEPA-approved landfill.

Long-term, negligible to minor, beneficial impacts through demolition would occur from reducing the potential for future human exposure to and the amount of ACMs, LBP, and PCBs to maintain at JBSA-SAM.

4.3.1.2 PROJECT I1: ENTRY BOULEVARD AND ROUNDABOUT

Land Use. Long-term, minor to moderate, beneficial impacts on land use in the Corporate District would occur from Project I1. The proposed entry boulevard and roundabout would be constructed in areas designated as community commercial and administrative as identified in the Corporate District ADP and 2018 JBSA IDP. Land use designations would not need to be changed, and construction of the entry boulevard and roundabout would occur in accordance with existing land use policies. Construction of the entry boulevard and roundabout at the proposed location would require the demolition of Building 325 and provide an enhanced entrance into the installation from the Walters Street Gate through an entry roundabout and boulevard that leads directly to MacArthur Parade Field. Beneficial impacts on land use would also result from efficient use of installation land through demolition of aging, underused facilities. A small portion of Project I1 would occur in the Commercial District. Project I1 would have no impact on land uses within the Commercial District or off the installation.

Air Quality. Short-term, minor, adverse impacts on air quality would occur from Project I1. Construction activities would produce criteria pollutants and GHGs when demolition of Building 325, site grading, trenching, and paving are occurring, which would be limited to 2023. As part of Project I1, Building 325 would be demolished and heat would no longer be required for that building resulting in a reduction of air emissions. Annual air emissions for the proposed entry boulevard and roundabout were estimated using USAF's ACAM and are summarized in **Table 4-4**. Annual air emissions would be less than the 100 tpy *de minimis* threshold; therefore, Project I1 would not require a General Conformity analysis.

Table 4-4. Air Emissions from Alternative I1

Action	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}	Year
Construct Entry Boulevard and Roundabout	0.248	1.377	1.653	0.004	4.957	0.056	305.9	2023
Discontinue Heat from Building 325 Demolition	-0.004	-0.078	-0.066	0.000	-0.006	-0.006	-94.1	2023 and later

Note: All values are in tpy.

Long-term, minor, beneficial impacts would occur from the reduction in annual air and GHG emissions as a result of Project I1. The proposed entry boulevard and roundabout would result in enhanced traffic flow, thus reducing vehicle idling and runtime.

Water Resources. Short-term, negligible, adverse impacts on surface waters could occur from Project I1. Construction activities, such as minor grading and excavation, would create the potential for soil erosion in the project area, but would not be expected to encounter the local groundwater table. Project I1 would disturb more than 1 acre of land and, therefore, would be subject to NPDES permitting by TCEQ. Construction activities would be required to obtain a CGP and use BMPs to ensure that soils disturbed during construction activities do not impact nearby water bodies. An ESCP, which includes BMPs (e.g., silt fences, straw bales) to manage stormwater flow, minimize sedimentation, and protect surface water quality would be implemented. Ensuring onsite stormwater infiltration during construction activities, as required by EISA Section 438, would sustain groundwater recharge and minimize stormwater runoff. Implementation of these stormwater management controls would minimize potential adverse impacts including erosion and sedimentation. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from construction equipment would not be expected to reach the groundwater table with prompt responses to potential discharges. No impacts on groundwater would be expected as a result of Project I1.

Noise. Short- and long-term, negligible to minor, adverse impacts on the noise environment would occur from Project I1. There would be a slight increase in overall noise levels from construction. As described in **Section 4.2.4**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between 500 and 4,000 ft from the source, depending on the type of equipment. Because the project site is approximately 800 ft from the nearest residence, most noise associated with construction activities for this project would likely be at or below 65 dBA before it reaches the receptor. Noise impacts from this project would be temporary during construction. Long-term, negligible impacts on the ambient noise environment would be expected from Project I1. Changes to traffic patterns resulting from installation of the new entry boulevard and roundabout would redirect traffic noise to a previously un-trafficked portion of the installation. However, an increase in traffic and subsequent additional increase in noise is not expected with these changes.

Geological Resources. Short-term, negligible, adverse impacts would be expected on topography from demolition, debris removal, site preparation (grading and excavating), construction, and site restoration under Project I1. Topography within the Corporate District varies little and only minor grading and excavation would be anticipated to occur. Post-

construction topography would not be expected to vary significantly from pre-construction topography. No geologic formations would be substantially altered by the proposed construction activities

Short-term, minor, adverse impacts on soils would occur from Project I1. The primary impacts would be soil compaction, disturbance, and erosion during construction. The implementation of environmental protection measures described in **Section 4.2.5** would minimize erosion impacts. Construction would require the use of fuels, oils, lubricants, and chemicals. In the event of a hazardous spill, environmental protection measures identified in the installation's SPCC Plan would be followed to quickly contain and remediate a spill and minimize the potential impacts on soils.

Biological Resources. Short- and long-term, negligible, adverse and beneficial impacts on vegetation would occur from Project I1. The proposed entry boulevard and roundabout and associated demolition of Building 325 would disturb approximately 119,000 ft² and would decrease the amount of impervious surface by 30,000 ft². The entry boulevard and roundabout would traverse areas of landscaped/semi-improved vegetation that would be temporarily and permanently disturbed; however, the impact is expected to be negligible because the vegetation is not naturally occurring. Temporary impacts on vegetation include the incidental crushing and trampling of vegetation during demolition and construction. Impacts are considered permanent if semi-improved areas are replaced with impervious surfaces. The removal of 30,000 ft² of impervious surfaces would have a beneficial effect on vegetation by revegetating these surfaces with Texas regional native species in a semi-improved landscape.

Short- and long-term, negligible, adverse impacts on wildlife, to include birds protected by the MBTA, would occur from Project I1. Urban wildlife that may utilize the area near the proposed entry boulevard and roundabout would temporarily avoid the vicinity during demolition and construction due to intermittent increases in noise from heavy equipment. Studies have documented that traffic and construction noise adversely affects wildlife. Reported noise impacts on wildlife included hearing loss, increase in stress hormones, altered behaviors, interference with communication during breeding activities, differential sensitivity to different frequencies, and deleterious impacts on food supply or other habitat attributes (Forman and Alexander 1998). Furthermore, with the permanent removal of semi-improved vegetation, species that may use it for foraging would need to relocate to areas with less vehicular traffic. The wildlife habitat within the area of the proposed entry boulevard and roundabout is of low quality because the area is highly developed. Species that would use this area are urban-adapted and would likely return to normal behavior once construction is complete and the entry boulevard and roundabout is operational.

Cultural Resources. Short- and long-term, direct and indirect, minor to major, adverse impacts on cultural resources would occur from Project I1 from building demolition, changes in circulation patterns, and construction noise. The proposed entry boulevard and roundabout would also have long-term, indirect, beneficial impacts on cultural resources because of improved traffic patterns and landscaping.

Long-term, minor to moderate, adverse impacts would occur from building demolition and changes to circulation patterns in the New Post Conservation District. Project I1 would require

demolition of Building 325 in order to construct new roadway between the proposed traffic circle and Stanley Road. Building 325, constructed in 1945, is a contributing resource of the New Post Conservation District. The project would alter circulation patterns in the southeastern portion of the district, having a minor adverse impact. However, the project would complement and emphasize the existing landscape of the New Post Conservation District and would improve traffic circulation, having an overall long-term, minor, beneficial impact.

Construction of the new entry boulevard and roundabout would have short-term, indirect, adverse impacts on the New Post Conservation District during construction. Construction activities would introduce audible and visual elements out of character for the district, having a minor adverse impact.

During previous consultation with the Texas SHPO for the Laboratory Instruction Building (Building 325), it was determined that the demolition of the facility would have an adverse effect on historic properties under Section 106 of the NHPA. Through that consultation, Building 325 was approved for demolition. Major visual impacts could also occur on the viewshed of Building 369 (Post Prison), a contributing element to the New Post Conservation District that is located to the west of the project site (JBSA 2014b). In compliance with Section 106 of the NHPA, as the planning process for Project I1 matures and project details become more refined, Section 106 consultation with the Texas SHPO and tribes would commence to mitigate the adverse effect as necessary, to include the potential development of an MOA.

Infrastructure and Transportation. Short-term, minor, adverse impacts on transportation at JBSA-SAM would occur from Project I1, which may require the closure of an ACP, in which case, off-installation traffic travelling to the installation may be rerouted, causing a change from existing traffic circulation. Temporary increases in traffic would occur during demolition and construction activities associated with the proposed entry boulevard and roundabout and any off-installation traffic increases from Project I1 would be temporary and only last for the duration of construction. The anticipated increase in traffic for on- and off-installation roadways adjacent to Walters Gate from construction contractors, delivery of construction materials, and hauling of debris would not be expected to significantly affect transportation at JBSA-SAM. Temporary closure of Walters Gate could occur to accommodate construction activity, in which case, traffic would be directed to other gates. Any potential increases in traffic volume associated with Project I1, partial or full road closures, traffic pattern changes, and detours would be communicated to installation personnel via electronic signs, bulletins, and memorandums.

Long-term, minor, beneficial impacts for on- and off- installation roadways would occur following completion of Project I1 from the enhanced roadway network with AT/FP control measures such as denial barriers, increased traffic circulation, new sidewalks, and direct access to the parade field. Long-term, negligible, beneficial impacts on the stormwater system at JBSA-SAM would be expected as a result of the decrease of 30,000 ft² of impervious surface.

Safety. Short-term, minor, adverse impacts on health and safety could occur during demolition and construction under Project I1. Demolition and construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adhering to established federal, state, USAF safety regulations, and JBSA-SAM management plans. Construction contractors would establish and maintain health and safety programs for their

workers. Construction workers would be required to wear PPE such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Fencing and signage would be used to manage accessibility and clearly identify construction areas. Transportation of construction materials would occur during nonpeak hours using alternative routes when possible to alleviate increased traffic on heavier traveled roadways.

Building 325 would be demolished as well as some existing roadways and parking for construction of the entry boulevard and roundabout. Because of the age of Building 325, materials such as ACMs, LBP, and PCBs could be present. **Section 4.2.10** provides guidance on the handling and disposal of these materials.

Long-term, negligible to minor, beneficial impacts on safety would be expected from the removal of ACM, LBP, and PCB materials thus reducing any potential exposure to personnel.

Hazardous Materials and Wastes. Short-term, negligible, adverse impacts would occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during demolition, construction, and maintenance associated with Project I1. Hazardous materials that could be used include asphalt, concrete, paints, solvents, preservatives, and sealants. Hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in vehicles and equipment supporting demolition and construction. Demolition of Building 325 and construction of the entry boulevard and roundabout would generate negligible to minor quantities of hazardous wastes. Contractors would be responsible for the disposal of hazardous wastes in accordance with federal and state laws. All hazardous materials, petroleum products, and hazardous wastes used or generated during construction would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with applicable regulations to minimize the potential for releases. All construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed.

Short-term, negligible, adverse impacts could occur from construction near three USTs associated with the Army and Air Force Exchange Service gasoline station at Building 331. The locations of the USTs and site-specific information regarding the USTs would be obtained prior to beginning construction activities to ensure no adverse impact would result on these tanks.

Short-term, negligible, adverse impacts from toxic substances might occur from the proposed demolition of Building 325, which was constructed in 1945 and could contain ACMs, LBP, and PCBs. Surveys and appropriate abatement for these substances would be completed, as necessary, by a certified contractor prior to work activities to ensure that appropriate measures are taken to reduce potential exposure to, and release of, these substances. Contractors would wear appropriate PPE and would be required to adhere to all federal, state, and local regulations as well as JBSA's management plans for toxic substances. All ACM- and LBP-contaminated debris would be disposed of at a USEPA-approved landfill. Long-term, negligible to minor, beneficial impacts through demolition would occur from reducing the potential for future human exposure to and the amount of ACMs, LBP, and PCBs to maintain at JBSA-SAM.

4.3.1.3 PROJECT D1: DEMOLISH SINGLE-FAMILY RESIDENTIAL UNITS

Land Use. Long-term, minor to moderate, beneficial impacts on land use in the Corporate District would occur from Project D1. The 37 single-family residential units (Buildings 518–527, 530–536, 544–554, 558–564, and 566) proposed for demolition are in an area designated housing accompanied as identified in the Corporate District ADP and 2018 JBSA IDP. These units have reached the end of their useful life and modern housing has been constructed on the installation to replace these older, less-efficient homes. Beneficial impacts would result from demolishing these inefficient facilities and creating developable land enabling future development. Dependent on the type of development, land use designations may need to be changed in the future; however, it is assumed that future development would be consistent with the goals and visions outlined in the Corporate District ADP and the 2018 JBSA IDP. Beneficial impacts on land use would also result from efficient use of installation land through demolition of aging, underused facilities. Project D1 would have no impact on off-installation land use.

Air Quality. Short-term, minor, adverse impacts on air quality would occur from Project D1. Demolition activities would produce criteria pollutants and GHGs when demolishing the housing units and grading the area, which would be limited to 2023. Annual air emissions for the proposed demolition of 37 single-family housing units at JBSA-SAM were estimated using USAF’s ACAM and are summarized in **Table 4-5**. Annual air emissions would be less than the 100 tpy *de minimis* threshold; therefore, Project D1 would not require a General Conformity analysis.

Long-term, minor, beneficial impacts on air quality would occur because heating the housing units using natural-gas furnaces would no longer be required which would result in an annual reduction in air and GHG emissions.

Table 4-5. Air Emissions from Alternative D1

Action	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}	Year
Demolish Residential Units	0.180	0.992	1.220	0.002	9.314	0.029	32.6	2023
Discontinue Heating	-0.014	-0.242	-0.103	-0.002	-0.020	-0.020	-309.5	2024 and later

Note: All values are in tpy.

Water Resources. Short-term, negligible, adverse impacts on surface waters could occur from Project D1. Demolition activities would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Project D1 would disturb more than 1 acre of land and, therefore, would be subject to NPDES permitting by TCEQ. Demolition activities would be required to obtain a CGP and use BMPs to ensure that soils disturbed during ground-disturbing activities do not impact nearby water bodies. An ESCP, which includes BMPs (e.g., silt fences, straw bales) to manage stormwater flow, minimize sedimentation, and protect surface water quality would be implemented. Ensuring onsite stormwater infiltration during construction activities, as required by EISA Section 438, would sustain groundwater recharge and minimize stormwater runoff. Implementation of these stormwater management controls would minimize potential adverse impacts including erosion and sedimentation. Based on existing soil conditions, any incidental contaminant discharges

(e.g., fuel, lubricants, coolants) from construction equipment would not be anticipated to reach the groundwater table with prompt responses to potential discharges. No impacts on groundwater would be expected as a result of Project D1.

Noise. Short-term, moderate, adverse impacts on the noise environment would occur from Project D1. There would be a slight increase in overall noise levels from demolition. As described in **Section 4.2.4**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between 500 and 4,000 ft from the source, depending on the type of equipment. However, the project site is within a residential area, and construction equipment could introduce moderate impacts due to the proximity to noise sensitive receptors. Because the noise would be temporary during demolition and appropriate noise attenuation equipment would be used where applicable, impacts would not be significant. No long-term impacts on the ambient noise environment would be expected from Project D1.

Geological Resources. Short-term, minor, adverse, and long-term, beneficial impacts on soils would occur from Project D1. Soils were previously disturbed in this area when the buildings were constructed. Short-term impacts would involve vegetation removal and compaction of surrounding soils under the weight of demolition equipment, which would result in increased soil erosion and stormwater runoff during demolition activities. Portions of the project area occur areas of moderate slopes, which could increase erosion over the short-term during demolition activities. Adverse impacts would be minimized with the implementation of environmental protection measures such as wetting of soils to reduce impacts from wind erosion, and the use of silt fencing and sediment traps to reduce water erosion. Use of these practices would help retain soils and on-site runoff.

Long-term, negligible, beneficial impacts on soils would occur from the removal of impervious surfaces and restoration of the project area to match surrounding areas, until this area is developed again in the future as planned.

Biological Resources. Short- and long-term, negligible, adverse impacts on vegetation would occur from Project D1. Demolition activities would require ground surface disturbance of approximately 5 acres. The proposed demolition of 37 single-family residential units would temporarily impact landscaped/semi-improved vegetation surrounding the homes; however, the impact is expected to be negligible because the vegetation is not naturally occurring. Temporary impacts on vegetation include the incidental crushing and trampling of vegetation during demolition. The area is being cleared for the availability of space for future projects. Because revegetation efforts beyond reseeding with grasses are not expected to occur and there is a potential for changes in impervious surfaces in the future, Project D1 would have a long-term, negligible, adverse impact on vegetation.

Short- and long-term, negligible to minor, adverse impacts on wildlife, to include birds protected by the MBTA, would occur from Project D1. Urban wildlife that may utilize the area near the 37 single-family residential units proposed for demolition would temporarily avoid the vicinity during demolition activities due to intermittent increases in noise from heavy equipment. Studies have documented that traffic and construction noise adversely affects wildlife. Reported noise impacts on wildlife included hearing loss, increase in stress hormones, altered behaviors, interference with communication during breeding activities, differential sensitivity to different

frequencies, and deleterious impacts on food supply or other habitat attributes (Forman and Alexander 1998). The wildlife habitat within the project area is low quality because the area is highly developed. Species that would use this area are urban-adapted and would likely return to normal behavior once demolition is complete.

Cultural Resources. Short- and long-term, direct and indirect, minor to major, adverse impacts on cultural resources would occur from Project D1 because of building demolition and landscape changes in the New Post Conservation District. Project D1 would demolish 37 single-family residential units to create space for future projects and increase available land capacity. These buildings were among 110 units constructed in the New Post between 1931 and 1934 for company officers and their families, and are contributing resources of the New Post Conservation District. Demolition of these contributing buildings would adversely impact the larger district. To mitigate the impacts of demolition, JBSA-SAM would identify the most representative examples of the housing units to be demolished and document the buildings in accordance with HABS Level III standards, and develop an MOA outlining mitigation measures determined during Section 106 consultation. With these mitigations, direct impacts on the New Post Conservation District from building demolition would be long-term but reduced to less than significant.

Demolition of the 37 single-family residential units would create open space within the New Post Conservation District, with the intent that the space would be used for future projects. Currently, the buildings proposed for demolition form a continuous block with other housing units in the New Post and the Calvary and Artillery Post along the north and west sides of the parade grounds. The temporary creation of open space and ultimate redevelopment could have additional long-term, direct, moderate, adverse impacts on the New Post Conservation District by changing landscape patterns and possibly altering land use within the district, depending on the nature of future projects. JBSA-SAM would develop interpretive signage regarding housing in the New Post Conservation District to mitigate the broader impacts of housing demolition on the district's overall coherence and historic integrity.

Demolition activities would introduce noise and visual elements out of character with the New Post Conservation District, resulting in a short-term, indirect, minor, adverse impact on the district.

The proposed demolition of 37 single-family units in the Corporate District and accompanying changes in landscape patterns would have an adverse effect on the New Post Conservation District under Section 106 of the NHPA. JBSA-SAM would develop an MOA outlining mitigation measures determined during consultation, including preparation of HABS Level III documentation of the most representative examples of the demolished buildings and interpretive signage to mitigate the adverse effect.

Infrastructure and Transportation. Short-term, minor, adverse impacts on infrastructure and transportation at JBSA-SAM would occur from Project D1. Adverse impacts on utilities would be expected because of possible interruptions from disconnecting the 37 single-family residential units from electric, natural gas, water, and communications utilities prior to demolition. Debris generated during demolition activities that is not recycled would be landfilled, which would

permanently decrease the local landfill capacity and result in a long-term, minor, adverse impact.

Long-term, minor, beneficial impacts on infrastructure would be expected from the demolition of these outdated housing units, which would decrease overall utility use for the installation. Additionally, Project D1 would remove 218,000 ft² of impervious surface, which would have long-term, minor, beneficial impacts on the stormwater system at JBSA-SAM.

Safety. Short-term, minor, adverse impacts could occur on health and safety during demolition under Project D1. Demolition activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adhering to established federal, state, USAF safety regulations, and JBSA-SAM management plans. Demolition contractors would establish and maintain health and safety programs for their workers. Demolition workers would be required to wear PPE such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Fencing and signage would be used to manage accessibility and clearly identify demolition areas. Transportation of construction materials would occur during nonpeak hours using alternative routes when possible to alleviate increased traffic on heavier traveled roadways.

The 37 single-family housing units proposed for demolition under Project D1 were constructed between 1931 and 1934. Because of the age of these buildings, materials such as ACMs, LBP, and PCBs could be present. **Section 4.2.10** provides guidance on the handling and disposal of these materials.

Long-term, minor, beneficial impacts on health and safety would be expected from the removal of ACMs, LBP, and PCBs, thus reducing the potential for exposure to personnel.

Hazardous Materials and Wastes. Short-term, negligible to minor, adverse impacts would occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during demolition under Project D1. Hazardous materials that could be used include solvents, preservatives, and sealants. Hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in vehicles and equipment supporting facility demolition. Demolition of 37 single-family residential units would generate minor quantities of hazardous wastes. Contractors would be responsible for the disposal of hazardous wastes in accordance with federal and state laws. All hazardous materials, petroleum products, and hazardous wastes used or generated during demolition would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with applicable regulations to minimize the potential for releases. All construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed.

Short-term, negligible to minor, adverse impacts from toxic substances might occur from the proposed demolition of 37 single-family residential units, which were constructed between 1931 and 1934 and could contain ACMs, LBP, and PCBs. Surveys and appropriate abatement for these substances would be completed, as necessary, by a certified contractor prior to work activities to ensure that appropriate measures are taken to reduce potential exposure to, and release of, these substances. Contractors would wear appropriate PPE and would be required

to adhere to all federal, state, and local regulations as well as JBSA’s management plans for toxic substances. All ACM- and LBP-contaminated debris would be disposed of at a USEPA-approved landfill.

Long-term, negligible to minor, beneficial impacts through demolition would occur from reducing the potential for future human exposure to and the amount of ACMs, LBP, and PCBs to maintain at JBSA-SAM.

4.3.1.4 PROJECT N1: PHYSICAL TRAINING TRAIL EXTENSION

Land Use. Long-term, minor, beneficial impacts on land use in the Corporate District would occur from Project N1. The proposed physical training trail extension would be constructed in an area designated as open space as identified in the Corporate District ADP and 2018 JBSA IDP. Land use designations would not need to be changed and construction of the physical training/recreational trails would occur in accordance with existing land use policies. Construction of the physical training/recreational trails between Henry T. Allen Road and New Braunfels Avenue would create a trail network that would reach across the installation, connecting and circulating among the parks, athletic courts, and athletic fields. Project N1 would have no impact on off-installation land use.

Air Quality. Short-term, minor, adverse impacts on air quality would occur from Project N1. Construction would produce criteria pollutants and GHGs during site grading and paving activities, which would be limited to 2022. Because operation of the physical training trail extension would not include any sources of air emissions (e.g., heaters or generators), no long-term changes on air emissions would occur. Annual air emissions for Project N1 were estimated using USAF’S ACAM and are summarized in **Table 4-6**. Annual air emissions would be less than the 100 tpy *de minimis* threshold; therefore, Project N1 would not require a General Conformity analysis.

Table 4-6. Air Emissions from Alternative N1

Action	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}	Year
Construct Trail	0.176	1.048	1.073	0.002	3.571	0.050	235.3	2022

Notes: All values are in tpy.

Water Resources. Short-term, negligible, adverse impacts on surface waters could occur from Project N1. Construction activities would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Project N1 would disturb more than 1 acre of land and, therefore, would be subject to NPDES permitting by TCEQ. Construction activities would be required to obtain a CGP and use BMPs to ensure that soils disturbed during ground-disturbing activities do not impact nearby water bodies. An ESCP, which includes BMPs (e.g., silt fences, straw bales) to manage stormwater flow, minimize sedimentation, and protect surface water quality would be implemented. Ensuring onsite stormwater infiltration during construction activities, as required by EISA Section 438, would sustain groundwater recharge and minimize stormwater runoff. Implementation of these stormwater management controls would minimize potential adverse impacts including erosion and sedimentation. Based on existing soil conditions, any incidental contaminant discharges

(e.g., fuel, lubricants, coolants) from construction equipment would not be anticipated to reach the groundwater table with prompt responses to potential discharges. No impacts on groundwater would be expected as a result of Project N1.

Noise. Short-term, moderate, adverse impacts on the noise environment would occur from Project N1. There would be an increase in overall noise levels from construction. As described in **Section 4.2.4**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between 500 and 4,000 ft from the source, depending on the type of equipment. However, the project site is located within 500 ft of residential units. Construction equipment could introduce moderate impacts due to the proximity to noise sensitive receptors. Because the noise would be temporary during construction and appropriate noise attenuation equipment would be used where applicable, impacts would not be significant. No long-term impacts on the ambient noise environment would be expected from Project N1.

Geological Resources. Short-term, negligible to minor, adverse impacts on topography and soils would be expected as a result of debris removal, site preparation, construction, and restoration activities. Primary impacts would be soil compaction, disturbance, and erosion during construction activities. Short-term adverse impacts would involve vegetation removal and compaction of surrounding soils under the weight of construction equipment, which would result in increased soil erosion and stormwater runoff. Adverse impacts would be minimized with the implementation of environmental protection measures such as wetting of soils for wind erosion, and the use of silt fencing and sediment traps for water erosion. Use of these practices would help retain soils and on-site runoff. No long-term impacts on topography or soils would be anticipated from Project N1.

Biological Resources. Short- and long-term, negligible, adverse impacts on vegetation would occur from Project N1. Approximately 118,000 ft² of landscaped and semi-improved vegetation would be permanently impacted by the construction of the proposed physical training trail extension; however, the impact is expected to be negligible because the vegetation is not naturally occurring. Long-term adverse impacts on vegetation include the incidental crushing and trampling of vegetation along the trails from human use. Over time, the established vegetation along the trails may decline from disturbance and allow the potential for erosion.

Short- and long-term, negligible, adverse impacts on wildlife, to include birds protected under the MBTA, would occur from Project N1. Urban wildlife that may utilize the park and semi-improved area within the proposed physical training trail extension would temporarily avoid the vicinity during construction activities due to intermittent increases in noise from heavy equipment. Studies have documented that traffic and construction noise adversely affects wildlife. Reported noise impacts on wildlife included hearing loss, increase in stress hormones, altered behaviors, interference with communication during breeding activities, differential sensitivity to different frequencies, and deleterious impacts on food supply or other habitat attributes (Forman and Alexander 1998). Wildlife may experience long-term impacts from human use of the trail system. Increased human activity within open spaces may disturb wildlife during foraging, mating, or nesting behaviors. Species that would use these open spaces are urban-adapted and used to human presence; therefore, the effect would be negligible.

Cultural Resources. Long-term, negligible to minor, adverse impacts on cultural resources could occur from Project N1. The project would construct physical training/recreational trails between Henry T. Allen Road and New Braunfels Avenue within the New Post Conservation District and Fort Sam Houston NHL. The open space in this area was originally developed as a parade ground that extended from an earlier parade ground in the Cavalry and Artillery Post (in the Main Street District). The new trails would connect to existing trails in the Cavalry and Artillery Post parade grounds. The project would represent a consistent and compatible use for this historically open space and reinforce the continuity of the parade grounds between the New Post Conservation District and the adjacent Fort Sam Houston NHL. Depending on the proposed route, Project N1 may require consultation with the Texas SHPO under Section 106 of the NHPA and the development of an MOA outlining mitigation measures determined during consultation as project planning matures and project details become more refined.

Infrastructure and Transportation. Short-term, negligible, adverse impacts on utilities may occur under Project N1. There are no utilities located in the majority of the parade field; however, underground water mains, stormwater mains, and electrical lines cross the parade field between Schofield and Reynolds Roads. Because trail construction would be superficial and require little ground penetration, impacts on underground utility lines are not expected to occur. Adverse impacts would be avoided by mapping and marking underground utilities to prevent damage.

Long-term, minor, adverse impacts on the stormwater system at JBSA-SAM would occur from the increase of 118,000 ft² in impervious surfaces associated with the trail, which would result in additional stormwater runoff. Long-term, minor, beneficial impacts would result from Project N1 because a major gap in the installation-wide pedestrian network would be completed, allowing pedestrians to safely and efficiently travel between the Corporate and Main Street Districts.

Safety. Short-term, negligible to minor, adverse impacts on health and safety could occur during construction under Project N1. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adhering to established federal, state, USAF safety regulations, and JBSA-SAM management plans. Construction contractors would establish and maintain health and safety programs for their workers. Construction workers would be required to wear PPE such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Fencing and signage would be used to manage accessibility and clearly identify construction areas. Transportation of construction materials would occur during nonpeak hours using alternative routes when possible to alleviate increased traffic on heavier traveled roadways.

Long-term, beneficial impacts on safety would occur from the physical training trail extension by improving connectivity across the installation for accessing operational, family and community areas within the Corporate and Main Street Districts.

Hazardous Materials and Wastes. Short-term, negligible, adverse impacts would occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during construction and maintenance associated with Project N1. Hazardous materials that could be used include asphalt, paints, fertilizers, herbicides, solvents, preservatives, and sealants. Hydraulic fluids and petroleum products, such as diesel and gasoline, would be used

in vehicles and equipment supporting construction. Construction would generate negligible to minor quantities of hazardous wastes. Contractors would be responsible for the disposal of hazardous wastes in accordance with federal and state laws. All hazardous materials, petroleum products, and hazardous wastes used or generated during construction would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with applicable regulations to minimize the potential for releases. All construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed.

No short- or long-term impacts on toxic substances are expected to occur under Project N1. No demolition of materials potentially containing toxic substances is proposed, and new construction is not likely to include the use of toxic substances because federal policies and laws limit their use in building construction applications.

4.3.2 Representative Projects in Main Street District

4.3.2.1 PROJECT C2: ARNORTH HDOC

Land Use. Long-term, minor, beneficial impacts on land use in the Main Street District would occur from Project C2. The proposed ARNORTH HDOC would be constructed in an area already designated as administrative as identified in the Main Street District ADP and 2018 JBSA IDP. Land use designations would not need to be changed and construction of the facility would occur in accordance with existing land use policies. Construction of the HDOC at the proposed location would infill currently unoccupied land within an administrative complex setting. Beneficial impacts on land use would also result from efficient use of installation land through consolidation of like functions. Project C2 would have no impact on off-installation land use.

Air Quality. Short-term, minor, adverse impacts on air quality would occur from Project C2. Construction activities would produce criteria pollutants and GHGs during site grading and building construction, which would be limited to 2023.

Long-term, minor, adverse impacts would occur from operation of the proposed HDOC facility. Operation would include heating the facility with a natural gas-fired furnace, which would produce criteria pollutants and GHGs. Heating air emissions would occur annually following construction and would be less than 1 tpy for each criteria pollutant. Therefore, such emissions would not increase JBSA-SAM's potential to emit above major source thresholds. Newly installed HVAC systems and the use of refrigerant have historically lead to stratospheric O₃ depletion; however, such systems are not known to cause increases in ground level ozone, for which Bexar County is in marginal nonattainment. Guidelines in 40 CFR § 82, along with modern manufacturing techniques and international guidelines, have reduced potential effects on stratospheric ozone from HVAC systems. Annual air emissions for Project C2 were estimated using USAF'S ACAM and are summarized in **Table 4-7**. Annual air emissions would be less than the 100 tpy *de minimis* threshold; therefore, Project C1 would not require a General Conformity analysis and would not result in a significant impact on air quality.

Table 4-7. Air Emissions from Alternative C2

Action	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}	Year
Construct HDOC Facility	0.667	4.086	4.116	0.012	67.611	0.163	1,193.6	2023
Heat HDOC Facility	0.042	0.764	0.642	0.005	0.058	0.058	920.1	2024 and later

Note: All values are in tpy.

Water Resources. Short-term, negligible, adverse impacts on water resources would occur from Project C2. Construction activities, such as minor grading, excavation, and foundation preparations for the proposed HDOC facility would create the potential for soil erosion in the project area, but would not be expected to encounter the local groundwater table. Project C2 would disturb more than 1 acre of land, and therefore, would be subject to NPDES permitting by TCEQ. Construction activities would be required to obtain a CGP and use BMPs to ensure that soils disturbed during construction activities do not impact nearby water bodies. An ESCP, which includes BMPs (e.g., silt fences, straw bales) to manage stormwater flow, minimize sedimentation, and protect surface water quality would be implemented. Ensuring onsite stormwater infiltration during construction activities, as required by EISA Section 438, would sustain groundwater recharge and minimize stormwater runoff. Implementation of these stormwater management control would minimize potential adverse impacts including erosion and sedimentation. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from construction equipment would not be expected to reach the groundwater table given prompt responses to potential discharges.

Long-term, minor, adverse impacts on groundwater resources would occur from the increased demand for potable water for the proposed HDOC facility.

Noise. Short-term, minor, adverse impacts on the noise environment would occur from Project C2. There would be a slight increase in the overall noise levels from construction. As described in **Section 4.2.4**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between 500 and 4,000 ft from the source, depending on the type of equipment being used. Because the project site is approximately 450 ft from the nearest residence, noise associated with construction activities for this project could be above 65 dBA when it reaches the receptor. Noise impacts from this project would be temporary during construction. No long-term impacts on the ambient noise environment would be expected from Project C2.

Geological Resources. Short- and long-term, negligible to minor, adverse impacts on soils would be expected from debris removal, site preparation (grading and excavating), construction, and site restoration under Project C2. Short-term impacts during construction would result from disturbance of soils, clearing of vegetation, grading, paving, and excavation. Clearing of vegetation would increase erosion and sedimentation potential. Soils would be compacted, and soil structure disturbed and modified. Soil productivity, which is the capacity of the soil to produce vegetative biomass, would decline in disturbed areas and be eliminated in some small areas within the footprint of the HDOC facility for parking or driveway improvements. Loss of soil structure due to compaction from foot and vehicle traffic could result in changes in drainage

patterns. Soil erosion and sediment control measures would be included in site plans to minimize long-term erosion and sediment production at each site. Use of stormwater control measures that favor re-infiltration would minimize the potential for erosion and sediment production as a result of future storm events. Construction would require the use of fuels, oils, lubricants, and chemicals. In the event of a hazardous spill, the environmental protection measures identified in the installation's SPCC Plan would be followed to quickly contain and remediate a spill and minimize the potential impacts on soils.

Biological Resources. Long-term, negligible, adverse impacts on vegetation would occur from Project C2. Construction of the proposed HDOC facility would result in approximately 139,000 ft² of ground disturbance; however, the construction footprint occurs within a previously disturbed area. Impacts would be expected to be negligible because the vegetation is not naturally occurring. Upgraded landscaping including Texas regional native species would be planted around the new HDOC facility. No native vegetation would be permanently lost during the development of Project C2.

Short- and long-term, negligible, adverse impacts on wildlife, to include birds protected under the MBTA, would occur from Project C2. Urban wildlife that may utilize the park and semi-improved area within the proposed physical training trail extension would temporarily avoid the vicinity during construction activities due to intermittent increases in noise from heavy equipment. Studies have documented that traffic and construction noise adversely affects wildlife. Reported noise impacts on wildlife included hearing loss, an increase in stress hormones, altered behaviors, interference with communication during breeding activities, differential sensitivity to different frequencies, and deleterious impacts on food supply or other habitat attributes (Forman and Alexander 1998). The wildlife habitat within the project area is of low quality because the area is highly developed. Species that would use this area are urban-adapted and would likely return to normal behavior once construction is complete and the HDOC is operational.

Cultural Resources. Short- and long-term, indirect, minor, adverse impacts on cultural resources would occur from Project C2 from construction and operational noise and visual impacts on the Fort Sam Houston NHL. The proposed new HDOC facility would be constructed within the Fort Sam Houston NHL in an open area north of the Quadrangle and within the viewshed of the Quadrangle (Building 16), which is individually listed in the NRHP. The new HDOC facility would be designed to ensure compatibility with the character-defining qualities of the district, minimizing the long-term visual impact of the new construction on the historic district. Construction activities would introduce audible and visual elements out of character with the Fort Sam NHL, resulting in an adverse impact on the district. Development of the proposed HDOC facility at this location was approved through an MOA with the Texas SHPO outlining mitigation measures for an ongoing nearby unaccompanied enlisted personnel housing project (JBSA 2016c). As the planning process and for Project C2 matures and project details become more refined, Section 106 consultation with Texas SHPO, NPS, and tribes would continue as necessary and an MOA outlining mitigation measures determined during consultation would be developed.

Infrastructure and Transportation. Short-term, minor, adverse impacts on traffic circulation would be expected from construction activities because of potential road and lane closures. The proposed HDOC facility would be located north of the Quadrangle (see **Figure 2-6**); and involve construction of new utilities, stormwater infrastructure, and paved areas. Interruptions in utilities could occur from connecting the new HDOC facility. Debris produced from construction that cannot be recycled or reused would be disposed of in nearby landfills, which would permanently decrease landfill capacity.

Long-term, negligible, adverse impacts on utilities would be expected because of the additional infrastructure and increase in building space and utility use. Long-term, minor, adverse impacts on the stormwater system at JBSA-SAM would be expected from the increase of 113,000 ft² of impervious surfaces associated with the HDOC facility.

Long-term, minor, beneficial impacts on infrastructure at JBSA-SAM would occur following completion of the new HDOC facility and consolidation of infrastructure because the current facility infrastructure and capacity is not adequate to fulfill ARNORTH mission requirements.

Safety. Short-term, negligible, adverse impacts on health and safety could occur during construction of Project C2. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adhering to established federal, state, and USAF safety regulations and JBSA-SAM management plans. Construction contractors would establish and maintain health and safety programs for their workers. Construction workers would be required to wear PPE such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Fencing and signage would be used to manage accessibility and identify construction areas. Transportation of construction materials would occur during nonpeak hours using alternative routes when possible to alleviate increased traffic on heavier traveled roadways.

Hazardous Materials and Wastes. Short-term, negligible, adverse impacts would occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during facility construction and maintenance associated with Project C2. Hazardous materials that could be used include concrete, asphalt, paints, solvents, preservatives, and sealants. Hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in vehicles and equipment supporting facility construction. Contractors would be responsible for the disposal of hazardous wastes in accordance with federal and state laws. All hazardous materials, petroleum products, and hazardous wastes used or generated during construction would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with applicable regulations to minimize the potential for releases. All construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed.

4.3.2.2 PROJECT I2: STOREFRONT PARKING UPGRADE

Land Use. Long-term, minor, beneficial impacts on land use in the Main Street District would occur from Project I2. The proposed upgrade to storefront parking would occur in an area designated as housing unaccompanied as identified in the Main Street District ADP and 2018 JBSA IDP. Land use designations may need to be changed to administrative to accommodate

the administrative functions of the storefronts; however, this would not result in a land use incompatibility or adverse impact, and construction of the storefront parking would occur in accordance with existing land use policies. Construction of the storefront parking would include demolition of Buildings 260 and 261 as well as a smaller parking area. Beneficial impacts on land use would also result from efficient use of installation land through demolition of old, underused facilities. Project I2 would have no impact on off-installation land use.

Air Quality. Short-term, minor, adverse impacts on air quality would occur from construction of the proposed upgrade to storefront parking. Construction activities would produce criteria pollutants and GHGs during demolition of Buildings 260 and 261, site grading and paving, which would be limited to 2023. As part of Project I2, Buildings 260 and 261 would be demolished and heat from natural gas-fired furnaces would no longer be required for those buildings, resulting in a reduction of air emissions. Annual air emissions for Project I2 were estimated using USAF’s ACAM and are summarized in **Table 4-8**. Annual air emissions would be less than the 100 tpy *de minimis* threshold; therefore, Project I2 would not require a General Conformity analysis.

Long-term, minor, beneficial impacts would occur from the reduction in annual air emissions.

Table 4-8. Air Emissions from Alternative I2

Action	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}	Year
Construct Parking	0.298	1.664	1.936	0.004	8.484	0.076	387.6	2023
Discontinue Heat from Buildings 260 and 261	-0.001	-0.017	-0.014	<0.001	-0.001	-0.001	-20.5	2024 and later

Note: All values are in tpy.

Water Resources. Short-term, negligible, adverse impacts on surface waters could occur from Project I2. Construction and demolition activities would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Project I2 would disturb more than 1 acre of land and, therefore, would be subject to NPDES permitting by TCEQ. Construction activities would be required to obtain a CGP and use BMPs to ensure that soils disturbed during ground-disturbing activities do not impact nearby water bodies. An ESCP, which includes BMPs (e.g., silt fences, straw bales) to manage stormwater flow, minimize sedimentation, and protect surface water quality would be implemented. Ensuring onsite stormwater infiltration during construction activities, as required by EISA Section 438, would sustain groundwater recharge and minimize stormwater runoff. Implementation of these stormwater management controls would minimize potential adverse impacts including erosion and sedimentation. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from construction equipment would not be anticipated to reach the groundwater table with prompt responses to potential discharges. No impacts on groundwater would occur from Project I2.

Noise. Short-term, minor, adverse impacts on the noise environment would occur from Project I2. There would be a slight increase in overall noise levels from construction. As described in **Section 4.2.4**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between 500 and 4,000 ft from the source, depending on the type of

equipment. Because the project site is approximately 1,000 ft from the nearest residence, most noise associated with construction activities for this project would likely be at or below 65 dBA before it reaches the receptor. Noise impacts from this project would be temporary during construction. No long-term impacts on the ambient noise environment would be expected from Project I2.

Geological Resources. Short- and long-term, minor, adverse impacts on soils would occur from Project I2. Short-term impacts during construction would result from disturbance of soils, clearing of vegetation, grading, and paving. Clearing of vegetation would increase erosion and sedimentation potential. Long-term, minor, adverse impacts would occur because soils would be compacted, and soil structure disturbed and modified. Soil productivity, which is the capacity of the soil to produce vegetative biomass, would decline in disturbed areas and be eliminated in those areas within the footprint of the additional paved parking lot and roadways. Soil erosion and sediment control measures would be included during construction and in site plans to minimize long-term erosion and sediment production at each site. Use of stormwater control measures that favor infiltration would minimize the potential for erosion and sediment production during future storm events.

Biological Resources. Short- and long-term, negligible, adverse impacts on vegetation would occur from Project I2. The construction footprint of the proposed upgrade to storefront parking and associated demolition of Buildings 260 and 261 occurs within a previously disturbed area that contains mostly impervious surfaces. There are small areas of landscaped/semi-improved vegetation that would be temporarily or permanently removed; however, the impact is expected to be negligible because the vegetation is not naturally occurring. Upgraded landscaping including Texas regional native species would be planted around the storefront parking. No native vegetation would be permanently lost as a result of Project I2.

No impact on wildlife, to include birds protected by the MBTA, would occur from Project I2. The project area is mostly developed with little to no available habitat for urban wildlife to use for foraging. The proposed upgrade to storefront parking would not change the area that wildlife may utilize. The wildlife habitat within the project area is low quality because the area is highly developed.

Cultural Resources. Short- and long-term, direct and indirect, minor to major, adverse impacts on cultural resource would occur from building demolition under Project I2. Upgrades to the storefront parking would require demolition of Buildings 260 and 261, which are contributing resources of the Fort Sam Houston NHL. The demolition of Building 260 is proposed under Project D2 and is discussed separately in **Section 4.3.2.3**. Building 261 was originally a boot shop built in 1908 during construction of the Cavalry and Artillery Post. The building is still used as a shop. JBSA-SAM would document Building 261, which is proposed for demolition under Project D7 (see **Section 5**), in accordance with HABS standards to mitigate the impact. With this mitigation impacts would be reduced to less than significant, and building demolition under Project I2 would have a long-term, direct, moderate, adverse impact on the Fort Sam Houston NHL. Building demolition would also have a short-term, minor adverse impact on the Fort Sam Houston NHL due to the temporary introduction of construction noise and activity. The creation of a new parking area would not be expected to have additional adverse impacts on the Fort

Sam Houston NHL. Aside from the two historic buildings, the area consists of parking areas and roadway that have already modified the historic landscape in this area.

Project I2 would have adverse effects on historic properties under Section 106 of the NHPA due to the accompanying proposed demolition of Building 261. These effects would be mitigated to less than significant with the preparation of HABS documentation of the buildings and development of an MOA. As the planning process for Project I2 matures and project details become more refined, Section 106 consultation with the Texas SHPO, NPS, and tribes would commence to determine and implement final mitigation measures.

Infrastructure and Transportation. Short-term, minor, adverse impacts on infrastructure and transportation would be expected from Project I2. Construction of the storefront parking would include demolition of Buildings 260 and 261 as well as a smaller parking area. To accommodate parking needs during construction, installation personnel traveling to the storefronts would be directed to alternate parking areas. Although there is sewer, stormwater, electric, and water main lines beneath the parking lot, site construction activities would be superficial and no impacts on these utilities would be expected. Adverse impacts on utilities would be expected because of possible interruptions from disconnecting Buildings 260 and 261 from electric, natural gas, water, and communications utilities prior to demolition. Debris generated during demolition activities that is not recycled would be landfilled, which would permanently decrease the local landfill capacity resulting in a long-term, minor, adverse impact; however, road and parking lot demolition would create debris that could be recycled into asphalt or other roadway materials.

Long-term, minor, beneficial impacts on transportation would occur from Project I2 because the reconfiguration of the road and addition of new parking spaces would allow for enhanced traffic flow and parking ease, and would be able to accommodate 502 FSG personnel relocation.

Safety. Short-term, minor, adverse impacts on health and safety could occur during demolition and construction under Project I2. Demolition and construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adhering to established federal, state, USAF safety regulations and JBSA-SAM management plans. Construction contractors would establish and maintain health and safety programs for their workers. Construction workers would be required to wear PPE such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Fencing and signage would be used to manage accessibility and clearly identify construction areas. Transportation of construction materials would occur during nonpeak hours using alternative routes when possible to alleviate increased traffic on heavier traveled roadways.

Demolition of Buildings 260 and 261 and an existing parking lot would need to occur prior to expanding, reconfiguring, and constructing the storefront parking. Because of the age of the buildings, materials such as ACMs, LBP, and PCBs could be present. **Section 4.2.10** provides guidance on the handling and disposal of these materials.

Long-term, negligible to minor, beneficial impacts on safety would be expected from the removal of ACM, LBP, and PCB materials, thus reducing the potential for exposure to personnel.

Hazardous Materials and Wastes. Short-term, negligible, adverse impacts would occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during demolition, construction, and maintenance associated with Project I2. Hazardous materials that could be used include asphalt, concrete, fertilizers, herbicides, preservatives, and solvents. Hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in vehicles and equipment supporting demolition and construction. Demolition of Buildings 260 and 261 and construction of the storefront parking would generate negligible to minor quantities of hazardous wastes. Contractors would be responsible for the disposal of hazardous wastes in accordance with federal and state laws. All hazardous materials, petroleum products, and hazardous wastes used or generated during construction would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with applicable regulations to minimize the potential for releases. All construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed.

Short-term, negligible, adverse impacts on toxic substances are would occur from the proposed demolition of Buildings 260 and 261, which were constructed in 1908 and could contain ACMs, LBP, and PCBs. Surveys and appropriate abatement for these substances would be completed, as necessary, by a certified contractor prior to work activities to ensure that appropriate measures are taken to reduce potential exposure to, and release of, these substances. Contractors would wear appropriate PPE and would be required to adhere to all federal, state, and local regulations as well as JBSA's management plans for toxic substances. All ACM- and LBP-contaminated debris would be disposed of at a USEPA-approved landfill.

Long-term, negligible, beneficial impacts through demolition would occur from reducing the potential for future human exposure to and the amount of ACMs, LBP, and PCBs to maintain at JBSA-SAM.

4.3.2.3 PROJECT D2: DEMOLISH BUILDING 260

Land Use. Long-term, minor, beneficial impacts on land use in the Main Street District would occur from Project D2. The proposed demolition of Building 260 would occur in an area designated as housing unaccompanied as identified in the Main Street District ADP and 2018 JBSA IDP. Demolition of Building 260 is necessary for the construction of the Storefront parking project (Project I2). Land use designations may need to be changed to administrative to accommodate the administrative functions of the storefronts; however, this would not result in a land use incompatibility or adverse impact, and demolition of Building 260 would occur in accordance with existing land use policies. Beneficial impacts on land use would also result from efficient use of installation land through demolition of aging, underused facilities. Project D2 would have no impact on off-installation land use.

Air Quality. Short-term, minor, adverse impacts on air quality would occur from the proposed demolition of Building 260 under Project D2. Demolition activities would produce criteria pollutants and GHGs when demolishing the facility and grading the area, which would be limited to 2022. Annual air emissions for Project D2 were estimated using USAF's ACAM and are summarized in **Table 4-9**. Annual air emissions would be less than the 100 tpy *de minimis* threshold; therefore, Project D2 would not require General Conformity analysis.

Long-term, minor, beneficial impacts on air quality would occur because heating the facility using a natural gas-fired furnace would no longer be required which would result in an annual reduction in air and GHG emissions.

Table 4-9. Air Emissions from Alternative D2

Action	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}	Year
Demolish Building 2750	0.074	0.457	0.490	0.001	0.062	0.019	106.3	2022
Discontinue Heat	<0.001	-0.009	-0.007	<0.001	-0.001	-0.001	-10.2	2023 and later

Note: All values are in tpy.

Water Resources. Short-term, negligible, adverse impacts on surface waters could occur under Project D2. Demolition activities would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Additionally, the implementation of BMPs and stormwater management controls would minimize potential adverse effects including erosion and sedimentation. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from construction equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges. No impacts on groundwater would occur from Project D2.

Noise. Short-term, minor, adverse impacts on the noise environment would occur from Project D2. There would be a slight increase in overall noise levels from demolition. As described in **Section 4.2.4**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between 500 and 4,000 ft from the source, depending on the type of equipment. Because the project site is approximately 1,200 ft from the nearest residence, most noise associated with demolition activities for this project would likely be at or below 65 dBA before it reaches the receptor. Noise impacts from this project would be temporary during demolition. No long-term impacts on the ambient noise environment would be expected from Project D2.

Geological Resources. Short-term, minor, adverse impacts on soils would occur from soil disturbance during demolition of Building 260. Impacts would involve vegetation removal and compaction of surrounding soils under the weight of demolition equipment, which would result in increased soil erosion and stormwater runoff during demolition activities. Adverse impacts would be minimized with the implementation of environmental protection measures including erosion and stormwater management practices to contain soil and runoff on-site. No impacts on topography would be anticipated.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would occur from building demolition under Project D2. The construction footprint occurs entirely within a previously disturbed area that contains mostly impervious surfaces. There are small areas of landscaped/semi-improved vegetation that would be temporarily or permanently removed; however, the impact is expected to be negligible because the vegetation is not naturally occurring. Semi-improved vegetation surrounding the demolition may be restored, as practicable, as part of landscaping efforts. No native vegetation would be permanently lost as a result of Project D2.

Short-term, negligible, adverse impacts on wildlife, to include birds protected under the MBTA, would occur from Project D2. Urban wildlife that may utilize the area near Building 260 would temporarily avoid the vicinity during demolition activities due to intermittent increases in noise from heavy equipment. Studies have documented that traffic and construction noise adversely affects wildlife. Reported noise impacts on wildlife included hearing loss, increase in stress hormones, altered behaviors, interference with communication during breeding activities, differential sensitivity to different frequencies, and deleterious impacts on food supply or other habitat attributes (Forman and Alexander 1998). The wildlife habitat near Building 260 is low quality because the area is highly developed. Species that would use this area are urban-adapted and would likely return to normal behavior once demolition is complete.

Cultural Resources. Long-term, direct, minor to major, adverse impacts on cultural resources would occur from the proposed building demolition under Project D2. Building 260 is a contributing resource of the Fort Sam Houston NHL. Built in 1908 as part of the Cavalry and Artillery Post, Building 260 originally functioned as a stable and guard house. The building is currently used for installation operations support. To mitigate the building's demolition and reduce impacts to less than significant, JBSA-SAM would document Building 260 in accordance with HABS standards. With this mitigation, the demolition of Building 260 would have a long-term, direct, moderate, adverse impact on the Fort Sam Houston NHL. Demolition noise and activities would also have short-term, minor adverse impacts on the Fort Sam Houston NHL.

Project D2 would have adverse effects on historic properties under Section 106 of the NHPA. As the planning process matures and project details become more refined, Section 106 consultation with the Texas SHPO, NPS, and tribes would commence. Adverse impacts would be mitigated through the preparation of HABS documentation of Building 260, development of an MOA, preparation of interpretive signage or brochures, or other measures identified through the consultation process.

Infrastructure and Transportation. Short-term, minor, adverse impacts on infrastructure and transportation would occur from Project D2. Adverse impacts on utilities would be expected because of possible interruptions from disconnecting Building 260 from electric, natural gas, water, and communications utilities prior to demolition. Debris generated during demolition activities that is not recycled would be landfilled, which would permanently decrease the local landfill capacity resulting in a long-term, minor, adverse impact.

Long-term, minor, beneficial impacts on infrastructure and transportation would occur from demolishing Building 260 because the building is considered in poor condition. Because of its poor condition, Building 260 is no longer an efficient or effective part of the infrastructure system at JBSA-SAM. Its demolition would allow the installation to make more efficient use of the land area by replacing the building with additional parking spaces to accommodate 502 FSG personnel.

Safety. Short-term, minor, adverse impacts on health and safety could occur during demolition under Project D2. Demolition activities pose an increased risk of demolition-related accidents, but this level of risk would be managed by adhering to established federal, state, USAF safety regulations, and JBSA-SAM management plans. Demolition contractors would establish and maintain health and safety programs for their workers. Demolition workers would be required to

wear PPE such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Fencing and signage would be used to manage accessibility and clearly identify demolition areas. Transportation of construction materials would occur during nonpeak hours using alternative routes when possible to alleviate increased traffic on heavier traveled roadways.

Because of the age of Building 260, materials such as ACM, LBP, and PCBs could be present. **Section 4.2.10** provides guidance on the handling and disposal of these materials. Long-term, negligible to minor, beneficial impacts on safety would be expected from the removal of ACM, LBP, and PCB materials, thus reducing the potential for exposure to personnel.

Hazardous Materials and Wastes. Short-term, negligible, adverse impacts would occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during building demolition under Project D2. Hazardous materials that could be used include solvents, preservatives, and sealants. Hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in vehicles and equipment supporting facility demolition. Demolition of Building 260 would generate negligible quantities of hazardous wastes. Contractors would be responsible for the disposal of hazardous wastes in accordance with federal and state laws. All hazardous materials, petroleum products, and hazardous wastes used or generated during demolition would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with applicable regulations to minimize the potential for releases. All construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed.

Short-term, negligible, adverse impacts from toxic substances might occur from the proposed demolition of Building 260, which was constructed in 1908 and could contain ACMs, LBP, and PCBs. Surveys and appropriate abatement for these substances would be completed, as necessary, by a certified contractor prior to work activities to ensure that appropriate measures are taken to reduce potential exposure to, and release of, these substances. Contractors would wear appropriate PPE and would be required to adhere to all federal, state, and local regulations as well as JBSA's management plans for toxic substances. All ACM- and LBP-contaminated debris would be disposed of at an USEPA-approved landfill.

Long-term, negligible to minor, beneficial impacts through demolition would occur from reducing the potential for future human exposure to and the amount of ACMs, LBP, and PCBs to maintain at JBSA-SAM.

4.3.2.4 PROJECT N2: QUADRANGLE PARK

Land Use. Long-term, minor to moderate, beneficial impacts on land use in the Main Street District would occur from Project N2. The proposed Quadrangle Park would be constructed in an area designated as administrative as identified in the Main Street District ADP and 2018 JBSA IDP. Green space and recreation areas in the Main Street District would increase with this project. Land use designations would need to be changed to open space/buffer zone. Construction of the Quadrangle Park would provide additional connected parks and recreational spaces throughout the Main Street District and would occur in accordance with existing land use

policies. Construction of the park area in the Quadrangle would also address a park creation mitigation measure negotiated with the SHPO during Section 106 consultation for the nearby unaccompanied enlisted personnel housing project. Project N2 would convert S-6 Road into a pedestrian only path, creating the beginning of a walking path leading from the Quadrangle north to Wilson Street. Project N2 would have no impact on off-installation land use.

Air Quality. Short-term, minor, adverse impacts on air quality would occur from the proposed demolition of an existing parking lot and construction of the Quadrangle Park under Project N2. Construction activities would produce criteria pollutants and GHGs when demolishing the parking lot and grading the area, which would be limited to 2022. Because operation of the park would not warrant any sources of air emissions (e.g., heaters or generators), no long-term impacts on air emissions would occur. Annual air emissions for Project N2 were estimated using USAF’S ACAM and are summarized in **Table 4-10**. Air emissions would be less than the 100 tpy *de minimis* threshold; therefore, Project N2 would not require a General Conformity analysis.

Table 4-10. Air Emissions from Alternative N2

Action	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}	Year
Construct Park	0.162	1.020	1.034	0.003	9.219	0.042	253.0	2022

Note: All values are in tpy.

Water Resources. Short-term, negligible, adverse impacts on surface waters could result from Project N2. Construction activities would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Project N2 would disturb more than 1 acre of land and, therefore, would be subject to NPDES permitting by TCEQ. Construction activities would be required to obtain a CGP and use BMPs to ensure that soils disturbed during ground-disturbing activities do not impact nearby water bodies. An ESCP, which includes BMPs (e.g., silt fences, straw bales) to manage stormwater flow, minimize sedimentation, and protect surface water quality would be implemented. Ensuring onsite stormwater infiltration during construction activities, as required by EISA Section 438, would sustain groundwater recharge and minimize stormwater runoff. Implementation of these stormwater management controls would minimize potential adverse impacts including erosion and sedimentation. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from construction equipment would not be anticipated to reach the groundwater table with prompt responses to potential discharges. No impacts on groundwater would be expected as a result of Project N2.

Noise. Short-term, moderate, adverse impacts on the noise environment would occur from Project N2. There would be a slight increase in overall noise levels from construction. As described in **Section 4.2.4**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between 500 and 4,000 ft from the source, depending on the type of equipment. However, the project site is located within 500 ft of residential units. Demolition and construction equipment could introduce moderate impacts due to the proximity to noise sensitive receptors. Because the noise would be temporary during construction and appropriate noise attenuation equipment would be used where applicable, impacts would not be

significant. No long-term impacts on the ambient noise environment would be expected from Project N2.

Geological Resources. Short-term, negligible, adverse and long-term, beneficial impacts on soils would be expected from Project N2. Impacts during construction would result from disturbance of soils, clearing of vegetation, and grading. Clearing of vegetation would increase erosion and sedimentation potential. Soil erosion and sediment control measures would be included in site plans to minimize long-term erosion and sediment production at each site. Use of stormwater-control measures that favor infiltration would minimize the potential for erosion and sediment production as a result of future storm events.

Long-term, beneficial impacts would occur from removal of impervious surfaces such as the parking lot area and adding vegetation to barren land.

Biological Resources. Short-term, negligible, adverse impacts on vegetation would occur from Project N2. Approximately 230,000 ft² of landscaped and semi-improved vegetation would be temporarily impacted by the construction of the proposed Quadrangle Park; however, the impact is expected to be negligible because the vegetation is not naturally occurring and much of the open space would remain. New landscaping including Texas regional native species would be planted.

Short- and long-term, negligible, adverse and beneficial impacts on wildlife, to include birds protected under the MBTA, would occur from Project N2. Urban wildlife that may utilize the park and semi-improved area within the proposed Quadrangle Park would temporarily avoid the vicinity during construction activities due to intermittent increases in noise from heavy equipment. Studies have documented that traffic and construction noise adversely affects wildlife. Reported noise impacts on wildlife included hearing loss, increase in stress hormones, altered behaviors, interference with communication during breeding activities, differential sensitivity to different frequencies, and deleterious impacts on food supply or other habitat attributes (Forman and Alexander 1998).

Long-term beneficial impacts on wildlife would occur from the construction of a park. The park would create open space and vegetated habitat within an area previously largely impervious.

Cultural Resources. Long-term, direct, moderate, beneficial impacts on cultural resources would occur from Project N2 from the re-creation of historically open space in the Fort Sam Houston NHL. The project would remove a parking area adjacent to the Quadrangle (Building 16) and turn the parking area and adjacent open space into a formal park area. The project would improve the historic setting of both the Fort Sam Houston NHL and the Quadrangle, which is individually eligible for listing in the NRHP. The project fulfills a mitigation commitment negotiated with the Texas SHPO during Section 106 consultation on a previous unaccompanied enlisted personnel housing project and would have no adverse effect on historic properties (JBSA 2016c). Consultation with the Texas SHPO would continue to ensure that the project fulfills the mitigation commitment. Construction noise and activity would have a short-term, indirect, minor adverse impact on the Fort Sam Houston NHL.

Infrastructure and Transportation. Short-term, minor, adverse impacts on parking could occur from Project N2. During removal of the existing parking lot, vehicles would be redirected to park elsewhere and permanent replacement parking would be constructed north of the existing parking lot to accommodate parking requirements.

Long-term, negligible, adverse impacts on on-installation roadways would occur from the conversion of S-6 Road into a pedestrian-only path. Other surrounding roads such as Museum Drive, Liscum Road, and N. New Braunfels Avenue could be used to accommodate the revised traffic circulation.

Long-term, minor, beneficial impacts on transportation and infrastructure would occur from Project N2. The addition of a public park space would contribute to the infrastructure goals of the Main Street ADP. The new park space would potentially promote increased use of existing and proposed pedestrian facilities. The addition of the pedestrian path along S-6 Road would increase pedestrian connectivity and allow more pedestrian mobility throughout the entire installation.

Safety. Short-term, negligible, adverse impacts on health and safety could occur during demolition and construction under Project N2. Demolition and construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adhering to established federal, state, USAF safety regulations, and JBSA-SAM management plans. Construction contractors would establish and maintain health and safety programs for their workers. Construction workers would be required to wear PPE such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Fencing and signage would be used to manage accessibility and clearly identify construction areas. Transportation of construction materials would occur during nonpeak hours using alternative routes when possible to alleviate increased traffic on heavier traveled roadways.

Long-term, beneficial impacts on safety would occur from the creation of a formal park area and the creation of a walking path from the Quadrangle to Wilson Way, providing improved accessibility.

Hazardous Materials and Wastes. Short-term, negligible, adverse impacts would occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during construction and maintenance associated with Project N2. Hazardous materials that could be used include asphalt, concrete, fertilizers, herbicides, preservatives, and solvents. Hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in vehicles and equipment supporting demolition and construction. Construction would generate negligible to minor quantities of hazardous wastes. Contractors would be responsible for the disposal of hazardous wastes in accordance with federal and state laws. All hazardous materials, petroleum products, and hazardous wastes used or generated during construction would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with applicable regulations to minimize the potential for releases. All construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed.

No short- or long-term impacts on toxic substances are expected to occur under Project N2. No demolition of materials potentially containing toxic substances is proposed, and new construction is not likely to include the use of toxic substances because federal policies and laws limit their use in building construction applications.

4.4 Environmental Consequences of the No Action Alternative

Land Use. Under the No Action Alternative, JBSA-SAM would not implement the representative projects identified under the Proposed Action. Existing facilities would remain in use and land use conditions (e.g., reduced land use efficiency) within the Corporate and Main Street Districts would remain unchanged and result in long-term, minor, adverse impacts.

Air Quality. Under the No Action Alternative, JBSA-SAM would not implement the representative projects identified under the Proposed Action. Existing facilities would remain in use, air quality conditions within the Corporate and Main Street Districts would remain unchanged, and minor impacts from ongoing use of emission sources would continue to occur.

Water Resources. Under the No Action Alternative, JBSA-SAM would not implement the representative projects identified under the Proposed Action. Existing facilities would remain in use and water resources conditions within the Corporate and Main Street Districts would remain unchanged.

Noise. Under the No Action Alternative, JBSA-SAM would not implement the representative projects identified under the Proposed Action. Existing facilities would remain in use and noise conditions within the Corporate and Main Street Districts would remain unchanged.

Geological Resources. Under the No Action Alternative, JBSA-SAM would not implement the representative projects identified under the Proposed Action. Existing facilities would remain in use and geological conditions within the Corporate and Main Street Districts would remain unchanged.

Biological Resources. Under the No Action Alternative, JBSA-SAM would not implement the representative projects identified under the Proposed Action. Existing facilities would remain in use and the existing conditions for biological resources within the Corporate and Main Street Districts would remain unchanged.

Cultural Resources. Under the No Action Alternative, JBSA-SAM would not implement the representative projects identified under the Proposed Action. JBSA-SAM would be required to negotiate a new mitigation commitment under Section 106 of the NHPA to resolve adverse effects from a separate unaccompanied enlisted personnel housing project because Project N2 (Quadrangle Park) would not be constructed. Existing facilities would remain in use and the existing conditions for cultural resources within the Corporate and Main Street Districts would remain unchanged.

Infrastructure and Transportation. Under the No Action Alternative, JBSA-SAM would not implement the representative projects identified under the Proposed Action. Existing facilities would remain in use, infrastructure would not be improved, and some facilities such as Buildings 260 and 261 would remain in poor condition, resulting in long-term, minor impacts.

Safety. Under the No Action Alternative, JBSA-SAM would not implement the representative projects identified under the Proposed Action. Existing facilities would remain in use and the existing conditions for safety would remain unchanged.

Hazardous Materials and Wastes. Under the No Action Alternative, JBSA-SAM would not implement the representative projects identified under the Proposed Action. Additional quantities of hazardous materials, petroleum products, and hazardous wastes associated with construction and demolition would not be used, stored, or generated, and the management of hazardous materials, petroleum products, and hazardous wastes would not change. Toxic substances in the buildings proposed for demolition would remain and would continue to require maintenance by USAF personnel. Existing facilities would remain in use and the existing conditions for hazardous materials and wastes would remain unchanged.

4.5 Summary of Environmental Impacts

Table 4-11 summarizes the impact characterizations from the Proposed Action and No Action Alternative.

Table 4-11. Summary of Impacts from the Representative Projects under the Proposed Action and the No Action Alternative

Project ID	Impacts by Resource Area									
	Land Use	Air Quality	Water Resources	Noise	Geological Resources	Biological Resources	Cultural Resources	Infrastructure and Transportation	Safety	Hazardous Materials and Waste
Corporate District										
C1	◆■+	◇- ◆+	○●-	◇-	○◇●◆-	○●-	◇◆-	◇◆- ◆+	○- ◆◆+	○- ◆◆+
I1	◆■+	◇- ◆+	○-	○◇●◆-	○◇-	○●-	◆■▼-	◇- ◆+	◇- ◆◆+	○- ◆◆+
D1	◆■+	◇- ◆+	○-	□-	◇- ●+	○◇●◆-	◆■▼-	◇◆- ◆+	◇- ◆+	○◇- ◆◆+
N1	◆+	◇-	○-	□-	○◇-	○●-	○◇●◆-	○◇- ◆+	○◇- ◆+	○-
Main Street District										
C2	◆+	◇-	○◆-	◇-	○◇●◆-	○●-	◇◆-	◇●- ◆+	○-	○-
I2	◆+	◇- ◆+	○-	◇-	◇◆-	○●-	◆■▼-	◇- ◆+	◇- ◆◆+	○- ●+
D2	◆+	◇- ◆+	○-	◇-	◇-	○-	◆■▼-	◇- ◆+	◇- ◆◆+	○- ◆◆+
N2	◆■+	◇-	○-	□-	○- ●+	○●- ○●+	■+	◇●- ◆+	○- ◆+	○-
Proposed Action	◆■+	◇- ◆+	○●◆-	○◇□●◆-	○◇●◆- ●+	○◇●◆- ○●+	◇◆■▼- ■+	◇●- ◆+	○◇- ◆◆+	○◇- ◆◆+
No Action	◆-	◆-	/	/	/	/	/	◆-	/	/

Impact Symbols:

- (-) Adverse Impacts (+) Beneficial Impacts (/) No impacts
- (○) Short-term, negligible impacts (●) Long-term, negligible impacts
- (◇) Short-term, minor impacts (◆) Long-term, minor impacts
- (□) Short-term, moderate impacts (■) Long-term, moderate impacts
- (▼) Long-term, major impacts, reduced to less than significant with mitigation

5. Cumulative Impacts, Best Management Practices, and Unavoidable Adverse Effects

5.1 Cumulative Effects

CEQ regulations stipulate that the cumulative impacts analysis in a NEPA document should consider the potential environmental consequences resulting from “the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR § 1508.7). CEQ guidance in considering cumulative impacts affirms this requirement, stating that the first steps in assessing cumulative impacts involve defining the scope of the other actions and their interrelationship with a proposed action. The scope must consider other projects that coincide with the location and timetable of a proposed action and other actions. Cumulative impacts analyses must also evaluate the nature of interactions among these actions (CEQ 1997).

Actions that have the potential to interact with the Proposed Action at JBSA-SAM are included in this cumulative impacts analysis. This approach enables decisionmakers to have the most current information available so that they can evaluate the range of environmental consequences that would result from the proposed construction and infrastructure projects.

In this section, USAF has identified past, present, and reasonably foreseeable future actions for JBSA-SAM and the surrounding region. The assessment of cumulative impacts begins with defining the scope of other project actions and the potential interrelationship they may have with the proposed action (CEQ 1997). The scope of the analysis considers other projects located on and off of the installation that coincides with the location and timetable of implementation of the Proposed Action. Cumulative impacts can arise from single or multiple actions and through additive or interactive processes acting individually or in combination with each other. Actions that are not part of the proposal, but that could be considered as actions connected in time or space (40 CFR § 1508.25), could include projects that affect areas on or near JBSA-SAM. This EA analysis addresses three questions to identify cumulative impacts:

1. Does a relationship exist such that elements of a proposed action or alternatives might interact with elements of past, present, or reasonably foreseeable actions?
2. If one or more of the elements of the alternatives and another action could be expected to interact, would the alternative affect or be affected by impacts of the other action?
3. If such a relationship exists, does an assessment reveal any potentially significant impacts not identified when the alternative is considered alone?

For the alternatives under consideration to have a cumulatively significant impact on an environmental resource, two conditions must be met. First, the combined impacts of all identified past, present, and reasonably foreseeable projects, activities, and processes on a resource, including the impacts of a proposed action, must be significant. Second, a proposed action must make a substantial contribution to that significant cumulative impact. Proposed actions of limited scope do not typically require as comprehensive an assessment of cumulative

impacts as proposed actions that have significant environmental impacts over a large area (CEQ 2005).

In the following sections, evaluation of the cumulative significance is based on the context, intensity, and timing of the Proposed Action, as discussed in **Section 4**, when combined with potential impacts from past, present, and reasonably foreseeable actions. A summary of the potential contribution to cumulative impacts from the Proposed Action and identified cumulative projects is provided.

5.1.1 Projects Identified with the Potential for Cumulative Impacts

The scope of the cumulative impacts analysis involves both timeframe and geographic extent in which impacts could be expected to occur, and a description of what resources could be cumulatively impacted. For the purpose of this analysis, this temporal span of the representative projects is 10 years (i.e., 2021 through 2030).

For most resources, the spatial area for consideration of cumulative impacts is generally the Corporate and Main Street Districts on JBSA-SAM, though a larger area is considered for some resources. An effort was undertaken to identify projects at JBSA-SAM, primarily in the Corporate and Main Street Districts, and in the areas surrounding the installation for evaluation in the context of the cumulative impacts analysis. Only those projects that could potentially result in greater than negligible cumulative impacts when combined with the Proposed Action have been identified.

5.1.1.1 PAST ACTIONS AT JBSA-SAM

For the purposes of this analysis, past projects are defined as actions that occurred on the installation within the last 10 years that have shaped the current environmental conditions of the installation project areas. For many resources, the effects of past actions are not part of the existing environment and are incorporated into the descriptions of the affected environment in **Section 3**. Therefore, past actions are not considered further for cumulative impacts analysis. A list of major past actions follows:

- Base Realignment and Closure Actions – JBSA-SAM received personnel, equipment, and missions from various realignments and closure actions within DoD as a result of realignment actions for JBSA-SAM. These actions were addressed in an EIS completed in 2007 (JBSA-SAM 2007).
- Army and Air Force Exchange Service Lifestyle Center, Fort Sam Houston – construction of a community center to provide merchandise and services to active-duty, guard, reserve members, military retirees, and families of military personnel on JBSA-SAM, specifically within the Corporate and Commercial Planning Districts. These actions were addressed in an EA completed in 2009 (JBSA-SAM 2009).
- Pedestrian/Bicycle Trail Easement through JBSA-SAM – construction of a citywide trail loop over 50 miles long to interconnect bike and pedestrian routes at JBSA-SAM. The Salado – 1604 to Eisenhower Park section, approximately 4.0 miles, has an anticipated completion year of 2020. These actions were addressed in an EA completed in 2017, and the project is currently under construction (JBSA-SAM 2017e; San Antonio 2020a).

- Walters Gate Upgrade – The ACP and gate onto JBSA-SAM from North Walters Road off-post (which turns into Winfield Scott Road on-post) in the southwestern part of the installation was recently upgraded. The project, completed in 2018, included new guardhouses and queuing lanes on Winfield Scott Road prior to its signalized intersection with Wilson Way.

5.1.1.2 PRESENT AND REASONABLY FORESEEABLE FUTURE ACTIONS AT JBSA-SAM

Construction, demolition, and infrastructure upgrades are a continuously occurring activity at JBSA-SAM. There are recently completed, ongoing, or reasonably foreseeable future projects that are summarized in the following text. It is anticipated that construction for these projects will already have begun prior to the completion of this EA or occur concurrently with the projects identified. These projects would be expected to have negligible potential for contributing to cumulative impacts when considered with the Proposed Action and other installation development projects. The actions from these installation development activities are covered by previous NEPA documentation. Identified are recently completed, ongoing, and near future projects which are considered in this cumulative impacts analysis where there is the potential for cumulative impacts follow:

Present Installation Development Activities

- JSBA-SAM Dual Foods Project – An existing fast food restaurant building would be demolished to allow for the construction of a shopping center within the Corporate Planning District.
- Housing Barracks and Mission Command Center at JBSA-SAM – construction of three story enlisted personnel housing barracks and two story mission command center in the Main Street District at JBSA-SAM (JBSA 2016c).
- Fort Sam Houston Master Planning Actions – construction, repair, and renovation of 30 infrastructure projects to meet the changing mission support requirements at JBSA-SAM. These actions are or will mostly take place in the Main Street and Corporate Districts (JBSA-SAM 2010).

Future Actions

Many installation development projects are planned and reasonably foreseeable at JBSA-SAM. In addition to the representative projects, **Appendix C** provides a compilation of all demolition, construction, infrastructure improvement, and natural infrastructure management projects in the Corporate and Main Street Districts that could be completed during the lifespan of this EA as funding becomes available. These projects are reasonably foreseeable, so they are included in this cumulative impacts analysis. **Table 5-1** summarizes the areas of disturbance and changes in impervious surfaces from the representative projects and all other reasonably foreseeable future installation development activities that have been identified. **Table 5-2** summarizes in tabular form the potential environmental consequences associated with the proposed installation development projects that are further detailed in **Appendix C**, but not analyzed as a representative project in **Section 4** of this EA.

Table 5-1. Project Areas and Estimated Changes in Impervious Surfaces for all Present and Reasonably Foreseeable Installation Development Actions

Project Type	Total Project Area (ft ²)	Change in Impervious Surfaces (ft ²)
Representative Projects	1,207,000	+53,000
Other Demolition Projects	22,300	-22,300
Other Construction Projects	281,000	+156,700
Other Infrastructure Improvement Projects	1,425,170	+295,100
Other Natural Infrastructure Projects	0	0
Total	2,935,470	+482,500

Note: Changes in impervious surfaces are not necessarily equivalent to the project area square footage, and portions of some projects would disturb area but not add impervious surfaces.

All demolition and construction activities generally would be expected to result in some increased noise, increased air emissions, the potential for erosion and transport of sediment into surface water bodies, generation of small amounts of hazardous wastes, and generation of construction and demolition waste. All demolition and construction generally would be expected to result in short-term job creation and materials procurement. These types of short-term, construction-related effects would occur regardless of project location and are not constraints in development. In the absence of unique constraints, the potential for environmental effects from a demolition and construction project smaller in scope than those analyzed as representative projects in this IDEA would be expected to result in less than significant environmental impacts.

Table 5-2. Potential Environmental Consequences Associated with Constraints to Development from Non-Representative Projects Included in Appendix C

Project ID and Title	Land Use	Air Quality	Water Resources	Noise	Geological Resources	Biological Resources	Cultural Resources	Infrastructure and Transportation	Safety	Hazardous Materials and Wastes
C3 – Car Park Addition	-	◆	◆	-	◆	-	◆	+	-	◆
C4 – Storefront Plaza	-	◆	◆	-	◆	-	◆	-	◆	◆
C5 – Security Forces Addition	-	◆	◆	-	◆	-	◆	◆	◆	◆
I3 – Martin Luther King Memorial and Sidewalk Network Improvement	-	◆	-	-	-	-	◆	+	-	◆
I4 – Sidewalk Upgrades	-	◆	+	-	-	-	◆	+	-	◆
I5 – Street Connection and Upgrades to Winfield Scott Road	-	◆	-	-	-	-	▼	+	-	◆
I6 – Access Street Crosswalks and Lighting	-	-	-	-	-	-	◆	+	-	◆
I7 – Pole Away Underground Overhead Electrical	-	◆	-	-	◆	-	-	+	◆	◆

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Project ID and Title	Land Use	Air Quality	Water Resources	Noise	Geological Resources	Biological Resources	Cultural Resources	Infrastructure and Transportation	Safety	Hazardous Materials and Wastes
I8 – Dickman and Stanley Roads Connection Upgrade	-	◆	-	-	-	-	◆	+	-	◆
I9 – Security Forces Pedestrian Path	-	-	-	-	-	-	◆	+	-	◆
I10 – Upgraded Car Park	-	◆	+	-	-	-	◆•	+	-	◆
I11 – Sidewalk Upgrades	-	◆	+	-	-	-	◆	+	-	◆
I12 – Walking Park	-	-	-	-	-	-	◆	+	-	◆
I13 – Pole Away Overhead Electrical Lines to Underground	-	◆	-	-	◆	-	-	+	◆	◆
D3 – Demolish Building R162	-	◆	-	-	-	-	-	+	◆	◆ TOX HAZ
D4 - Demolish Physical Evaluation Board, Building 323	-	◆	-	-	-	-	-	+	◆	◆ TOX HAZ
D5 – Demolish Public Affairs Visual Info Building 2750	-	◆	-	-	-	-	◆	+	◆	◆ TOX HAZ
D6 – Demolish Army and Air Force Exchange Service Building 2735	-	◆	-	-	-	-	-	+	◆	◆ TOX HAZ
D7 – Demolish Building 261	-	-	-	-	-	-	▼	+	◆	◆ TOX HAZ
N3 – Neighborhood Dog Parks	◆•	-	-	•	◆	-	◆	◆	◆	- HAZ

Legend:

- No impacts or negligible impacts + Beneficial impacts
 ◆ Potential minor adverse impacts • Potential moderate impacts ▼ Potential major impacts, reduced to less than significant with mitigation

Key:

TOX Might disturb ACM or LBP
 HAZ Change in quantity or storage for hazardous materials or wastes

Off-Installation Cumulative Projects

The environmental impacts of the representative projects are limited to within the installation boundaries. Consequently, it is not anticipated that installation development activities would affect off-installation areas. No specific development projects have been identified in other areas outside of JBSA-SAM that would affect planned installation development activities. The city of San Antonio Planning Department and Bexar County Economic and Community Development work together with JBSA-SAM to develop ADPs to provide planning direction at the land use level within the region. The San Antonio Planning Department is currently working on a project

titled SA Tomorrow, which aims to create a three-pronged planning effort to improve the city by 2040. The three prongs of the plans consist of a comprehensive plan (land use and urban design), sustainability plan (economic, environmental, social), and multimodal transportation plan (all modes of transportation) (San Antonio 2020b).

5.1.2 Cumulative Impacts Analysis

A cumulative impacts analysis must be conducted within the context of the resource areas. The magnitude and context of the effect on a resource area depends on whether cumulative impacts exceeds the capacity of a resource to sustain itself and remain productive (CEQ 1997). The following discusses potential cumulative impacts that could occur as a result of implementing the representative projects and other past, present and reasonably foreseeable future actions. No significant adverse, cumulative impacts were identified in the cumulative impacts analysis.

Land Use. Land use at JBSA-SAM is guided by the JBSA-SAM IDP, and land use in the Main Street and Corporate Districts are guided by their respective ADPs, to ensure safe and compatible development (JBSA 2018a). Cumulatively, implementation of all the installation development projects would be expected to result in long-term, minor to moderate, beneficial impacts at the selected facility locations. Demolition projects would remove aging, outdated facilities and make land available in previously disturbed areas for new construction. Projects D1, C2, I2, and D2 would require a change in land use designations. Cumulative installation development activities would otherwise generally be compatible with existing and future land uses.

Air Quality. The installation development projects would be expected to have cumulative short-term, minor, adverse effects on air quality while demolition and construction activities are occurring. These impacts range from increased emissions and increased traffic to the presence and operation of construction vehicles and equipment.

The Proposed Action and other reasonably foreseeable future projects would generate emissions that would cumulatively result in long-term, negligible, GHG levels. The representative projects would contribute 1,700 tpy of GHG emissions during operation, a fraction of 1 percent of all GHG emissions in the region. Therefore, it is expected that GHG emissions from construction and operation of the Proposed Action and other identified cumulative project would not significantly affect air quality.

Water Resources. Demolition and construction associated with the Proposed Action would not affect ground or surface water. However, population growth on the installation associated with the Proposed Action and other on- and off-installation reasonably foreseeable future projects would translate into added personnel, visitor, and facility requirements for water consumption. These actions would cumulatively contribute to long-term, negligible, adverse impacts on groundwater resources due to the increased demand for water because near-term future population growth is anticipated to be relatively low.

Construction of the Proposed Action and cumulative projects in the ADPs would result in a net increase of approximately 482,500 ft² of impervious surfaces on the installation. Demolition of approximately 279,500 ft² of existing facilities and pavements would help offset additions of

impervious surfaces that would be constructed for the Proposed Action and other reasonably foreseeable future projects.

Noise. Demolition and construction associated with the Proposed Action combined with reasonably foreseeable future projects at JBSA-SAM within the Main Street and Corporate District would occur at different times and different locations over the next several years. Demolition and construction occurring at the same time and in the same vicinity could have short-term, negligible to moderate, adverse cumulative impacts on the noise environment as a result of the Proposed Action at JBSA-SAM. Construction activities would result in short-term, localized increased noise levels. Cumulative impacts from construction noise would not be significant. Some of the on-installation projects would construct new facilities in high noise areas; however, the operation of these new facilities would not cumulatively impact ambient noise on the installation.

Geological Resources. Considered cumulatively, planned installation development activities have the potential for short-term, negligible to minor, adverse impacts on topography, soils, and sediments as a result of vegetation removal, compaction of surrounding soils, and increased soil erosion and sedimentation. Demolition and construction activities occurring at the same time and in the same vicinity could have temporary, minor, adverse cumulative impacts on soil resources, but the implementation of erosion and sediment control BMPs and environmental protection measures would be expected to limit potentially adverse cumulative impacts.

Demolition of pavements and facilities and reconstructing new facilities at those locations would partially offset potentially long-term, adverse, cumulative impacts from construction of facilities by providing new areas of pervious surfaces such as the Quadrangle Park (Project N2).

Biological Resources. Considered cumulatively, planned installation development activities have the potential for short- and long-term, negligible to minor, adverse and beneficial impacts on biological resources (vegetation and wildlife) within the Corporate and Main Districts on JBSA-SAM.

Concurrent demolition and construction activities associated with the Proposed Action and other identified on-installation reasonably foreseeable future projects occurring in the same vicinity could impact wildlife as a result of noise and habitat disturbance. Loud noise from demolition and construction could disturb wildlife resulting in escape or avoidance behaviors; however, these impacts would be temporary. Migratory birds would be expected to temporarily relocate to similar adjacent habitats readily available surrounding JBSA-SAM. BMPs such as conducting species surveys and avoiding construction during nesting season if habitat is present would be implemented to avoid impacts on migratory birds that could be present in the project areas.

Long-term, negligible, adverse impacts could occur from the mortality of small, less mobile terrestrial species (e.g., reptiles, rodents, and small mammals) as a result of a collision with construction equipment. However, wildlife in the project areas would be expected to generally avoid the project areas. As a result, no population level effects would be expected to occur. No impacts on federally listed or state-listed species are expected from the Proposed Action.

Permanent, negligible, adverse impacts would result from the removal of urban habitat. Because the project areas are already largely disturbed, negligible amounts of habitat would be removed. In addition, similar habitat areas are sufficiently available on and surrounding JBSA-SAM. Operation of the proposed facilities would not result in long-term adverse impacts on wildlife because similar activities occur elsewhere on the installation and would not significantly increase baseline noise levels.

Cultural Resources. JBSA-SAM has and continues to meet its stewardship responsibilities towards cultural resources under Section 106 of the NHPA. The installation has an ICRMP that is a reference and planning document for managing and preserving the installation's cultural resources while maintaining mission readiness. The Main Street and Corporate Districts both contain historic districts.

The reasonably foreseeable future projects would not be expected to have adverse impacts on known archaeological resources or Native American sacred sites, and minor to major, adverse impacts on NRHP-eligible architectural resources because of project demolition and construction in the historic districts, adversely affecting historic integrity, landscape patterns, and viewsheds. Projects I5 and D7 involve impacts on viewsheds of historic resources and demolition of contributing resources to a historic district. Consultation with the Texas SHPO, NPS, and tribes would commence as the planning process for each project matures and projects detail become more refined in order to determine mitigations to offset impacts as outlined in MOAs as required.

Infrastructure and Transportation. The installation development activities would have short-term, negligible to minor, adverse cumulative impacts during construction, demolition, or activities on utilities (e.g., supply interruptions, increased stormwater runoff), transportation (e.g., increased vehicle traffic, shift traffic patterns), and solid waste management (e.g., generation of construction and demolition debris). Impacts on liquid fuel and natural gas supplies would occur from increased consumption of these resources to accommodate demolition and construction processes and requirements to heat the additional building spaces. Impacts on solid waste management would occur from the disposal of demolition and construction debris from reasonably foreseeable future projects, reducing the capacity of landfills. Debris would be recycled to the extent practicable.

Long-term, minor, beneficial impacts would occur from implementing the reasonably foreseeable future installation development projects, including improved water infrastructure; modernized water supply distribution pipeline infrastructure; replacement of older substandard facilities with new, more efficient buildings; and consolidation of functions. All new construction would be designed to optimize building performance through minimized consumption of electricity/energy and water, and generation of solid waste.

When implemented concurrently with on-installation projects, the Proposed Action when combined with other reasonably foreseeable future projects would contribute to short-term, minor, adverse impacts on transportation. Construction vehicle traffic and traffic pattern changes would be required to accommodate construction sites. The upgrade of Walters Gate, newly paved roads, and construction of a roundabout (Project I1) would result in long-term, minor,

beneficial impacts on transportation infrastructure and traffic circulation to accommodate increasing traffic demands.

Construction actions would increase impervious surface areas on the installation incurring long-term, adverse impacts. Because these projects also involve removal of approximately 279,500 ft² of impervious surfaces through building demolition and facility consolidation actions, the cumulative adverse impacts on stormwater management would be partially offset, and would likely be minor.

Safety. JBSA-SAM complies with all applicable Air Force Occupational Safety and Health and OSHA regulations to provide a safe working environment while providing facilities and infrastructure that support military readiness. Reasonably foreseeable future installation development projects could pose an increased risk for a safety mishap during demolition and construction. Demolition and construction occurring at the same time and in the same vicinity could have short-term, negligible to minor, adverse cumulative impacts by increasing local construction traffic accessing project areas, increasing maintenance and repair activities, and creating highly noisy environments that could mask verbal or mechanical warning signals. Adherence to safety regulations would minimize the potential for adverse impacts on construction workers. Cumulative impacts on construction safety would be short-term and negligible to minor.

Installation development activities associated with the Proposed Action and reasonably foreseeable future projects would be expected to have long-term, beneficial, cumulative impacts on safety by maintaining and improving facilities, pavements, and infrastructure systems. Demolition of old and underused facilities would remove ACM, LBP, and other health and safety concerns. Cumulatively, these projects would contribute to a safer working environment for all personnel at JBSA-SAM.

Hazardous Materials and Waste. Reasonably foreseeable future installation development projects would use and generate small quantities of hazardous materials and wastes, resulting in short-term, negligible to minor, adverse impacts. Adherence to construction site management plans for hazardous materials and wastes would limit potentially adverse cumulative impacts. It is anticipated that increased hazardous or petroleum materials used and wastes generated would be managed by implementing existing JBSA-SAM management plans and practices. Cumulatively, long-term, adverse impacts would not be significant.

Buildings constructed prior to 1990 could contain asbestos. Buildings constructed prior to 1978 should be assumed to contain LBP. Buildings constructed prior to 1979 could have PCB-containing equipment. The risk of exposure to ACM, LBP, or PCBs during demolition activities would result in a short-term, adverse impacts. The appropriate identification, handling, removal, and disposal of toxic substances would occur in accordance with JBSA-SAM management plans and USAF, federal, state, and local laws and regulations. PCB-containing materials must be disposed of at a hazardous waste disposal facility. Cumulatively, long-term, beneficial impacts would be expected from the removal of ACM, LBP, and PCBs from JBSA-SAM.

5.2 Environmental Protection Measures/Best Management Practices

The representative projects would not result in significant adverse impacts on the land or the surrounding area. However, BMPs, environmental protection measures, and other minimization measures would be implemented to eliminate or reduce the impacts of non-significant adverse impacts.

General environmental protection measures that could be included, as practicable, as part of installation development projects are summarized as follows:

- Clearing and grubbing could be timed with construction to minimize the exposure of cleared surfaces. Such activities would not be conducted during periods of wet weather. Construction activities would be staged to allow for the stabilization of disturbed soils. These environmental protection measures would minimize adverse impacts associated with soil and water resources.
- Fugitive dust-control techniques such as watering and stockpiling would be used to minimize adverse impacts from dust emissions. All such techniques would comply with applicable regulations. These environmental protection measures would minimize adverse impacts associated with air quality, soil, and water resources.
- Soil erosion control measures such as soil erosion control mats, silt fences, straw bales, diversion ditches, riprap channels, water bars, water spreaders, vegetative buffer strips, and hardened stream crossings, would be used as appropriate. These environmental protection measures would minimize adverse impacts associated with soil and water resources.
- Stormwater management would be used as appropriate during construction to minimize offsite runoff. Following construction, stormwater management systems would ensure that predevelopment site hydrology is maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. These environmental protection measures would minimize adverse impacts associated with water resources.
- Integrating existing vegetation, trees, and topography into the site design would minimize the disturbance of environmental resources and topography. Trees and landscaping planted along building footprints and parking lots in accordance with the JBSA Installation Facilities Standards would be incorporated into project design where possible, to reduce energy consumption through summer shading and winter heat gain. These environmental protection measures would minimize adverse impacts associated with soil, biological, and infrastructure resources.
- If construction or demolition is scheduled to start during the period in which migratory bird species are present, steps should be taken to prevent migratory birds from establishing nests in a project area. A site-specific survey for nesting migratory birds should be performed starting at least 2 weeks prior to site clearing as appropriate. If nesting birds are found during the survey, buffer areas should be established around nests. Construction should be deferred in buffer areas until birds have left the nest.

CUMULATIVE IMPACTS, BEST MANAGEMENT PRACTICES, AND UNAVOIDABLE ADVERSE EFFECTS

Confirmation that all young have fledged should be made by a qualified biologist. Other steps could include covering equipment and structures and the use of various excluders (e.g., noise). Birds can be harassed to prevent them from nesting within project areas. Once a nest is established, they should not be harassed until all young have fledged and are capable of leaving the nest site.

- In the event trees need to be removed or trimmed, these activities would not be conducted during the migratory bird breeding season (1 March to 15 August) to ensure compliance with the MBTA.
- Where feasible, minimize areas of impervious surface through shared parking, increased building height, or other measures as appropriate. These environmental protection measures would minimize adverse impacts associated with soil and water resources.
- Provisions would be taken to prevent pollutants from reaching the soil, groundwater, or surface water. During project activities, contractors would be required to perform daily inspections of equipment, maintain appropriate spill-containment materials on site, and store all fuels and other materials in appropriate containers. Equipment maintenance activities would not be conducted on construction sites. These environmental protection measures would minimize adverse impacts associated with soil, water resources, and hazardous materials and waste.
- Physical barriers to 'no trespassing' signs would be placed around demolition and construction areas to deter children and unauthorized personnel. All construction vehicles and equipment would be locked or otherwise secured when not in use. These environmental protection measures would minimize adverse impacts associated with health and safety.
- Construction equipment would be used only as necessary during the daylight hours and would be maintained to the manufacturer's specifications to minimize noise impacts. These environmental protection measures would minimize adverse impacts associated with health and safety.

5.3 Unavoidable Adverse Effects

Unavoidable adverse effects would result from implementation of the Proposed Action. As discussed in detail in **Section 4**, the representative projects would result in short- and long-term, adverse impacts associated with construction activities, including increased noise, increased air emissions, minor interruptions to traffic flow, use and generation of small amounts of hazardous materials and wastes, and generation of demolition and construction waste. None of these effects would be significant.

5.4 Compatibility of the Proposed Action and Alternatives with the Objectives of Land Use Plans and Policies

Demolition and construction under the Proposed Action would be conducted in accordance with applicable federal, regional, state, and local land use plans, policies, and controls.

Projects D1, C2, I2, and D2 would be constructed in areas where their functional land uses would be inconsistent or incompatible with existing land use designations. Dependent on the development, land use designation may need to be changed in the future; however, it is assumed future development would be consistent with the goals and visions outlined in the Corporate and Main Street District ADPs and the 2018 JBSA-SAM IDP.

5.5 Relationship between the Short-Term Use of the Environment, and Long-Term Productivity

Short-term use of the biophysical components of the human environment includes impacts, usually related to construction activities, which occur over a period of less than 5 years. Long-term uses of the human environment include those impacts that occur over a period of more than 5 years, including permanent resource loss.

The Proposed Action would not result in the additional intensification of land use in the surrounding area because it is already highly developed. The Proposed Action also would not represent a significant loss of open space. The long-term, beneficial impacts of implementing the Proposed Action would support the ongoing and future training missions and other readiness training and operational assignments.

Planned demolition activities on JBSA-SAM over the next 5 to 10 years would support the installation's goals for optimized land use, facility management, and removal of excess, obsolete, and underused facilities and infrastructure. These changes would represent long-term benefits to JBSA-SAM.

5.6 Irreversible and Irretrievable Commitments of Resources

The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, and human resources. The use of these resources is considered to be permanent. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources will have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals).

Floodplains. The Proposed Action would not entail the construction of structures or impervious surfaces in the 100-year floodplain. All development must consider encroachment on regulated floodplains on JBSA-SAM and must comply with federal, state, and local floodplain management and construction guidelines.

Biological Habitat. The Proposed Action would result in the minimal loss of vegetation and wildlife habitat. This loss would not be significant.

Material Resources. Building materials (for renovation or construction of facilities), concrete and asphalt (for parking lots and roadways), and various material supplies (for infrastructure) would be irreversibly consumed for project implementation. Most of the materials are not in

short supply, would not limit other unrelated construction activities, and their loss would not be considered significant.

Energy Resources. No significant impacts would be expected on energy resources used as a result of the Proposed Action, although any energy resources consumed would be irretrievably lost. These include petroleum-based products (e.g., gasoline and diesel fuel) and electricity. During construction, gasoline and diesel fuel would be used for the operation of construction vehicles, and for privately owned and government-owned vehicles and other equipment during facility operation. Consumption of these energy resources would not place a significant demand on their availability in the region.

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such person from engaging in other work activities. However, the use of human resources for the Proposed Action and alternatives represent employment opportunities and is considered beneficial.

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A

Stakeholder Consultation
and Public Involvement
Materials



Appendix A: Public and Stakeholder Coordination List

Federal Agencies

Advisory Council on Historic Preservation
Federal Emergency Management Agency
National Park Service
US Army Corps of Engineers, Fort Worth District
US Environmental Protection Agency, Region 6
US Fish & Wildlife Service, Southwest Region

State Agencies

Texas Commission on Environmental Quality
Texas Historical Commission
Texas Parks and Wildlife Department
Texas Water Development Board

Local Agencies and Stakeholders

Alamo Area Council of Governments
Bexar County Public Works
City of San Antonio
Preservation Fort Sam Houston
Conservation Society of San Antonio
San Antonio River Authority

Native American Tribes

Comanche Nation
Mescalero Apache Tribe of the Mescalero Reservation
Tonkawa Tribe of Indians of Oklahoma

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B

Air Quality ACAM
Summary



AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force’s Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: LACKLAND AFB
State: Texas
County(s): Bexar
Regulatory Area(s): San Antonio, TX

b. Action Title: C1: Construct Fitness Center

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2023

e. Action Description:

See Section 2.3.1.1 of IDEA

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: applicable
 X not applicable

Conformity Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	2.947	100	No
NOx	2.560	100	No
CO	2.913		
SOx	0.008		
PM ₁₀	3.567		
PM _{2.5}	0.101		
Pb	0.000		
NH ₃	0.004		
CO _{2e}	791.3		

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.055	100	No
NOx	1.009	100	No
CO	0.847		
SOx	0.006		
PM ₁₀	0.077		
PM _{2.5}	0.077		
Pb	0.000		
NH ₃	0.000		
CO _{2e}	1214.4		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.



Carolyn Hein, Contractor

1/20/2020
DATE

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force’s Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: LACKLAND AFB
State: Texas
County(s): Bexar
Regulatory Area(s): San Antonio, TX

b. Action Title: I1: Entry Boulevard and Roundabout

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2023

e. Action Description:

See Section 2.3.1.2 of IDEA

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: applicable
 X not applicable

Conformity Analysis Summary:

2023

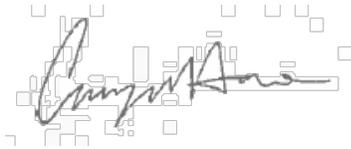
Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.248	100	No
NOx	1.377	100	No
CO	1.653		
SOx	0.004		
PM ₁₀	4.957		
PM _{2.5}	0.056		
Pb	0.000		
NH ₃	0.001		
CO _{2e}	305.9		

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	-0.004	100	No
NOx	-0.078	100	No
CO	-0.066		
SOx	0.000		
PM ₁₀	-0.006		
PM _{2.5}	-0.006		
Pb	0.000		
NH ₃	0.000		
CO _{2e}	-94.1		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.



Carolyn Hein, Contractor

1/20/2020
DATE

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force’s Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: LACKLAND AFB
State: Texas
County(s): Bexar
Regulatory Area(s): San Antonio, TX

b. Action Title: D1: Demolish Single-Family Residential Units

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2023

e. Action Description:

See Section 2.3.1.3 of IDEA

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: applicable
 X not applicable

Conformity Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.180	100	No
NOx	0.992	100	No
CO	1.220		
SOx	0.002		
PM ₁₀	9.314		
PM _{2.5}	0.029		
Pb	0.000		
NH ₃	0.001		
CO _{2e}	32.6		

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	-0.014	100	No
NOx	-0.242	100	No
CO	-0.103		
SOx	-0.002		
PM ₁₀	-0.020		
PM _{2.5}	-0.020		
Pb	0.000		
NH ₃	0.000		
CO _{2e}	-309.5		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.



Carolyn Hein, Contractor

02/03/2020
DATE

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force’s Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: LACKLAND AFB
State: Texas
County(s): Bexar
Regulatory Area(s): San Antonio, TX

b. Action Title: N1: Physical Training Trail Extension

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2022

e. Action Description:

See Section 2.3.1.4 of IDEA

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: applicable
 X not applicable

Conformity Analysis Summary:

2022

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.176	100	No
NOx	1.048	100	No
CO	1.073		
SOx	0.002		
PM ₁₀	3.571		
PM _{2.5}	0.050		
Pb	0.000		
NH ₃	0.001		
CO _{2e}	235.3		

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

2023 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000		
SOx	0.000		
PM ₁₀	0.000		
PM _{2.5}	0.000		
Pb	0.000		
NH ₃	0.000		
CO _{2e}	0.0		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.



Carolyn Hein, Contractor

1/20/2020
DATE

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force’s Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: LACKLAND AFB
State: Texas
County(s): Bexar
Regulatory Area(s): San Antonio, TX

b. Action Title: C2: ARNORTH-HDOC

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2023

e. Action Description:

See Section 2.3.2.1 of IDEA

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: applicable
 X not applicable

Conformity Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.667	100	No
NOx	4.086	100	No
CO	4.116		
SOx	0.012		
PM 10	67.611		
PM 2.5	0.163		
Pb	0.000		
NH3	0.003		
CO2e	1193.6		

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.042	100	No
NOx	0.764	100	No
CO	0.642		
SOx	0.005		
PM 10	0.058		
PM 2.5	0.058		
Pb	0.000		
NH3	0.000		
CO2e	920.1		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.



Carolyn Hein, Contractor

5/11/2020
DATE

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force’s Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: LACKLAND AFB
State: Texas
County(s): Bexar
Regulatory Area(s): San Antonio, TX

b. Action Title: I2: Storefront Parking Upgrade

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2023

e. Action Description:

See Section 2.3.2.2 of IDEA

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: applicable
 X not applicable

Conformity Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.289	100	No
NOx	1.664	100	No
CO	1.936		
SOx	0.004		
PM ₁₀	8.484		
PM _{2.5}	0.076		
Pb	0.000		
NH ₃	0.001		
CO _{2e}	387.6		

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	-0.001	100	No
NOx	-0.017	100	No
CO	-0.014		
SOx	0.000		
PM ₁₀	-0.001		
PM _{2.5}	-0.001		
Pb	0.000		
NH ₃	0.000		
CO _{2e}	-20.5		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.



Carolyn Hein, Contractor

1/20/2020
DATE

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force’s Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: LACKLAND AFB
State: Texas
County(s): Bexar
Regulatory Area(s): San Antonio, TX

b. Action Title: D2: Demolish Building 260

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2022

e. Action Description:

See Section 2.3.2.3 of IDEA

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: applicable
 X not applicable

Conformity Analysis Summary:

Pollutant	Action Emissions (ton/yr)	2022 GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.074	100	No
NOx	0.457	100	No
CO	0.490		
SOx	0.001		
PM ₁₀	0.062		
PM _{2.5}	0.019		
Pb	0.000		
NH ₃	0.000		
CO _{2e}	106.3		

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

2023 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.000	100	No
NOx	-0.009	100	No
CO	-0.007		
SOx	0.000		
PM ₁₀	-0.001		
PM _{2.5}	-0.001		
Pb	0.000		
NH ₃	0.000		
CO _{2e}	-10.2		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.



Carolyn Hein, Contractor

1/20/2020
DATE

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

General Information: The Air Force’s Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: LACKLAND AFB
State: Texas
County(s): Bexar
Regulatory Area(s): San Antonio, TX

b. Action Title: N2: Quadrangle Park

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2022

e. Action Description:

See Section 2.3.2.1 of IDEA

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: applicable
 X not applicable

Conformity Analysis Summary:

2022

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.162	100	No
NOx	1.020	100	No
CO	1.034		
SOx	0.003		
PM ₁₀	9.219		
PM _{2.5}	0.042		
Pb	0.000		
NH ₃	0.000		
CO _{2e}	253.0		

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA)

2023 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
San Antonio, TX			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000		
SOx	0.000		
PM ₁₀	0.000		
PM _{2.5}	0.000		
Pb	0.000		
NH ₃	0.000		
CO _{2e}	0.0		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.



Carolyn Hein, Contractor

1/20/2020
DATE



C

Inventory of Installation
Development Projects



Table C-11. Inventory of Proposed Installation Development Projects

Project Number	Project Title	Approximate Implementation Year	District	Description of Project	Potential Constraints	Total Project Area (ft ²)	Change in Impervious Surface (ft ²)
C1*	Construct Fitness Center	2023	Corporate	Construct an approximately 219,000-square foot (ft ²) fitness center using economical design and construction methods. Sufficient parking spots would be constructed to support the permanent facility occupants and visitors. This project includes site clearing via the demolition of Building 2750, a 10,000 ft ² building (Project D5), and two parking lots totaling approximately 30,000 ft ² . Approximately 170,000 ft ² would be impacted by this project.	ACM, LBP, PCB, NPCD	219,000 (including 40,000 for facility demolition)	+130,000
C2*	ARNORTH Homeland Defense Operations Center (HDOC)	2023	Main Street	This project would involve construction of a HDOC facility to support ARNORTH ASCC and serve as a headquarters for a Joint Task Force of Joint Force Land Component Command. Approximately 230,000 ft ² would be impacted by this project.	NHLD	139,000	+113,000
C3	Car Park Addition	2025 to 2030	Main Street	This project would provide replacement parking for the parking displaced by the Quadrangle Park project (Project C2), increasing capacity to support Headquarters and proposed new facilities. Approximately 187,000 ft ² would be impacted by this project.	LUD, HAZMAT, NPCD, NHLD	187,000	+43,000
C4	Storefront Plaza	2025 to 2030	Main Street	502d Force Support Group (FSG) functions would relocate from Building 2263 to Stanley Road Storefronts (Buildings 147, 149, and 155–161) following renovation and outdoor promenade and landscaping upgrades. Storefront buildings would be connected by a covered walkway deck to enable their shared use by consolidated FSG functions. Up to 86,000 ft ² would be impacted by this project.	LUD, HAZMAT, NPCD, NHLD	86,000	+21,900

Project Number	Project Title	Approximate Implementation Year	District	Description of Project	Potential Constraints	Total Project Area (ft ²)	Change in Impervious Surface (ft ²)
C5	Security Forces Addition	2025 to 2030	Main Street	Construct a two- to three-story addition (7,950 ft ² per floor) to Building 2244 for 502 FSG.	LUD, HAZMAT, NHLD	8,000	+8,000
I1*	Entry Boulevard and Roundabout	2023	Corporate	Construct a traffic circle on the installation near Walters Gate to correct circulation difficulties and create a boulevard with sidewalks, on-street parking, and landscaping. The project also includes demolition of existing roadways and parking, and construction of a new roadway, sidewalks, planting strips and other landscaping, median, and curb and gutter. Approximately 89,000 ft ² would be impacted by this project.	NPCD	89,000 (including 25,340 for facility demolition)	-30,000
I2*	Storefront Parking Upgrade	2023	Main Street	Replace existing parking areas and S-4 Road between Buildings 158 and 272 with a larger parking area with landscaping and improved pedestrian access. This would add parking capacity to accommodate the functions relocating to the Storefront Plaza (Project C4). S-4 Road would be removed or realigned to the west. Approximately 211,000 ft ² would be impacted by this project. Demolition of Buildings 260 and 261 (Projects D2 and D7) would be required to accommodate the site for additional parking areas.	ACM, LBP, PCB, NHLD, LUD	211,000 (including 3,767 for facility demolition)	0
I3	Martin Luther King Memorial and Sidewalk Network Improvement	2025 to 2030	Corporate	The Martin Luther King memorial lies inside the traffic circle in front of Building 1000. This project includes construction of sidewalks around the memorial and circle and small recreational areas within the circle. Approximately 115,000 ft ² would be impacted by this project.	HAZMAT, NPCD	115,000	+3,200

Project Number	Project Title	Approximate Implementation Year	District	Description of Project	Potential Constraints	Total Project Area (ft ²)	Change in Impervious Surface (ft ²)
I4	Sidewalk Upgrades (Old Austin Road, Henry T. Allen, Parade Field, and Worth Road)	2025 to 2030	Corporate	Old Austin Road extends northwest from Pershing Gate and requires sidewalks on the south side. Henry T. Allen Road crosses the Parade Field, connecting family housing to administrative buildings, and requires sidewalks on the south side of the road. The Parade Field crosses the district north to south and is a common pedestrian path for access and recreation. Sidewalks are intermittent and require connectivity. Worth Road connects family housing to administrative buildings across the Parade Field and requires sidewalks on both sides. Approximately 150,000 ft ² would be impacted by this project.	LUD, HAZMAT, NPCD, NHLD	150,000	+126,700
I5	Street Connection and Upgrades to Winfield Scott Road	2025 to 2030	Corporate	Construct a road connection to Winfield Scott Road with sidewalks, planting strips, and curb and gutter. Upgrading and rerouting of Winfield Scott Road would include construction of sidewalks, landscaping, and a new roadway. Approximately 43,700 ft ² of roadway would be demolished and rerouted. Approximately 13,800 linear feet (ft) of roadway, 17,300 linear ft of sidewalks, and 11,300 linear ft of planting strips would be installed.	LUD, NPCD	43,700	-31,900
I6	Access Street Crosswalks and Lighting	2025 to 2030	Corporate	Major streets on the installation have lighting and are relatively safe; however, access streets generally do not. This project includes installation of lighting and crosswalks to approximately 33 access street intersections within the Corporate District.	NPCD, NHLD	N/A	0

Project Number	Project Title	Approximate Implementation Year	District	Description of Project	Potential Constraints	Total Project Area (ft ²)	Change in Impervious Surface (ft ²)
I7	“Pole Away” Underground Overhead Electrical	2025 to 2030	Corporate	Relocate overhead electrical lines underground, which can be accomplished as part of other street upgrade projects. There are approximately 80,000 linear ft of overhead powerlines in the Corporate District. Up to 9 acres of ground surface would be temporarily impacted by this project.	NPCD	392,040 <i>(9 acres)</i>	0
I8	Dickman and Stanley Roads Connection Upgrade	2025 to 2030	Corporate	Upgrade Dickman and Stanley Roads in front of Building 1000 with a complete street and sidewalks. This project would include construction of roadway, sidewalks, and planting strips. Approximately 1,350 linear ft of roadway, 2,700 linear ft of sidewalks, and 1,400 linear ft of planting strips would be installed.	HAZMAT, NPCD	59,800	+20,000
I9	Security Forces Pedestrian Path	2025 to 2030	Main Street	Replace S-9 Road with a pedestrian path to avoid an AT/FP violation. Approximately 45,000 ft ² would be impacted by this project.	LUD, HAZMAT, NHLD	45,000	-20,400
I10	Upgraded Car Park	2025 to 2030	Main Street	Replace and expand the existing parking area north of S-4 Road and east of the installation’s police station to south of the roadway. This would add parking capacity for functions in the area. Approximately 108,000 ft ² would be impacted by this project.	LUD, HAZMAT, NHLD	108,000	+7,400
I11	Sidewalk Upgrades	2025 to 2030	Main Street	Throughout the Main Street District, sufficient sidewalks would be installed on both sides of streets to the extent feasible. Approximately 230,000 ft ² would be impacted by this project.	LUD, NPCD, NHLD	230,000	+190,100
I12	Walking Park	2025 to 2030	Main Street	This project would provide a series of walking paths through the open area between Wilson Way and S-2 Road. Approximately 20,000 ft ² would be impacted by this project.	LUD, NHLD	20,000	0

Project Number	Project Title	Approximate Implementation Year	District	Description of Project	Potential Constraints	Total Project Area (ft ²)	Change in Impervious Surface (ft ²)
I13	“Pole Away” Overhead Electrical Lines to Underground	2025 to 2030	Main Street	Relocate overhead electrical lines underground, which can be accomplished as part of other street upgrade projects. There are approximately 50,000 linear ft of overhead powerlines in the Main Street District. Up to 6 acres would be temporarily impacted by this project.	NHLD	261,360 (6 acres)	0
D1*	Demolish Single-Family Residential Units	2023	Corporate	Demolish single-family housing units 518–527, 530–536, 544–554, 558–564, and 566. Approximately 5 acres of ground surface would be impacted by this project.	ACM, LBP, PCB, NPCD, LUD	217,800 (5 acres)	-218,000
D2*	Demolish Building 260	2022	Main Street	Demolish Building 260, a 1,884 ft ² , single-story administrative facility constructed in 1908.	ACM, LBP, PCB, NHLD, LUD	2,000 (including 1,884 for facility demolition)	0
D3	Demolish Building R162	2025 to 2030	Corporate	Demolish Building R162, a 1,000 ft ² facility that is adjacent to Building 2735 to the west, was constructed in 1968, and has reached the end of its useful life.	ACM, LBP, PCB, NPCD	1,000 (including 1,000 for facility demolition)	-1,000
D4	Demolish Physical Evaluation Board, Building 323	2025 to 2030	Corporate	Demolish Building 323, a 6,552 ft ² facility, following consolidation of activities to Building 2000.	ACM, LBP, PCB, HAZMAT, NPCD	6,522 (including 6,552 for facility demolition)	-6,500
D5	Demolish Public Affairs Visual Info, Building 2750	2023	Corporate	Demolish Building 2750, a 10,000 ft ² facility constructed in 1978, to accommodate the site for the fitness center (Project C1).	ACM, LBP, PCB, NPCD	10,000 (including 10,000 for facility demolition)	-10,000
D6	Demolish Army and Air Force Exchange Service Building 2735	2025 to 2030	Corporate	Demolish Building 2735, a 4,800 ft ² facility constructed in 1968, which houses fast food and package shipping establishments.	ACM, LBP, PCB, NPCD	4,800 (including 4,800 for facility demolition)	-4,800

Project Number	Project Title	Approximate Implementation Year	District	Description of Project	Potential Constraints	Total Project Area (ft ²)	Change in Impervious Surface (ft ²)
D7	Demolish Building 261	2022	Main Street	Demolish Building 261, a 1,883 ft ² , single-story administrative facility constructed in 1908.	ACM, LBP, PCB, HAZMAT, NHLD	1,883 (including 1,883 for facility demolition)	0
N1*	Physical Training Trail Extension	2022	Corporate	Construct physical training/recreational trails between Henry T. Allen Road and New Braunfels Avenue, connecting to the trails in the Main Street District. Approximately 118,000 ft ² would be impacted by this project.	NPCD	118,000	+118,000
N2*	Quadrangle Park	2022	Main Street	This project would turn open space in the historic Quadrangle into a formal park area, removing parking. It also would convert S-6 Road into a pedestrian only path, creating the beginning of a walking path leading from the Quadrangle to Wilson Way. Approximately 230,000 ft ² would be impacted by this project.	NHLD, LUD	230,000	-60,000
N3	Neighborhood Dog Parks	2022	Main Street	There are currently no dog parks in this part of the installation. Dog parks are being considered in open space in housing areas west of Long Barracks and east of Bandmaster Road, or in open space north of S-3 Road, northwest of the intersection of Artillery Loop and New Braunfels Avenue. Up to 63,000 ft ² would be impacted by this project.	NHLD	63,000	-60,000
Total Square Feet						3,018,905	+338,700

* Denotes representative projects carried through for detailed analysis in the EA
ACM = asbestos-containing material
HAZMAT = Near hazardous material storage location
LUD = Land use designation
NPCD = New Post Conservation District

NHLD = Fort Sam Houston National Historic Landmark District
ft² = square feet
ft = feet