DRAFT

ENVIRONMENTAL ASSESSMENT

FOR

THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES TEMPORARY FACILITIES FOR SHELTERING UNACCOMPANIED CHILDREN AT GOODFELLOW AIR FORCE BASE, TEXAS

Prepared for:

Department of the Air Force
17th Training Wing
Goodfellow Air Force Base, Texas

July 2018

DRAFT FINDING OF NO SIGNIFICANT IMPACT (FONSI)

THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES TEMPORARY FACILITIES FOR SHELTERING UNACCOMPANIED CHILDREN GOODFELLOW AFB, TEXAS

Pursuant to provisions of the National Environmental Policy Act (NEPA), Title 42 United States Code (U.S.C.) Sections 4321 to 4347, implemented by Council on Environmental Quality (CEQ) Regulations, Title 40, Code of Federal Regulations (CFR) §§1500-1508, and 32 CFR §989, Environmental Impact Analysis Process, the U.S. Air Force (Air Force) assessed the potential environmental consequences associated with The U.S. Department of Health and Human Services (HHS) Temporary Facilities for Sheltering Unaccompanied Children at Goodfellow Air Force Base (AFB), Tom Green County, Texas.

The purpose of the Proposed Action is to support the urgent HHS requirement, as documented in a Request for Assistance, for providing temporary shelter by using available military resources, as directed by the Secretary of Defense and documented in an Action Memorandum (29 June 2018).

The need for the Proposed Action is to respond to a humanitarian crisis resulting from the increased influx of unaccompanied children across the southern border of the United States. The current influx of unaccompanied children along the U.S. southern border continues to strain HHS's usual system of caring for unaccompanied children.

The Environmental Assessment (EA) analyzes the potential environmental consequences of activities associated with the erection by Air Force and operation by HHS of temporary facilities for sheltering unaccompanied children at Goodfellow AFB, and provides environmental protection measures to avoid or reduce adverse environmental impacts.

The EA considers all potential impacts of Alternative 1 and the No Action Alternative. The EA also considers cumulative environmental impacts with other projects in the Region of Influence.

Alternative 1: Proposed Action (Preferred Alternative)

Under the Proposed Action, the Air Force would provide approximately 70 contiguous acres of level and cleared land, erect temporary structures to provide living and sleeping quarters for up to 7,500 unaccompanied children and work facilities for approximately 7,500 HHS support staff for up to 180 days. The Proposed Action would provide sufficient support structures, construction laydown area, and security fencing to separate the temporary facilities from other areas and functions at Goodfellow AFB, Texas. The Proposed Action would include providing all care, supervision, meals, clothing, medical services, transportation, and other daily needs of the unaccompanied children.

The following activities would be completed by the Air Force to enhance unaccompanied children capacity in a timely manner:

- Clearing and leveling land for the purpose of erecting semi-permanent structures to shelter unaccompanied children;
- Allowing HHS to use the Department of Defense's temporary facilities for mass sheltering;
- Erecting temporary facilities; and
- Helping transport unaccompanied children from one facility to another in the event of a significant weather event or natural disaster.

Erection of the entire Proposed Action is estimated to require up to 30 days. Design plans and specifications are not yet available and a construction schedule has not been fully determined, pending fiscal and other approvals. The following detailed information is available regarding changes to the Proposed Action area:

- Fencing would be erected surrounding the entire Proposed Action area and separating it from Goodfellow AFB. Neither unaccompanied children nor HHS employees would have access to Goodfellow AFB.
- A separate gate would be constructed along Old Eola Road, with concurrence received from the City of San Angelo on 30 June 2018. All entrance and exits from the Proposed Action area would occur through this gate.
- Grubbing (removal of trees, shrubs, stumps, and rubbish) and clearing of vegetation would be accomplished within the Proposed Action area. Bulldozers and graders will be used for clearing activities.
- Cleared areas would be covered with approximately 12,000 cubic yards of caliche for erosion and runoff prevention. Caliche would remain intact after HHS departure and site decommissioning.
- Water and electrical connections would be established to existing utility lines. Water connections would be established immediately. Electrical connections would take up to 60 days, during which time approximately 25 generators will be used temporarily to provide electricity until the connections are completed. Up to 3,500 linear feet (ft) by 3 ft deep and 3 ft wide (Total of 31,500 square ft) would be trenched and excavated for water and electrical line connections. Electrical connections would remain after HHS departure and site decommissioning, and water infrastructure would be abandoned in place.
- Environmental Restoration Program sites would be fenced off and inaccessible to HHS & unaccompanied children.
- The network of fitness trails would be removed with grubbing process and will not be restored.
- Perimeter Road would be inaccessible to Goodfellow AFB commercial traffic until HHS departure and site decommissioning.
- The Proposed Action area would be restored to Open Area and/or Open/Recreation land use after HHS departure and site decommissioning.
- Sewage, solid, and hazardous waste would be collected and transported offsite weekly in five trucks.
- Supplies would be delivered weekly in five trucks.
- HHS employees would arrive onsite in 12 hour shifts via bus or 3 or more person carpool; shift changes would not occur during peak hours of 5:30 AM to 8:30 AM and 3:30 PM to 5:30 PM
- HHS employees would be housed in hotels, with a minimum of 2 employees per room
- Operation of the shelters is estimated to last up to 180 days, after which the disturbed areas will be returned to the former land use classification
- Additional specific requirements for analyzing each resource area are discussed in **Chapter 4**

It is expected the children and HHS staff will arrive onsite in stages. For the purpose of the analysis, the buildup is estimated to be 1,000 unaccompanied children and 1,000 HHS staff per week. So, the buildup would be over a 7.5 week period, if full capacity is reached.

Alternative 2: No Action Alternative

The CEQ regulation, 40 CFR §1502.14(d), requires the inclusion of a No Action Alternative in the NEPA analysis. Under the No Action Alternative, the Air Force would not provide temporary, short-term

shelters at Goodfellow AFB to support HHS operations, HHS would not operate the facilities, and would not meet the requirements of the Presidential Executive Order 13841 and Secretary of Defense Action Memorandum (29 June 2018). All alternative strategies, including the No Action Alternative, will be assessed in the EA.

SUMMARY OF FINDINGS

The analyses of the affected environment and environmental consequences of implementing the Preferred Alternative presented in the EA concluded that by implementing standing environmental protection measures and operational planning, the Air Force would be in compliance with all items and conditions and reporting requirements.

The Air Force has concluded that no significant adverse impacts would result to the following resources as a result of the Preferred Alternative: airspace management, water resources, noise, land use, air quality, biological resources, cultural resources, earth resources, hazardous materials and wastes, infrastructure and utilities, transportation, socioeconomic resources, environmental justice, and safety and occupational health. No significant adverse cumulative impacts would result from activities associated with Preferred Alternative when considered with past, present, or reasonably foreseeable future projects.

FINDING OF NO SIGNIFICANT IMPACT BY THE AIR FORCE

Based on my review of the facts and analyses contained in the attached EA, conducted under the provisions of NEPA, CEQ Regulations, and 32 CFR §989, I conclude that the Air Force portion of the Preferred Alternative would not have a significant environmental impact, either by itself or cumulatively with other known projects. Accordingly, an Environmental Impact Statement is not required. The signing of this Finding of No Significant Impact completes the environmental impact analysis process.

_____ _____

CYNTHIA OLIVA, GS-15, USAF Date
Chief, Resource Integration Division

Cover Sheet

Responsible Agency: 17th Training Wing, Goodfellow Air Force Base (AFB), Texas

Proposed Action: The U.S. Department of Health and Human Services (HHS) Temporary Facilities for Sheltering Unaccompanied Children at Goodfellow AFB, Texas

Points of Contact:

Air Force: Erika Alanis Unger, 17 CES/CEIE, 460 Kearney Blvd, Goodfellow AFB, Texas 76908

HHS: Commander Gregg Gnipp, U.S. Public Health Service, Division of Unaccompanied Children Planning & Logistics Administration for Children & Families, Switzer Building, 330 C St SW, Office 5208C, Washington, DC 20024

Report Designation: Draft Environmental Assessment (EA)

Abstract: To address an increased influx of unaccompanied children across the southwestern border of the United States, Goodfellow AFB is preparing an EA addressing potential environmental impacts from the HHS temporary facilities for sheltering unaccompanied children. The environmental impact analysis process for this EA is being conducted in accordance with the Council on Environmental Quality regulations pursuant to the requirements of the National Environmental Policy Act (NEPA) of 1969.

Under the Proposed Action, the Air Force would provide approximately 70 contiguous acres of level and cleared land, erect temporary structures to provide living and sleeping quarters for up to 7,500 unaccompanied children and work facilities for approximately 7,500 HHS support staff for up to 180 days. The Proposed Action would provide sufficient support structures for HHS operation of the facilities, construction laydown area, and security fencing to separate the temporary facilities from other areas and functions at Goodfellow AFB, Texas. HHS would operate the proposed facilities under the Proposed Action.

As required by NEPA, the Air Force will also consider taking no action (No Action Alternative). By taking no action, the Air Force would not provide temporary, short-term shelters at Goodfellow AFB to support HHS operations, HHS would not operate the facilities, and would not meet the requirements of the Presidential Executive Order 13841 and Secretary of Defense Action Memo (29 June 2018). All alternative strategies, including the No Action Alternative, will be assessed in the EA.

The following resources were identified for study in this EA: noise, land use, air quality, biological resources, cultural resources, earth resources, hazardous materials and wastes, infrastructure and utilities, transportation, socioeconomic resources, environmental justice, and safety and occupational health.

The Air Force will consider all substantive comments, which include comments that challenge the environmental analysis, methodologies, or information in the Draft EA as being inaccurate or inadequate; identify impacts not analyzed, or mitigations not considered. Non-substantive comments are considered those that express a conclusion, an opinion, or a vote for or against the proposal or some aspect of it, state a political position, or otherwise state a personal preference.

PRIVACY ADVISORY

Letters or other public comment documents provided may be published in the Final EA. Information provided will be used to improve the analysis of issues identified in the Draft EA. Comments will be addressed in the Final EA and made available to the public. However, only the name of the individual and specific comment will be disclosed.

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LIST OF ABBREVIATIONS / ACRONYMS

ACAM	Air Conformity Applicability Model
ACM	Asbestos-Containing Materials
AEP	American Electrical Power
AFI	Air Force Instruction
AFB	Air Force Base
AIRFA	American Indian Religious Freedom Act
Air Force	United States Air Force
AOC	Area of Concern
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act
AQCR	Air Quality Control Region
bgs	Below ground surface
BMPs	Best Management Practices
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2eq	Carbon Dioxide Equivalent
COC	Community of Comparison
dB	Decibel
dBA	A-weighted Decibel
DHS	Department of Homeland Security
DoD	Department of Defense
DoJ	Department of Justice
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESQD	Explosive Safety Quantity Distance
FM	Farm-to-Market Road
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FPPA	Farmland Policy Protection Act
ft	Feet
FY	Fiscal Year
GHGs	Greenhouse Gasses
HAPs	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons
HHS	Department of Health and Human Services
IDP	Installation Development Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan
IPaC	Information, Planning and Conservation

LBP	Lead-Based Paint
Lmax	Maximum Sound Level
MBTA	Migratory Bird Treaty Act
mgd	Millions of gallons per day
msl	Mean sea level
MSW	Municipal Solid Waste
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
NOA	Notice of Availability
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	Ozone
OSHA	Occupational Safety and Health Administration
PEA	Programmatic Environmental Assessment
PFCs	Perfluorocarbons
PL	Public Law
$PM_{2.5}$	Particulate matter equal or less than 2.5 micrometers in diameter
PM_{10}	Particulate matter equal or less than 10 micrometers in diameter
ppb	Parts per billion
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SARA	Superfund Amendments and Reauthorization Act
SEL	Sound Exposure Level
SF_6	Sulfur Hexafluoride
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_X	Sulfur Oxides
SPLs	Sound Pressure Levels
SWPPP	Stormwater Pollution Prevention Plan
TCEQ	Texas Council on Environmental Quality
tpy	Tons per year
TPWD	Texas Parks and Wildlife Department
TXDOT	Texas Department of Transportation
U.S.	United States
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UXO	Unexploded Ordnance
VOCs	Volatile Organic Compounds
$\mu g/m^3$	Micrograms per cubic meter

CHAPTER 1: PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

On 20 June 2018 President Trump signed Executive Order (EO) 13841 establishing a policy to "rigorously enforce our immigration laws". The EO further directed the Secretary of Defense to "take all legally available measures to provide the Secretary [of Homeland Security], upon request, any existing facilities available for the housing and care of alien families, and shall construct such facilities if necessary". According to Presidential Memorandum dated 6 April 2018, the Department of Homeland Security (DHS), in coordination with the Department of Defense (DoD), the Department of Justice (DoJ), and the Department of Health and Human Services (HHS), was to "report existing facilities that could be used, modified, or repurposed to detain aliens". By letter dated 19 June 2018, the HHS requested "further cooperation and support from the DoD to mitigate the crisis of unaccompanied alien children arriving at the Southern Border."

To address an increased influx of unaccompanied children across the southwestern border of the United States, DHS developed a Programmatic Environmental Assessment (PEA) (DHS 2014). The DHS assessed a general approach for managing processing of unaccompanied children and transferring their care to HHS during the present humanitarian situation. Subsequent to HHS request, the U.S. Air Force (Air Force) determined Goodfellow Air Force Base (AFB), Texas could enhance sheltering capacity necessary to accommodate the unaccompanied children.

Goodfellow AFB is home to the 17th Training Wing. Encompassing 1,214 acres, Goodfellow AFB is located within the southeast corner of the City of San Angelo, Texas in Tom Green County, as shown in **Figure 1-1**. The Mission at Goodfellow AFB is to train, develop, and inspire exceptional intelligence, surveillance, and reconnaissance and fire protection professionals for America and her allies.

The 1969 National Environmental Policy Act (NEPA), as amended, requires federal agencies to consider environmental consequences in their decision-making process. The President's Council on Environmental Quality (CEQ) has issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental impact analysis. The Air Force Environmental Impact Analysis Process (EIAP) is accomplished through adherence to the procedures set forth in CEQ regulations (40 Code of Federal Regulations [CFR] §§1500-1508) and 32 CFR §989 (*Air Force Environmental Impact Analysis Process*). These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action.

The information presented in this document will serve as the basis for deciding whether the Proposed Action would result in a significant impact to 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 DESCRIPTION OF THE PROPOSED ACTION AND LOCATION

The Proposed Action would provide HHS sufficient land and facilities for the placement of living and sleeping quarters for approximately 7,500 unaccompanied children on Goodfellow AFB, with additional work space for approximately 7,500 HHS support personnel. HHS identified the following activities that would be necessary to enhance capacity in a timely manner and to avoid elevated costs:

- Clearing and leveling land for the purpose of erecting semi-permanent structures to shelter unaccompanied children;
- Allowing HHS to use DoD's temporary facilities for mass sheltering;
- Erecting temporary facilities; and
- Helping transport unaccompanied children from one facility to another in the event of a significant weather event or natural disaster.

The Air Force, as requested by HHS, would provide the required land, temporary facilities and other support at Goodfellow AFB, Texas. HHS representatives would be present on-site and would provide all care, supervision, meals, clothing, medical services, transportation, and other daily needs of the unaccompanied children. HHS has requested the facilities be available for 180 days from the arrival of the first unaccompanied children. The HHS timeframe noted in the Notice of Availability (NOA) and public notices was established based upon planning assumptions known at the time of publication. Based on clarifications, the current planning assumptions for the timeframe of the Proposed Action would be 180 days from the arrival of the first unaccompanied children. All resource areas are analyzed for impacts over a 180-day timeframe. HHS has not projected a timeframe for the arrival of the unaccompanied children, up to the maximum of 7,500 total. It is expected the children and HHS staff will arrive onsite in stages. For the purpose of the analysis, the buildup is estimated to be 1,000 unaccompanied children and 1,000 HHS staff per week. So, the buildup would be over a 7.5 week period, if full capacity is reached.

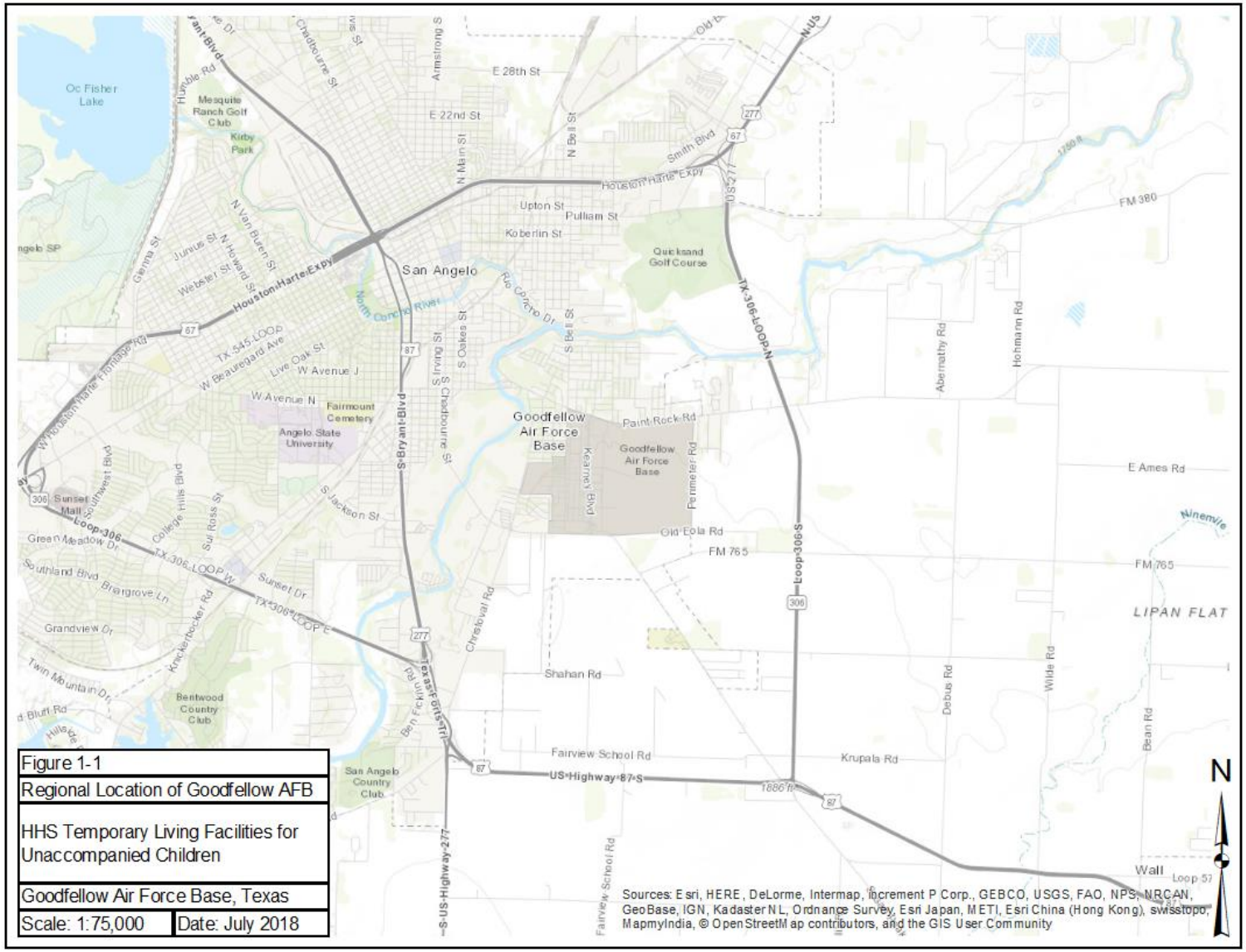
1.3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The CEQ regulations implementing the NEPA require that an Environmental Assessment (EA) specify the underlying purpose of and need to which an agency is responding in proposing actions and alternatives (40 CFR 1502.13).

The purpose of the Proposed Action is to support the urgent HHS requirement, as documented in a Request for Assistance, for providing temporary shelter by using available military resources, as directed by the Secretary of Defense and documented in an Action Memorandum (29 June 2018). Specifically, the purpose of the Proposed Action is to establish and operate a location and erect temporary, short-term facilities for sheltering approximately 7,500 unaccompanied children at Goodfellow AFB.

The need for the Proposed Action is to respond to a humanitarian crisis resulting from the increased influx of unaccompanied children across the southern border of the United States. The current influx of unaccompanied children along the U.S. southern border continues to strain HHS's usual system of caring for unaccompanied children.

Figure 1-1. Regional Location of Goodfellow AFB



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1.4 DECISION TO BE MADE

The analysis in this EA evaluates the potential environmental consequences of the proposed and alternative actions. Based on this information, the Air Force would determine whether to implement the Proposed Action or take no action (No Action Alternative). HHS would determine whether to implement its portion of the Proposed Action or take no action. As required by NEPA and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed action, and be available to inform decision-makers of the potential environmental impacts of selecting the Proposed Action or the No Action Alternative. If significant impacts are identified, the Air Force or HHS would undertake mitigation to reduce impacts to below the level of significance, undertake the preparation of an EIS addressing the Proposed Action, or abandon the Proposed Action.

1.5 APPLICABLE REGULATORY REQUIREMENTS AND INTERGOVERNMENTAL COORDINATION

The following paragraphs describe the laws and regulations that apply, or may apply, to the Proposed Action, as well as the different levels of consultation required by federal law.

1.5.1 Interagency and Intergovernmental Coordination

HHS is a cooperating agency because they will operate the facilities.

The Air Force, as the responsible agency has implemented the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process. Through the IICEP process, the Air Force notifies relevant federal, state, and local agencies about the Proposed Action and alternatives. The IICEP process provides the Air Force the opportunity to coordinate with and consider state and local views in implementing the Proposed Action or alternatives. A discussion of the Proposed Action was provided to federal, state, and local agencies as well as other stakeholders identified in the IICEP process that provides the means to comment on the Proposed Action and alternatives. The comment period lasts for 7 days. Agency responses were considered in developing the final EA. IICEP materials for this EA are included in **Appendix A**.

1.5.2 Government-to-Government Consultation

The National Historic Preservation Act (NHPA) requires federal agencies to consult with federally recognized Indian tribes on proposed undertaking that have the potential to affect Properties of cultural, historical, or religious significance to the tribes. Because many tribes were displaced from their original homelands during the historical period, tribes with cultural roots in an area might not currently reside in the region where the undertaking is to occur. Effective consultation requires identification of tribes based on ethnographic and historical data and not simply a tribe's current proximity to a project area. The goal of the tribal consultation process is not to simply consult on a particular undertaking but rather to build constructive relationships with appropriate Native American tribes.

On 3 July 2018, the 17th Training Wing Commander at Goodfellow AFB sent letters to the tribes culturally affiliated with the installation, requesting government-to-government consultation to identify any traditional cultural properties that may be present. These letters, and any responses received, are included in **Appendix A**.

1.5.3 Public Involvement

The NOA was issued to solicit comments on the Proposed Action and involve the local community in the decision-making process. Copies of the Draft EA and Draft FONSI were made available to individuals and agencies listed in **Chapter 6** of the EA as well as at the Goodfellow AFB Library and the Tom Green County Public Library, Main Branch for a 7-day review and comment period. Comments will be reviewed and addressed, when applicable, within this document.

1.5.4 Other Regulatory Requirements

The EA considers all applicable laws and regulations, including but not limited to the following:

- NEPA of 1969 (Public Law [PL] 91-190, 42 United States Code [U.S.C.] §4321-4347)
- 32 CFR §989, *Environmental Impact Analysis Process*
- 40 CFR §1500-1505, CEQ's Regulations on Implementing NEPA
- 50 CFR §402, *Interagency Cooperation - Endangered Species Act of 1973*, as amended
- U.S. Army Corps of Engineers wetlands policy
- Endangered Species Act (ESA) of 1973 (16 U.S.C. §1531-1542)
- Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. §703-712; Ch. 128; July 13, 1918; 40 Stat. 755)
- Archaeological Resources Protection Act (ARPA) of 1979
- National Historic Preservation Act (NHPA) of 1966 (36 CFR §800)
- Native American Graves Protection and Repatriation Act of 1991 (25 U.S.C. §3001 et seq.)
- EO 11988 - Floodplain Management
- EO 11990 - Protection of Wetlands
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Air Force Instruction (AFI) 32-7064, Integrated Natural Resources Management
- AFI 32-7065, Cultural Resources Management
- AFI 32-7066, Environmental Baseline Surveys in Real Property Transactions
- Clean Air Act of 1970 (42 U.S.C. §7401 et seq.)
- AFI 32-7040, Air Quality Compliance and Resource Management Program
- *United States Air Force Air Quality EIAP Guide* found online at http://aqhelp.com.
- Clean Water Act of 1972 (33 U.S.C. §1251 et seq.)
- Pollution Prevention Act of 1990 (42 U.S.C. §13101 and §13102 et seq.)
- Air Force Air Quality EIAP Guide – Fundamentals, Volume 1 of 2
- Considering Cumulative Effects under the National Environmental Policy Act, Council on Environmental Quality, January 1997
- CEQ document "Environmental Justice, Guidance Under the National Environmental Policy Act"
- Air Force Guide for Environmental Justice Analysis under the EIAP
- HHS General Administration Manual Part 30 Environmental Protection

Permits that would be needed prior to site preparation and temporary structure erection include;

- Storm Water Pollution Prevention
- Easement permits for electrical connections

CHAPTER 2: DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section provides detailed information on the Proposed Action and the No Action Alternative. As discussed in **Section 1.4**, the NEPA process evaluates potential environmental consequences associated with a Proposed Action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a Proposed Action, as defined in **Section 1.3**. In addition, CEQ regulations also specify the inclusion of a No Action Alternative against which potential effects can be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in accordance with CEQ regulations.

HHS recently conducted site visits at the following Air Force installations: Goodfellow AFB, Texas, Dyess AFB, Texas and Little Rock AFB, Arkansas. The sites were evaluated for HHS requirements, including:

- Available for occupancy within 30 days of formal notification from the Administration for Children and Families
- Available for at least six months
- Able to be fenced or have adequate security
- Space for a minimum of 7,500 beds
- Separated from military activity
- Within 100 miles of an airport serviced by major air carriers
- Within 100 miles of a major city

After careful consideration, it was determined that Goodfellow AFB met all the required criteria for the Proposed Action by HHS. Dyess AFB and Little Rock AFB are not suitable by HHS based on the above criteria. Dyess AFB does not have availability for occupancy within 30 days due to lack of infrastructure and time needed to prepare the site. Little Rock AFB available siting locations are within close proximity to residential housing and would not have adequate security.

2.1 SELECTION STANDARDS FOR LOCATIONS ON GOODFELLOW AFB

Goodfellow AFB developed the Proposed Action and reasonable alternatives carried forward for analysis by weighing all possible courses of action capable of meeting the Purpose and Need against the following selection standards. These selection standards are based upon HHS needs with respect to providing temporary, short-term shelters for unaccompanied children, and are listed below:

- Site at least 25 acres in size
- Staging area for service trailers
- Outside space available for wrap-around services
- Road access to the site
- Ability to tie to existing utilities
- Removed from military activity

2.2 DESCRIPTION AND SCREENING OF ALTERNATIVES

NEPA and the CEQ regulations mandate the consideration of reasonable alternatives for the Proposed Action. Reasonable alternatives are those that could be used to meet the purpose of and need for the Proposed Action. The following alternatives were identified and screened against the selection standards.

2.2.1 Alternative 1: Proposed Action (Preferred Alternative)

Under the Proposed Action, the Air Force would provide approximately 70 contiguous acres of level, cleared land, and erect temporary structures to provide living and sleeping quarters for up to 7,500 unaccompanied children and work facilities for approximately 7,500 HHS support staff for up to 180 days. The Proposed Action would provide sufficient support structures, construction laydown area, and security fencing to separate the temporary facilities from other areas and functions at Goodfellow AFB.

The following activities would be necessary to enhance unaccompanied children capacity in a timely manner:

- Clearing and leveling land for the purpose of erecting semi-permanent structures to shelter unaccompanied children;
- Allowing HHS to use DoD's temporary facilities for mass sheltering;
- Erecting temporary facilities; and
- Helping transport unaccompanied children from one facility to another in the event of a significant weather event or natural disaster.

Figure 2-1 provides the location of the Proposed Action area on Goodfellow AFB, the available site meeting all of the selection standards.

Figure 2-1. Proposed Action Area

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Construction of the entire Proposed Action is estimated to require up to 30 days. Design plans and specifications are not yet available and a construction schedule has not been fully determined, pending fiscal and other approvals. Details regarding proposed onsite modifications to the Proposed Action area are as follows:

- Fencing would be erected surrounding the entire Proposed Action area and separating it from Goodfellow AFB. Neither unaccompanied children nor HHS employees would have access to Goodfellow AFB.
- A separate gate would be constructed along Old Eola Road, with concurrence received from the City of San Angelo on 30 June 2018. All entrance and exits from the Proposed Action area would occur through this gate.
- Grubbing (removal of trees, shrubs, stumps, and rubbish) and clearing of vegetation would be accomplished within the Proposed Action area. Bulldozers and graders will be used for clearing activities.
- Cleared areas would be covered with approximately 12,000 cubic yards of caliche for erosion and runoff prevention. Caliche would remain intact after HHS departure and site decommissioning.
- Water and electrical connections would be established to existing utility lines. Water connections would be established immediately. Electrical connections would take up to 60 days, during which time approximately 25 generators will be used temporarily to provide electricity until the connections are completed. Up to 3,500 linear feet (ft) by 3 ft deep and 3 ft wide (Total of 31,500 square ft) would be trenched and excavated for water and electrical line connections. Electrical connections would remain after HHS departure and site decommissioning, and water infrastructure would be abandoned in place.
- Environmental Restoration Program (ERP) sites would be fenced off and inaccessible to HHS & unaccompanied children.
- The network of fitness trails would be removed with grubbing process and will not be restored.
- Perimeter Road would be inaccessible to Goodfellow AFB commercial traffic until HHS departure and site decommissioning.
- The Proposed Action area would be restored to Open Area and/or Open/Recreation land use after HHS departure and site decommissioning.
- Sewage, solid, and hazardous waste would be collected and transported offsite weekly in five trucks.
- Supplies would be delivered weekly in five trucks.
- HHS employees would arrive onsite in 12 hour shifts via bus or 3 or more person carpool; shift changes would not occur during peak hours of 5:30 AM to 8:30 AM and 3:30 PM to 5:30 PM
- HHS employees would be housed in hotels, with a minimum of 2 employees per room
- Operation of the shelters is estimated to last up to 180 days, after which the disturbed areas will be returned to the former land use classification
- Additional specific requirements for analyzing each resource area are discussed in **Chapter 4**

The Proposed Action (also referred to as the Preferred Alternative) meets all selection standards identified, and are analyzed in detail in **Chapters 3 and 4** of this EA.

2.2.2 Alternative 2: No Action Alternative

The CEQ regulation, 40 CFR §1502.14(d), requires the inclusion of a No Action Alternative in the NEPA analysis. Under the No Action Alternative, the Air Force would not provide temporary, short-term shelters at Goodfellow AFB to support HHS operations, HHS would not operate the facilities, and would not meet the requirements of the Presidential Executive Order 13841 and Secretary of Defense Action

Memo (29 June 2018). All alternative strategies, including the No Action Alternative, will be assessed in the EA.

This, according to the DHS Programmatic EA (DHS 2014), would result in existing holding facilities becoming increasingly overcrowded with potential for deteriorating health and safety conditions of the inhabitants.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

Two additional alternatives (**Figure 2-2**) were considered, but eliminated from detailed analysis because they do not meet one or more selection standards listed in **Section 2.1**. Goodfellow AFB evaluated these alternatives because they are designated as locations for expansion opportunities at the installation.

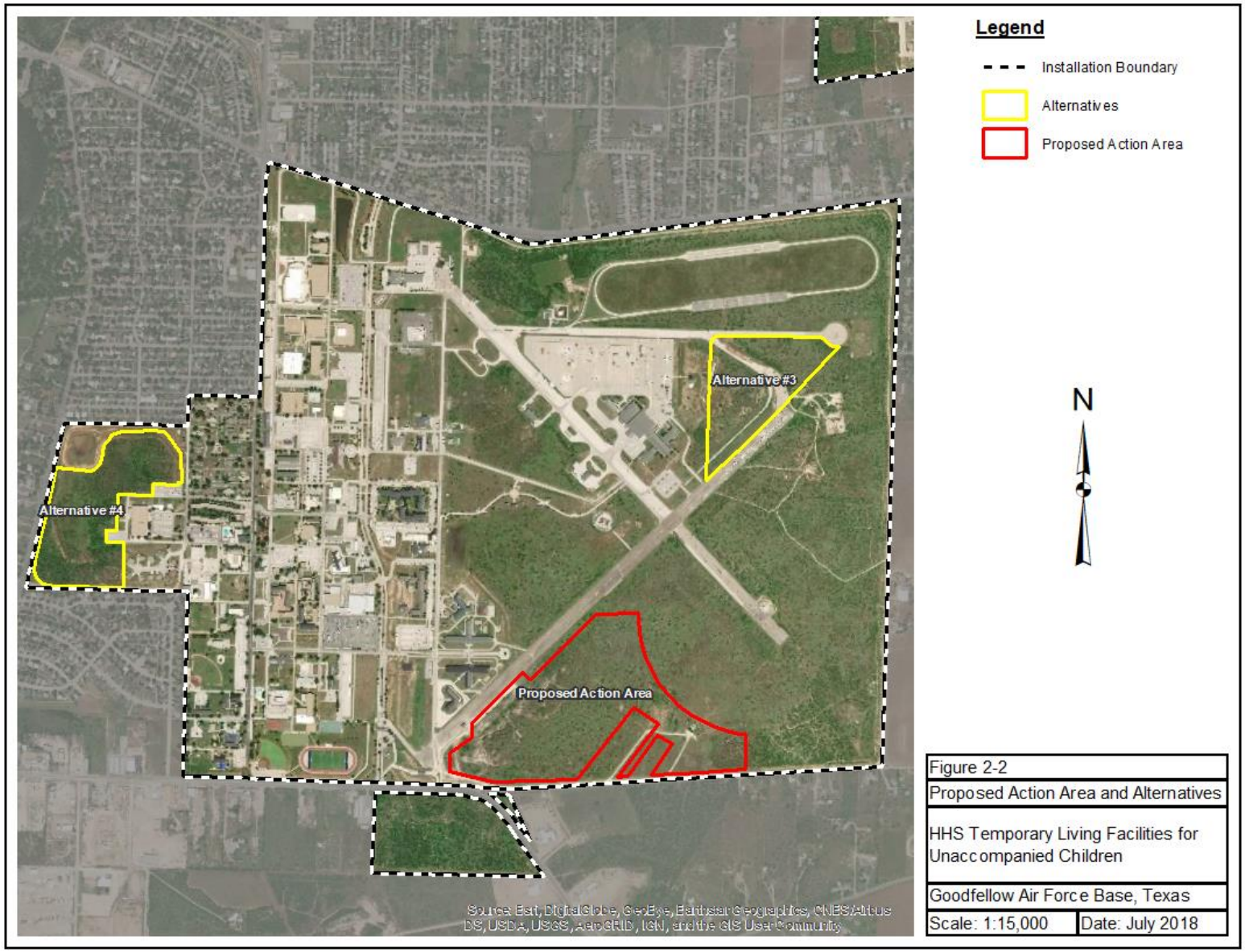
2.3.1 Alternative 3: Site 3

Alternative 3, Site 3, is currently being used for wildland fire training and did not meet the selection standard of being removed from military activities. Therefore, this alternative has been eliminated from detailed analysis.

2.3.2 Alternative 4: Site 4

Alternative 4, Site 4 is close to current military activities and additionally there are concerns with the ability to effectively manage stormwater runoff at the site and the runoff may result in possible degradation of water quality. Therefore, this alternative has been eliminated from detailed analysis.

Figure 2-2. Proposed Action Area and Alternatives



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CHAPTER 3: AFFECTED ENVIRONMENT

This chapter describes the current conditions of the environmental resources, either man-made or natural, that would be affected by implementation of the Proposed or No Action Alternatives. **Section 3.2** focuses on the conditions at Goodfellow AFB and the location of the action. The baseline conditions presented in this chapter are described to the level of detail necessary to support analysis of potential impacts presented in **Chapter 4**, Environmental Consequences.

3.1 SCOPE OF ANALYSIS

Federal regulations (40 CFR §§1500 et seq.) require certain topics be addressed as part of a NEPA analysis. Resource areas that could be affected by the Proposed or No Action Alternatives have been selected to allow for a comprehensive analysis of potential impacts. The following resource areas are discussed in detail in the EA:

- Noise
- Land Use
- Air Quality
- Biological Resources
- Cultural Resources
- Earth Resources
- Hazardous Materials and Wastes
- Infrastructure and Utilities
- Transportation
- Socioeconomic Resources
- Environmental Justice
- Safety and Occupational Health

3.2 RESOURCE TOPICS ELIMINATED FROM DETAILED ANALYSIS

Some resources would not be affected by the Proposed or No Action Alternatives. Resources that have been eliminated from further analysis in this document and the rationale for eliminating them are presented below.

- Airspace Management. Goodfellow AFB does not have a flying mission and therefore does not use or manage airspace during its day-to-day-operations. Implementation of the Proposed Action would not require the creation, use, or management of airspace at Goodfellow AFB. As such, this resource area was not carried forward for detailed analysis within this EA.

- Water Resources. Implementing the Proposed or No Action Alternative would not result in significant impacts to water resources. The Proposed Action would have no impact on surface waters as the Proposed Action area does not contain any surface waters. The Proposed Action would not impact the quality or quantity of groundwater at Goodfellow AFB as any grubbing or trenching would not

occur at the depths (10 ft below ground surface [bgs]) that groundwater is found on Goodfellow AFB. In addition, the Proposed Action area does not contain floodplains and no wetlands have been identified on Goodfellow AFB. Therefore, water resources were not considered for detailed analysis. Stormwater runoff is discussed in **Section 4.3.8.1.5**.

3.3 DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.3.1 Noise

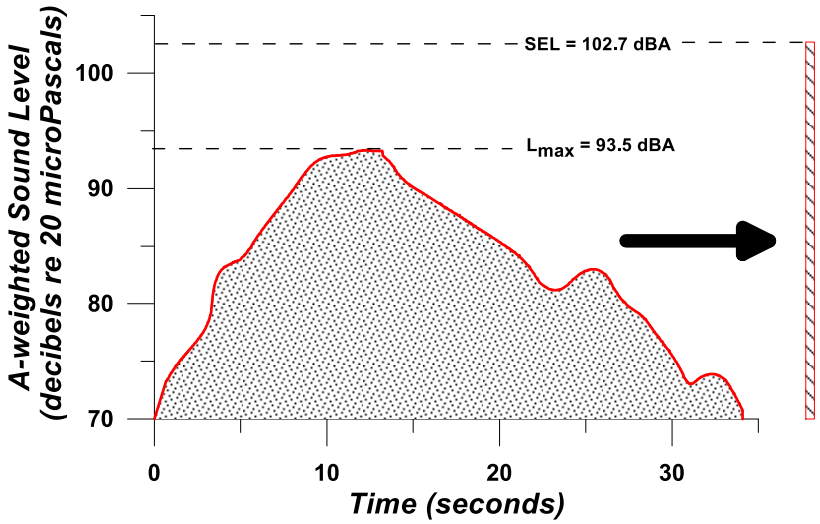
Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air or water, and are sensed by the human ear. Noise is generally described as unwanted sound. Unwanted sound can be based on objective effects (such as hearing loss or damage to structures) or subjective judgments (community annoyance). The response of different individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise, its appropriateness in the setting, the time of day, the type of activity during which the noise occurs, and the sensitivity of the individual. Noise also may affect wildlife through disruption of nesting, foraging, migration, and other life-cycle activities. Sound is expressed in the logarithmic unit of the decibel (dB). A sound level of 0 dB approximates the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB; sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 to 140 dB are felt as pain (Berglund and Lindvall 1995). The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB.

All sounds have a spectral content, which means their magnitude or level varies with frequency, where frequency is measured in cycles per second, or Hertz. To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements usually employ an "A-weighted" scale that de-emphasizes very low and very high frequencies to replicate the reduced human sensitivity to those frequencies. It is common to add the "A" to the measurement unit to identify that the measurement was made with this filtering process (dBA). In accordance with DoD guidelines and standard practice for environmental impact analysis documents, this report utilizes A-weighted sound levels denoted as "dB" unless specified differently.

Noise Metrics: Maximum Sound Level (Lmax) and Sound Exposure Levels (SEL)

Noise events are considered to start when noise levels begin to increase beyond ambient or background levels. Typically, noise generated from construction equipment remains fairly constant during operation but could vary over time. An example of the variation in sound level with time is shown by the solid line in **Figure 3-1**. The Maximum Sound Level (Lmax) is the instantaneous maximum sound level measured/heard during the event. The Lmax is important in judging the interference caused by a noise event with conversation, television or radio listening, sleep, or other common activities. Although it provides some measure of the intrusiveness of the event, it does not completely describe the total event, because it does not include the duration of time that the sound is heard.

Figure 3-1. Maximum Sound Level (Lmax) and Sound Exposure Levels (SEL) Comparison



Source: Wyle Laboratories

As a composite metric, Sound Exposure Levels (SEL) represents all of the sound energy of the single event and includes both the intensity of a sound and its duration. The SEL metric is the best metric to compare noise levels from sources that vary overtime, such as aircraft overflights.

The primary sources of noise at Goodfellow AFB include motor vehicle traffic and training activities. The noise environment generally consists of transportation noise from vehicles used during fire training exercises (i.e. vehicle horns and sirens) and from Department of Transportation tire testing activities. Additional training activity noise includes occasional military exercises involving small-arms gunfire. Typically, the only complaints from off-base residents are in regards to the emergency public notice speaker system found at two locations on the installation. It is used daily for playing the National Anthem while raising and lowering the American flag, as well as for emergency weather warnings and announcements during base-wide exercises. The system is audible several miles way, and the Public Affairs Office have received complaints from several different people living in the adjacent neighborhoods (Goodfellow AFB 2011).

Noise-sensitive Receptors

A noise-sensitive receptor is commonly defined as the occupants of any facility where a state of quietness is a basis for use such as a residence, hospital, or church.

There are three potential noise-sensitive receptors on Goodfellow AFB for the Proposed Action and dismantling of the temporary facilities. The closest noise-sensitive receptor for the actual construction site is the Goodfellow AFB swimming pool, which is located approximately 1,200 ft northwest of the Proposed Action. The Angelo Inn at Goodfellow AFB is located approximately 1,300 ft to the northwest of the Proposed Action area. The Child Development Center is located approximately 1,200 ft from the Proposed Action area.

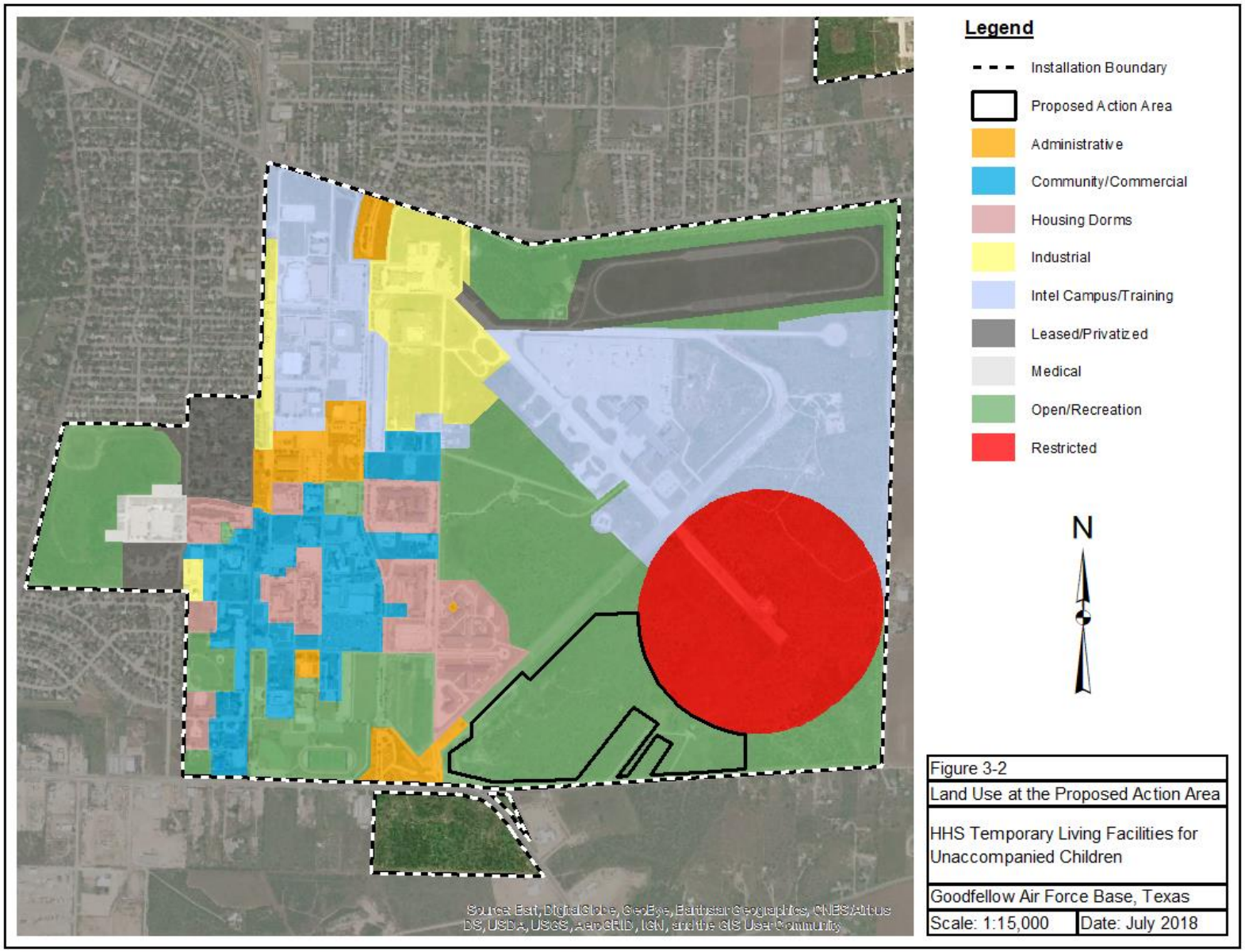
There are several residential properties along Old Eola Road that are adjacent to the Proposed Action. The closest residential property is approximately 600 ft from the Proposed Action area.

3.3.2 Land Use

Land use describes the appearance and activities that take place in a specific area. Land use refers to any human modification of land, and land dedicated for preservation or protection of natural resources. The evaluation of land use is important so as to establish if there is sufficient area for the proposed activities and to identify any potential conflicts with the land use plans. A major part of land use planning at Goodfellow AFB includes combining compatible land uses and separating incompatible land uses. This section of the EA describes the on-base land use resources that could potentially be impacted by the Proposed Action.

Property at Goodfellow AFB is federally-owned and operated by the Air Force. Current land use designations on Goodfellow AFB, as noted in the installation's 2016 Installation Development Plan (IDP), include Administrative, Community/Commercial, Housing/Dorms, Industrial, Intel Campus/Training, Leased/Privatized, Medical, Open Area, Open/Recreation, and Restricted (Goodfellow AFB 2016a). The Proposed Action area is currently undeveloped and designated as Open Area and Open/Recreation land use, as illustrated in **Figure 3-2**. The Proposed Action area also includes a network of fitness trails that runs through this Open/Recreation area along the southern edge of the installation, as well as two former landfill ERP sites, an abandoned paintball course, two unused buildings, and several covered picnic areas (Goodfellow AFB 2016a). Adjacent land parcels are designated as Administrative, Housing/Dorms, and Restricted land use areas.

Figure 3-2. Land Use at the Proposed Action Area



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3.3.3 Air Quality

The United States Environmental Protection Agency (USEPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (CAA) (42 U.S.C. §§7401-7671 et seq.). The CAA also set emission limits for certain air pollutants from specific sources, set new source performance standards based on best demonstrated technologies, and established national emission standards for hazardous air pollutants. According to the CAA, a source whose potential emission of all criteria pollutants exceeds 100 tons per year (tpy) would be considered a major stationary source. A major stationary source for the emission of hazardous air pollutants (HAPs) would exceed the individual 10 tpy and aggregate 25 tpy emissions thresholds defined by the CAA.

The CAA specifies two sets of standards – primary and secondary – for each regulated air pollutant. Primary standards define levels of air quality necessary to protect public health, including the health of sensitive populations such as people with asthma, children, and the elderly. Secondary standards define levels of air quality necessary to protect against decreased visibility and damage to animals, crops, vegetation, and buildings. Federal air quality standards are currently established for six pollutants (known as criteria pollutants), including carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur oxides (SO_x, commonly measured as sulfur dioxide [$SO_{2]}$), lead, particulate matter equal to or less than 10 micrometers in aerodynamic diameter (PM_{10}) and particulate matter equal to or less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$). Although O_3 is considered a criteria pollutant and is measurable in the atmosphere, it is often not considered as a pollutant when reporting emissions from specific sources, because O_3 is not typically emitted directly from most emissions sources. O_3 is formed in the atmosphere from its precursors – nitrogen oxides (NO_x) and volatile organic compounds (VOCs) – that are directly emitted from various sources. Thus, emissions of NO_x and VOCs are commonly reported instead of O_3. The NAAQS for the six criteria pollutants are shown in **Table 3-1**.

Table 3-1. National Ambient Air Quality Standards

Pollutant	Standard Value	Standard Type
CO		
1-hr average	35 ppm	Primary
8-hr average	9 ppm	Primary
NO_2		
1-hr average	1100 ppb[a]	Primary
8-hr average	53 ppb	Primary and Secondary
O^3		
8-hr average[b]	0.075 ppm	Primary and Secondary
Lead Rolling		
3 month Average	0.15 $\mu g/m^3$	Primary
Quarterly Average	1.5 $\mu g/m^3$	
PM_{10}		
24-hr average[d]	150 $\mu g/m^3$	Primary and Secondary
$PM_{2.5}$		
24-hr average[d]	35 $\mu g/m^3$	Primary and Secondary
Annual average[e]	12 $\mu g/m^3$	Primary
SO_2		
1-hr average	75 ppb[f]	Primary
3-hr average	0.5 ppm	Secondary

Source: 42 U.S.C. §§7401 et seq.
Notes:
CO = carbon monoxide
$\mu g/m^3$ = microgram per cubic meter
NO_2 = nitrogen dioxide
O_3 = ozone
SO_2 = sulfur dioxide
$PM_{2.5}$ = particulate matter equal or less than 2.5 micrometers in diameter
PM_{10} = particulate matter equal or less than 10 micrometeres in diameter
ppb = parts per billion
ppm = parts per million
[a] The 98th percentile, averaged over 3 years
[b] To attain the 8-hour ozone standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm
[c] The 24-hour standard for PM_{10} is not exceeded more than once per year on average over 3 years
[d] The $PM_{2.5}$ 24-hour standards is based on the 3-year average 98th percentile of 24-hour concentrations at each population-oriented monitor
[e] The $PM_{2.5}$ annual standard is based on 3-year average of weighted annual mean concentration from single or multiple community monitors
[f] The 99th percentile of 1-hour daily maximum concentration, averaged over 3 years

The USEPA classifies the air quality within an Air Quality Control Region (AQCR) according to whether the region meets federal primary and secondary air quality standards. "Unclassified" indicates that air quality in the area cannot be classified and the area is treated as attainment. An area may have all three classifications for different criteria pollutants.

The CAA requires federal actions to conform to any applicable state implementation plan (SIP). USEPA has promulgated regulations implementing these conformity requirements in 40 CFR §51 and §93. General conformity refers to federal actions other than those conducted according to specified transportation plans (which are subject to the Transportation Conformity Rule). Therefore, the General Conformity rule applies only to non-transportation actions in non-attainment or maintenance areas. Such

actions must perform a determination of conformity if the emissions resulting from the action exceed applicability thresholds specified for each pollutant and classification of nonattainment. Both direct emissions from the action itself and indirect emissions that may occur at a different time or place but are an anticipated consequence of the action must be considered. The Transportation Conformity Rule does not apply to this Proposed Action.

3.3.3.1 Regional Air Quality

Goodfellow AFB is located in Tom Green County, which is within the AQCR 218, in the State of Texas. The entire AQCR 218 is currently USEPA designated as an attainment area for all criteria pollutants. Therefore, Goodfellow AFB is not subject to the General Conformity regulations (40 CFR §§6, 51 and 93).

Goodfellow AFB is not a major stationary source as defined by the CAA. Potential emissions of all criteria pollutants do not exceed the 100 tpy major source threshold. Goodfellow AFB is also not considered a major stationary source for the emission of HAPs because potential emissions are below the individual 10 tpy and aggregate 25 tpy emissions thresholds. **Table 3-2** presents the Goodfellow AFB 2012 actual air emissions from stationary sources.

Table 3-2. Goodfellow AFB 2012 Actual Air Emissions from Stationary Sources

Pollutant	Actual Emissions (tpy)
Carbon Monoxide	2.8
Nitrogen Oxides	4.0
PM_{10}	1.3
$PM_{2.5}$[a]	1.3
Sulfur Oxides	0.047
VOC	1.4
Maximum Individual HAP (Xylene)	0.41
Total all HAPs	1.2

Source: 42 U.S.C. §§7401 et seq.
Notes:
HAP = hazardous air pollutant
$PM_{2.5}$=particulate matter equal or less than 2.5 micrometers in diameter
PM_{10}= particulate matter equal or less than 10 micrometers in diameter tpy = tons per year
VOC = volatile organic compounds
[a] Assumed $PM_{2.5} = PM_{10}$ emissions.

3.3.3.2 Greenhouse Gases

There are six primary Greenhouse Gases (GHGs) of concern: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Only three of the GHGs are considered in the emissions from the Proposed Action. CO_2, CH_4, and N_2O, represent the majority of carbon dioxide equivalent (CO_2eq) associated with the Proposed Action operations. The other GHGs were not considered in the potential emissions from the Proposed Action as they are presumed to be not emitted. HFCs are most commonly used in refrigeration and air conditioning systems; PFCs and SF_6 are predominantly emitted from various industrial processes including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting, none of which are a part of the Proposed Action.

Direct emissions of CO_2, CH_4 and N_2O occur naturally to the atmosphere but human activities have increased global GHG atmospheric concentrations. The 2011 total U.S. GHG emissions were 6,702,300,000 metric tons of CO_2eq (USEPA 2013). U.S. total GHG emissions have risen 8.4 percent from 1990 to 2011 (USEPA 2013).

Goodfellow AFB is not subject to the annual reporting requirements of CO_2eq from stationary source fuel combustion, as required by 40 CFR §98 - Mandatory Greenhouse Gas Reporting.

3.3.4 Biological Resources

Biological resources include native or naturalized plants and animals and the habitats (e.g., grasslands, forests, and wetlands) in which they exist. For this analysis, biological resources are divided into the following categories: vegetation, wildlife, and special status species. Vegetation and wildlife refer to the plant and animal species, both native and introduced, which characterize the region. Special status species include species listed as threatened, endangered or proposed under the ESA of 1973 as designated by the United States Fish and Wildlife Service (USFWS), and species that are protected by laws or programs of states or other agencies. Critical habitat for special status species include areas designated by USFWS as critical habitat protected by the ESA and as sensitive ecological areas designated by state or other federal rulings.

The Federal ESA of 1973 (16 U.S.C. §1531-1542) prohibits any action that causes a "taking" of any federally listed plants or wildlife (i.e., killing, harming, harassment, or any action that may damage their habitat).

The Bald and Golden Eagle Protection Act (16 U.S.C. §668a; 50 CFR §22) prohibits the take, possession, sale, purchase, barter, offer to sell, transport or import of the bald eagle (*Haliaeetus leucocephalus)* or the golden eagle (*Aquila chrysaetos*), including any part, nest, or egg, unless allowed by permit.

The MBTA (16 U.S.C. §703-712) and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, prohibits any "attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof" (USFWS 2013).

The Texas Parks and Wildlife Department (TPWD) maintains a list of state-identified threatened and endangered species. TPWD (contained within chapters 67 and 68 of the Texas Parks and Wildlife Code and §§65.171–65.176 of Title 31 of the Texas Administrative Code) prohibit the taking, possession, transportation, or sale of any of the animal species designated by state law as endangered or threatened without the issuance of a permit.

3.3.4.1 Vegetation

Tom Green County is located within Concho Valley and the Red Prairie area of the Central Great Plains of the Concho Valley. The Red Prairie area of the Central Great Plains once supported grasses such as little bluestem (*Schizachyrium scoparium*), Texas wintergrass (*Nessella leucotricha*), white tridens (*Tridens albescens*), Texas cupgrass (*Eriochloa sericea*), and sideoats grama (*Bouteloua curtipendula*) in undeveloped areas, while tobosa (*Pleuraphis mutica*) and curly mesquite (*Hilaria belangeri*) proliferated in drainage areas. Buffalograss (*Buchloe dactyloides*), hairy tridens (*Erioneuron pilosum*) and purple threeawn (*Aristida purpurea*) typically exist in areas where livestock grazing occurs.

The Proposed Action area is classified as unimproved and includes areas where little or no maintenance has been performed. The Proposed Action area is composed of native and non-native grasses and

mesquite trees, along with the Texas prickly pear (*Opuntia engelmannii var. lindheimeri*), shrubs including catclaw acacia (*Acacia greggii),* and agarita *(Mohonia trifolioata)* (Goodfellow AFB 2016b).

3.3.4.2 Wildlife

Wildlife species commonly found in undeveloped areas of Goodfellow AFB like the Proposed Action area include mammals such as the rock squirrel (*Spermophilus variegatus)*, fox squirrel (*Sciurus niger*), red fox (*Vulpes vulpes*), gray fox (*Urocyon cinereoargenteus*), white-tailed deer (*Odocoileus virginianus*), black-tailed jack rabbit (*Lepus californicus*), eastern cottontail rabibit (*Sylvilagus floridanus*), opossum (*Didelphi virginiana*), nutria (*Myocastor coypus*), porcupine (*Erethizon dorsatum*), ringtail cat (*Bassaricus astutus*), coyote (*Canis latrans*), Mexican free-tailed bat (*Tadarida brasiliensis*), and nine-banded armadillo (*Dasypus novemcinctus*). Common avian species include the loggerhead shrike (*Lanius ludovicianus*), western kingbird (*Tyrannus verticalis*), scissor-tailed flycatcher (*Tyrannus forficatus*), greater roadrunner (*Geococcyx californianus*), white-winged dove (*Zenaida asiatica*), mourning dove (*Zenaida macroura*), cattle egret (*Bubulcus ibis*), and Bewick's wren (*Thryomanes bewickii*). Game species also found on the installation include wild turkey (Meleagris gallopavo) and northern bobwhite quail (Colinus virginianus) (Goodfellow AFB 2016b). Amphibians and reptiles commonly found on the installation include the Rio Grande leopard Frog (*Rana berlandieri*), Great Plains narrow-mounted toad (*Gastrophryne olivacea*), Texas toad (*Bufo speciosus*), prairie kingsnake (*Lampropeltis getulus*), Plains blind snake (*Leptotyphlops dulcis dulcis*), Bull Snake (*Pituophis melanoleucus sayi*), lined snake (*Tropidoclonion lineatum*), checkered garter snake (*Thamnophis marcianus*), Texas rat snake (*Elaphe obsoleta lindheimeri*), western diamondback rattlesnake (*Crotalus atrox*), Texas horned lizard (*Phrynosoma cornutum*), and six-lined racerunner lizard (*Cnemidophorus sexlineatus sexlineatus*).

3.3.4.3 Special Status Species

The 2016 Goodfellow AFB Integrated Natural Resource Management Plan (INRMP), USFWS's Information, Planning and Conservation (IPaC) System tool, and TPWD Texas Natural Diversity Database were reviewed to determine special status species with the potential to occur on Goodfellow AFB (**Table 3-3**). The IPaC database species list is available in **Appendix A**. No critical habitat for special status species is designated on Goodfellow AFB (Goodfellow AFB 2016b).

Table 3-3. Special Status Species with the Potential to Occur on Goodfellow AFB

Common Name	Scientific Name	Status*	Preferred Habitat
Federal			
Interior Least Tern	*Sterna Antillarum athalassos*	E	Nests along sand and gravel bars within braided streams, rivers
Piping Plover	*Charadrius melodus*	T	Wide, flat, open, sandy beaches with very little grass or other vegetation. Nesting territories often include small creeks or wetlands.
State			
Texas Horned Lizard	*Phrynosoma cornutum*	T	Arid and semiarid habitats in open areas with sparse plant cover. Because horned lizards dig for hibernation, nesting and insulation purposes, they commonly are found in loose sand or loamy soils.

*T = Threatened, E = Endangered

No federally listed special status species or their critical habitat are known to occur on Goodfellow AFB, nor is there suitable habitat for federally listed species in the Proposed Action area. The Texas horned

lizard has been observed on Goodfellow AFB in the southeast area near the Proposed Action area (observed in 2000), therefore it may occur in the Proposed Action area (Goodfellow AFB 2016b).

3.3.5 Cultural Resources

Cultural resources are prehistoric and historic sites, districts, structures, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. A historic district is an area that "possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (NPS 1997).

Numerous laws and regulations require that possible effects on cultural resources be considered during the planning and execution of federal undertakings. These laws and regulations stipulate a process of compliance, define the responsibilities of the federal agency proposing the actions, and prescribe the relationships among involved agencies. In addition to NEPA, the primary laws that pertain to the treatment of cultural resources during environmental analysis are the NHPA (especially Sections 106 and 110), the Archaeological Resources Protection Act (ARPA), the American Indian Religious Freedom Act (AIRFA), and the Native American Graves Protection and Repatriation Act (NAGPRA).

Section 106 of the NHPA requires that federal agencies give the Advisory Council on Historic Preservation a "reasonable opportunity to comment" on proposed actions. Federal agencies must consider whether their activities could affect historic properties that are already listed, determined eligible, or not yet evaluated under the National Register of Historic Places (NRHP) criteria. Properties that are either listed on or eligible for listing in the NRHP are provided the same measure of protection under Section 106.

The area of potential effect (APE) for cultural resources is the geographic area or areas within which an undertaking (project, activity, program or practice) may cause changes in the character or use of any historic properties present. The APE is influenced by the scale and nature of the undertaking and may be different for various kinds of effects caused by the undertaking. For the Proposed Action, the Air Force determined that the APE includes approximately 70 of contiguous acres and encompasses the Proposed Action area, including the proposed temporary facilities, existing buildings, and construction laydown area (**Figure 2-1**).

3.3.5.1 Archaeological Resources

The US Department of Interior (National Park Service) conducted a cultural resource assessment of Goodfellow AFB on 30 January - 3 February 1995. No archeological resources were identified and it was recommended that no further archeological investigations were necessary (USDOI 1995).

3.3.5.2 Architectural Resources

In 1993, a Texas State Historic Preservation Office (SHPO) representative visited Goodfellow AFB to assess NRHP eligibility of resources 50 years of age or older (i.e., constructed 1943 or before) and those that might be potentially eligible in the future. At that time, the Texas SHPO found no resources at Goodfellow AFB to be significant or potentially significant (Goodfellow AFB 2014). In 1995, the National Park Service surveyed and assessed 42 resources that were 50 years of age at that time and the Goodfellow AFB Cultural Resources Manager conducted a follow-up survey in 1998. No historic-age resources were determined eligible for listing in the NRHP (Goodfellow AFB 2014).

In 2002, Geo-Marine, Inc. conducted a survey of Goodfellow AFB Cold War-era resources (USAF 2003). Although eight buildings (447, 448, 501, 519, 521, 523, 525, and 530) were recommended NRHP-eligible for their exceptional importance in Air Force intelligence training, Goodfellow AFB re-surveyed the buildings and determined that the resources had no "architectural, historical, or military significance," and thus were not eligible for the NRHP (Goodfellow AFB 2014). No NRHP-eligible resources have been identified.

3.3.5.3 Traditional Cultural Properties

No Indian tribes culturally affiliated with Goodfellow AFB have, to date, identified any sacred sites to which they would like access to under AIRFA, or any properties of religious and cultural significance (Goodfellow AFB 2014). No Traditional Cultural Properties have been identified at Goodfellow AFB.

3.3.6 Earth Resources

An area's earth resources typically consist of surface and subsurface materials and their inherent properties. Principal factors influencing the ability of earth resources to support structural development are geology, topography, and soil stability. Geology is the study of the earth's composition and provides information on the structure and configuration of surface and subsurface features. Topography is defined as the relative positions and elevations of the natural features of an area. The term "soil" generally refers to unconsolidated materials laying over bedrock or other parent material. Soils are typically described in terms of their parent material, slope, physical characteristics, and relative compatibility or constraints with respect to particular construction activities and types of land use. Soil depth, structure, elasticity, strength, shrink-swell potential, and erosion potential determine a soil's ability to support structures and facilities.

Goodfellow AFB lies on a bedrock surface formed on the Choza formation, characterized by shales, silty clays, and beds of gray dolomitic limestone. The depth to bedrock within this formation ranges from 5 to 20+ ft bgs (Goodfellow AFB 2016a). Topography across the western half of Goodfellow AFB is generally flat with elevations on the installation range from 1,834 ft above mean sea level (msl) in the northern portion of the installation to 1,880 ft above msl in the southern portion (Goodfellow AFB 2018a). There are no major natural surface features (depressions or rises) at Goodfellow AFB (USGS 2013). The Proposed Action area also contains multiple earthen mounds which contain concrete, asphalt, and dirt.

Soils at Goodfellow AFB are characterized by very shallow to deep, nearly level to sloping and undulating, clayey and calcareous soils of outwash plains in broad valleys of the Concho River and its tributaries. Soils are moderately alkaline, possess permeability's ranging from 0.2 to 2.0 inches/hour and exhibit moderate runoff potentials. The predominant soil type in the Proposed Action area is Mereta clay loam, which boasts a 0 to 1 percent slope, moderate shrink-swell potential, and is considered highly erodible (Goodfellow AFB 2016a). Angelo clay loam, which boasts a 0 to 1 percent slope, moderate shrink-swell potential, and is not considered highly erodible, is also present in small portions of the Proposed Action area (Goodfellow AFB 2016a). Angelo clay loam is also classified as prime farmland according to the Natural Resources Conservation Service (NRCS) (NRCS 2018b).

3.3.7 Hazardous Materials and Wastes

3.3.7.1 Hazardous Materials

Hazardous material use and management at Goodfellow AFB are regulated by Occupational Safety and Health Administration (OSHA) and the Texas Council on Environmental Quality (TCEQ) under the

Toxic Substance Control Act, Emergency Planning and Community Right-to-Know Act, and Air Force Occupational Safety and Health Standards. The regulations require personnel using hazardous materials to be trained in the application, management, handling, and storage of material; to know the location of material safety data sheets for all hazardous materials that they are using; and to wear the correct personal protective equipment required for materials that are being used.

Asbestos

The USEPA regulates Asbestos under the OSHA, 29 U.S.C. §§669 et seq. Emissions of asbestos fibers to ambient air are regulated under Section 112 of the CAA. An Asbestos-Containing Materials (ACM) survey was conducted on Facility 3070 in 2012. ACM was not identified in any of the materials sampled.

Lead-Based Paint

The Residential Lead-Based Paint Hazard Reduction Act of 1992 regulates the use and disposal of lead-based paint (LBP) at federal facilities. Federal agencies are required to obey all applicable federal, state, interstate, and local laws relating to LBP activities and hazards. In the Proposed Action area, building 3070 was constructed in 1942 and may contain LBP (see **Figure 3-3**).

Radon

Radon, a radioactive gas that seeps out of rocks and soil, comes from uranium in the ground (USEPA 1998). It can occur in high concentrations in soil and rocks containing uranium, granite, shale, phosphate, and pitchblende, and may also occur in soil contaminated with industrial waste byproducts from uranium or phosphate mining (USEPA 2012b). Radon is known to occur in the Goodfellow AFB area. The only known health risk associated with exposure to elevated levels of radon is an increased risk of developing lung cancer. Typically, outside air contains very low levels of radon (USEPA 1998). However, radon can accumulate in enclosed indoor spaces. The USEPA recommends consideration of radon mitigation measures at 4 picoCuries per liter, which is based on the assumption that an individual would be exposed to those levels at least 75 percent of the time, a situation usually found only in residences (USEPA 2012b). The housing units at Goodfellow AFB were modified to achieve acceptable levels. A radon screening survey was performed on the modified homes in 1998 and none of the results for the structures exceeded USEPA or Air Force levels (Goodfellow AFB 2007).

3.3.7.2 Hazardous Waste

Hazardous wastes are defined by the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments, RCRA subtitle C (40 CFR, §§260-270). No hazardous waste services will be provided by Goodfellow AFB. The HHS facilities would be operated pursuant to the applicable Memorandum of Agreement, which will address waste management responsibility to ensure compliance with federal and TCEQ regulatory requirements for off-site disposal of all waste and consistency with installation solid and hazardous management plans.

3.3.7.3 Environmental Restoration Program

In accordance with The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and its amendment, The Superfund Amendments and Reauthorization Act (SARA), the Air Force established the ERP. The ERP addresses the identification and cleanup of hazardous substances and military munitions remaining from past activities at U.S. military installations and formerly used defense sites. ERP efforts are aimed at characterizing all active sites, determining future remedial actions,

and implementing interim removal or remediation actions to reduce risks and eliminate contamination sources. Contamination that occurred before January 1984 is covered under the ERP, and the sites with contamination that occurred after January 1984 are remediated under the Compliance Cleanup program. An area where contaminants may have been released, but have not been validated as a site is called an area of concern (AOC) (Goodfellow AFB 2007).

Goodfellow AFB has a total of 21 ERP sites, two of which are located near the Proposed Action area. LF-02 and AOC-13 are located near the Proposed Action area (**Figure 3-3**) and are described as follows:

Southeast Landfill (LF-02)

The Southeast Landfill (Site LF-02) is approximately 37 acres and is located in the southeastern corner of Goodfellow AFB approximately 3,500 ft east of the Jacobson Gate. Contents of the landfill were predominately household wastes from 1970 to 1982, but may have included demolition debris, industrial waste, and some containerized liquids. Wastes were buried in trenches that were typically 600 ft long, 15 ft wide, 15 ft deep, and 12 ft apart. The southeast landfill was used until 1982 when the installation changed to contract waste collection and disposal. The unused portion of the last trench was leveled with fill dirt and the landfill operations ceased (Goodfellow AFB 2018b).

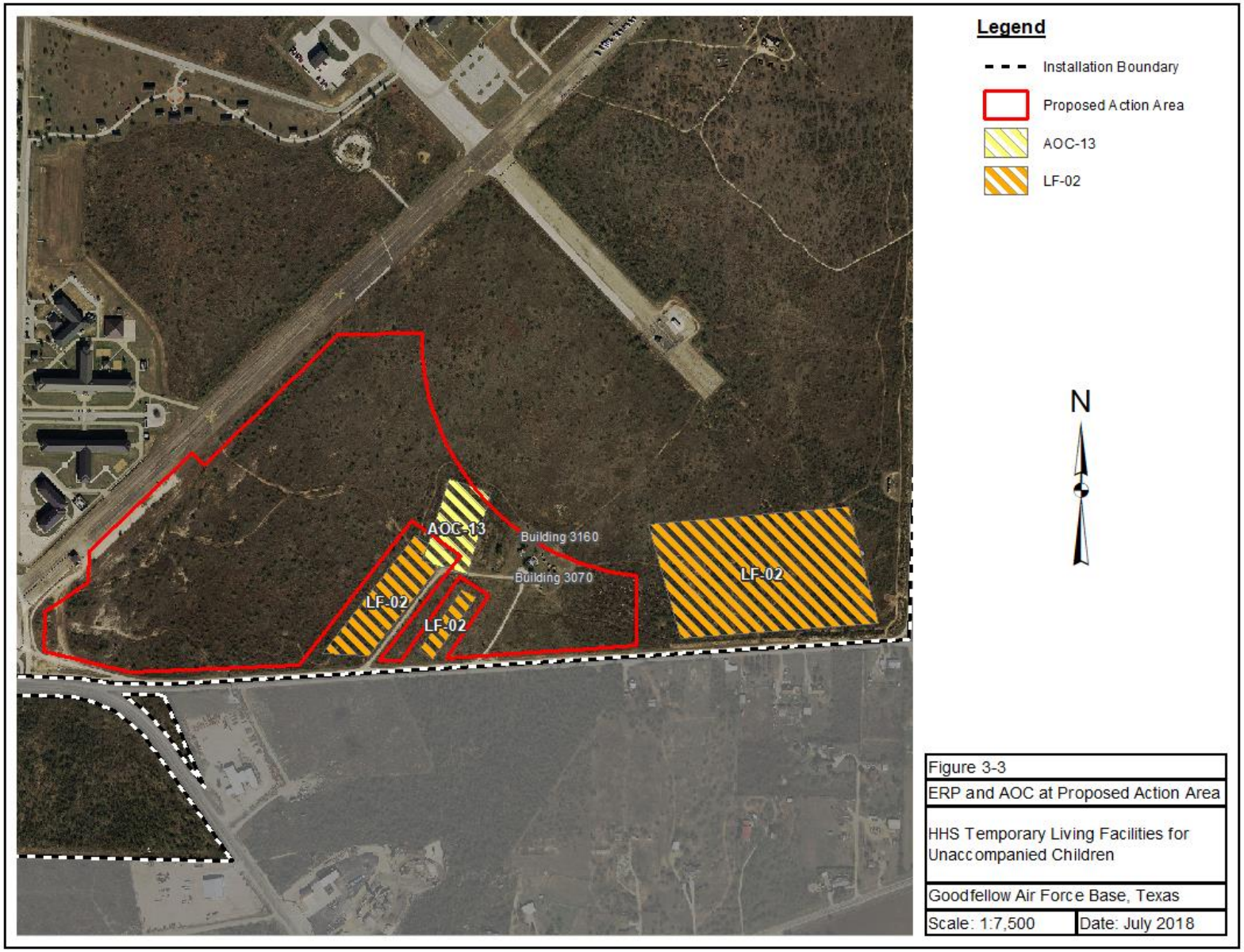
LF-02 was officially closed December 1988 after a post-closure maintenance period was completed. The southeast landfill was closed under State of Texas requirements for a Type I Municipal Solid Waste (MSW) Disposal Facility closure. State regulatory requirements did not require a cap for this landfill. Trenches are currently visible by their noticeable subsidence of the fill dirt. The site currently meets commercial/Industrial land use conditions and the Air Force conducts post closure care (annual inspections, five-year reviews, and periodic mowing). The Air Force demonstrated that this site is protective of human health and the environment, and maintains regulatory compliance (Goodfellow AFB 2018b). A fence would be installed to surround LF-02 to restrict access to the sites.

Former Small Arms Range/Outdoor Firing Range (AOC-13)

The former Small Arms Firing Range was initially constructed in 1968 or 1969 as a rifle range (long berm area) with an attached pistol range (shorter berm area) immediately to the east. Initially, the rifle range was approximately 250-ft wide (east to west) by 360 ft long (north to south). The adjacent pistol range measured approximately 120-ft by 200-ft long. The site was reconfigured multiple times to arriving to its current configuration (approximately 130 ft long by 120 ft wide) with the firing line on a concrete slab along the south end of the "U" shaped berm. The presence of these materials resulted in elevated concentrations of lead, arsenic, antimony, zinc and copper in the upper 2 to 5 ft of the range's soil berms, fallout zone and floor.

Investigations of the Site AOC-13 under the corrective action program began in 1998. In May 2008, the final technical memorandum was submitted to demonstrate that all remaining soils met the applicable human health Protective Concentration Levels and ecological criteria, therefore making a No Further Action determination appropriate. On September 25, 2008, TCEQ declared that No Further Action was required, including institutional land use controls or post-response action care under 30 Texas Administrative Code Section 350 for Site AOC-13. This No Further Action decision determined no significant risk or threat to public health or the environment exists under a future residential land use scenario.

Figure 3-3. ERP and AOC at Proposed Action Area



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3.3.8 Infrastructure and Utilities

Infrastructure and utility resources refer to systems and structures that contribute to the functionability of inhabited areas. Infrastructure and utility components at Goodfellow AFB include transportation systems, electricity, solid waste disposal, potable water, and wastewater treatment services. The following subsections provide a summary of the existing infrastructure present at Goodfellow AFB. Transportation is discussed in **Section 3.3.9**.

3.3.8.1 Electricity

Goodfellow AFB is supplied electricity from American Electrical Power (AEP) by two overhead feeder lines originating from the AEP Concho Plant and Highland Substations (Goodfellow AFB 2012). Electrical supply enters the installation at a switch station located in the northwestern portion of the installation. Five circuits comprised of underground and overhead utility distribution lines serve the installation (Goodfellow AFB 2016a). The capacity of the electrical service is more than adequate for even the peak demand at Goodfellow AFB, and the available capacity of this system is estimated at a healthy 77 percent (Goodfellow AFB 2016a). The current Goodfellow AFB electrical system is shown in **Figure 3-4** and service may be connected at the Proposed Action area.

3.3.8.2 Solid Waste

MSW at Goodfellow AFB is managed in accordance with Air Force Instruction (AFI) 32-7042, *Solid and Hazardous Waste Compliance*. AFI 32-7042 requires installations to implement a solid waste management program to include a solid waste management plan, procedures for handling, storage, collection, and disposal of solid waste, record keeping and reporting, and recycling of solid waste.

3.3.8.3 Water Supply

Potable water at Goodfellow AFB is supplied by the City of San Angelo. The source of the City's potable water includes surface water obtained from a series of five lakes. The system's maximum capacity is 55 million gallons per day (mgd) with an average daily use of 14 mgd (COSA 2018b). The City operates five continuous pumping water towers with a combined storage capacity of approximately 17.2 million gallons (COSA 2018c).

A Water Vulnerability and Risk Assessment conducted at Goodfellow AFB in 2004 indicated the potable water system is well designed, operated, and maintained. More than 358,400 linear ft of water mains distribute water to the installation. Four water mains distribute potable water to Goodfellow AFB at an average pressure of 65 pounds per square inch (Goodfellow AFB 2012). One 12-inch main enters the installation on the north side of the installation and extends south. Two side-by-side 8-inch mains enter the installation on the west side of the installation, and one 12-inch main with a 6-inch meter enters the installation from the north at the fire training area. Another 12-inch main enters the installation on the southern portion of the base. In addition, two 400,000-gallon elevated potable water storage tanks are located along the western boundary of the installation (Goodfellow AFB 2016a). Overall, the system is in good condition and is estimated to have 94 percent available capacity (Goodfellow AFB 2016a). The current Goodfellow AFB water system is shown in **Figure 3-4** and service may be connected in the Proposed Action area.

Figure 3-4. Utilities at the Proposed Action Area

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3.3.8.4 Sanitary Wastewater

The majority of sanitary wastewater at Goodfellow AFB is managed by the City of San Angelo wastewater system. The City wastewater system operates an activated sludge wastewater treatment facility with a daily treatment capacity of 13.2 mgd. The current system is treating an average of 9.21 mgd with the highest peak at 13 mgd (COSA 2018b). No sewage lines are in the vicinity of the Proposed Action area.

3.3.8.5 Stormwater

Stormwater on Goodfellow AFB is managed by one retention feature, three detention basins, and a system of underground pipes and open ditches. Seven outfalls are utilized for discharging stormwater off-site to the City storm sewer system. None of these stormwater features exist within the Proposed Action area. Water generated from on-site training exercises and stormwater runoff from the Fire Training Area is collected and recycled to a 500,000-gallon storage tank for reuse. Surplus wastewater from this process is discharged to the sanitary sewer (Goodfellow AFB 2012). The existing sewer collection system at Goodfellow AFB is estimated to have 97 percent available capacity (Goodfellow AFB 2016a).

3.3.9 Transportation

Transportation resources include the existing vehicular transportation system at Goodfellow AFB and the roads that provide entry to the installation, as well as the capacity of these roads to accept increases in traffic that may result from the Proposed Action.

Goodfellow AFB has two access gates – the North and South Gates – which are located at either end of Kearney Blvd, the main connecting street on the installation. The South Gate, or Jacobson Gate, is the main point of entry to Goodfellow AFB for visitors and for trucks and other commercial vehicles. Peak hours for the Jacobson Gate are considered to be between 5:30 AM and 8:30 AM and between 3:30 PM and 5:30 PM. Overall, the road conditions on Goodfellow AFB are in fair condition, and there are no significant issues with vehicle traffic or congestion (Goodfellow AFB 2016a). Parking is generally well-located and well-sized, and no major availability issues appear to exist (Goodfellow AFB 2016a). The Proposed Action area does include portions of Goodfellow AFB's Perimeter Road, where incoming Goodfellow AFB commercial vehicles are generally directed for installation access (Goodfellow AFB 2016a).

Access to the North Gate is provided by Paint Rock Road / Farm-to-Market Road (FM) 388. Paint Rock Road is maintained by the Texas Department of Transportation (TXDOT) and up to the full standards for Texas roadways. The road is in good condition and generally does not receive heavy traffic (Dominy 2018). Access to the South Gate is provided by S Chadbourne Road / FM 1223 and Old Eola Road. S Chadbourne Road is also up to the full standards for Texas roadways and maintained by TXDOT, but receives heavy traffic because of Goodfellow AFB's main entry gate and several oil business offices in the surrounding area. Peak traffic hours on S Chadbourne Road typically coincide with the peak hours for the Jacobson Gate (Dominy 2018). Old Eola Road is maintained by the City of San Angelo, has a current traffic volume of approximately 1 vehicle per hour, and is in fair condition (Noret 2018). Old Eola Road can be accessed either via S Chadbourne Road or via FM 765.

3.3.10 Socioeconomic Resources

Socioeconomics Resources comprise the basic attributes and resources associated with the human environment, particularly population and economic activity. Population levels are subject to fluctuations

from regional birth and death rates and immigration and emigration of people. Economic activity typically encompasses employment, personal income, and economic growth. Impacts on these socioeconomic components also influence other issues such as housing availability and the provision of public services (e.g., schools, roads, and other infrastructure).

The Region of Influence (ROI) for Socioeconomic Resources typically encompasses the county where the installation is located. For Goodfellow AFB, the ROI is Tom Green County.

Population: The U.S. Census Bureau estimated the population of Tom Green County in 2017 was 118,019, which represents a 7.1 percent increase since 2010. The population of the City of San Angelo increased at a slightly higher percentage (7.4 percent) than Tom Green County from 2010 to 2017, while Texas had a greater percentage increase (12.6 percent) (USCB 2018a). **Table 3-4** shows the total populations for 2010, and total population estimates for 2017.

Table 3-4. Population in Tom Green County, San Angelo, TX, and the State of Texas

Geographic Area	2010	2017	Percent Change (2010-2017)
Tom Green County	110,228	118,019	7.1
San Angelo, Texas	93,221	100,119	7.4
Texas	25,146,100	28,304,596	12.6

Sources: USCB 2018a
Notes: The 2017 total population data are estimates from the 2012-2016 American Community Survey.

As of 2016, total employment at Goodfellow AFB consists of approximately 5,442 personnel, including 1,196 full-time military personnel, 2,446 students, 446 Air Force Reservists/National Guard, 924 government civilian personnel, and 429 other installation personnel. The installation supports 1,828 dependents and 4.399 retirees (Texas Comptroller 2016).

Economic Activity (Employment and Earnings): In 2017, the percentage of persons in the armed forces in the Tom Green County labor force was 3.5 percent. Persons in the armed forces made up a slightly higher percentage of the labor force in San Angelo and a lower percentage overall in the state of Texas (**Table 3-5**) (USCB 2018b).

Table 3-5. Employment by Industry

	Tom Green County	San Angelo, TX	Texas
Percent of labor force in the Armed Forces	3.5%	4.0%	0.5%
Population of employed persons in the civilian labor force	54,594	45,724	13.2 million
Percent Employed Persons by Industry			
Agriculture, forestry, fishing, hunting, and mining	9.0%	8.0%	3.3%
Construction	6.3%	6.1%	8.0%

	Tom Green County	San Angelo, TX	Texas
Manufacturing	5.9%		8.9%
Wholesale Trade	2.3%	6.1%	3.0%
Retail Trade	13.2%	13.4%	11.5%
Transportation and warehousing, and utilities	3.3%	3.1%	5.5%
Information	1.9%	2.2%	1.8%
Finance and insurance, real estate and rental and leasing	5.0%	5.2%	6.6%
Professional, scientific, and management, and administrative and waste management services	8.5%	8.5%	11.2%
Educational services, and health care and social assistance	25.1%	24.6%	21.6%
Arts, entertainment, and recreation, and accommodation and food services	8.5%	9.5%	9.0%
Other services, except public administration	5.1%	5.0%	5.3%
Public administration	5.9%	6.1%	4.2%

Source: USCB 2018b
Notes: The 2017 employment data are estimates from the 2012-2016 American Community Survey and derived from the US Census American FactFinder tool.

Table 3-5 shows the regional employment by industry near Goodfellow AFB. The industry employing the highest percentage of the civilian labor force in Tom Green County, San Angelo, TX, and Texas was the educational services, and health care and social assistance industry. This industry employed more than 25 percent of the labor force in Tom Green County, just under 25 percent of the labor force in San Angelo, Texas, and just over 20 percent in the state of Texas (USCB 2018b). The top private employers in Tom Green County are SITEL, Inc. (Teleservicing), Ethicon (Johnson & Johnson), and Lonestar Beef Processors, while the top public employers are Goodfellow AFB, Shannon Health System, San Angelo Independent School District, and Angelo State University (COSA 2017).

The total economic benefit of Goodfellow AFB to the Texas economy during Fiscal Year (FY) 2015 was estimated at approximately $3 Billion. This includes an estimated contribution to employment within the state of 16,605 jobs, a gross domestic product of approximately $1.75 Billion and estimated disposable personal income of Goodfellow AFB employees of approximately $976 Million (Texas Comptroller 2016).

The per capita income in Tom Green County, the City of San Angelo, and the State of Texas was $26,252, $25,475, and $27,828, respectively (USCB 2018a).

As of May 2018, the unemployment rate (not seasonally adjusted) in Tom Green County, the City of San Angelo, and Texas was 3.1 percent, 3.1 percent, and 4.1 percent, respectively (BLS 2018a; BLS 2018b; USCB 2018b).

Housing and Lodging: The U.S. Census Bureau estimated there were 47,703 housing units in Tom Green County in 2016, of which approximately 4,392 units were vacant. The homeowner vacancy rates in Tom Green County were 1.6 percent, while the rental vacancy rate was 5.0 percent (USCB 2018a).

Within a ninety mile radius of Goodfellow AFB, there are approximately 168 hotels with 13,925 rooms. Including the City of San Angelo, towns within this radius having hotels include Abilene, Big Spring, Colorado City, Sweetwater, Brownwood, Brady, Junction, Sonora, Ozona, Big Lake, and Sterling City. The approximate number of vacant rooms within ninety miles of Goodfellow AFB is 6,019 (**Table 3-6**).

Table 3-6. Hotel Data within 90 Mile Radius of Goodfellow AFB

Location	# of Hotels	# of Hotel Rooms	Vacancy Rate	Rooms Vacant
City of San Angelo[a]	33	2,825	40%	1,130
Abilene[a]	44	3,550	42%	1,491
Big Spring[b]	17	1,260	45%	567
Colorado City[b]	8	680	45%	306
Sweetwater[b]	13	1,105	45%	497
Brownwood[b]	15	1,275	45%	574
Brady[b]	5	425	45%	191
Junction[b]	10	850	45%	383
Sonora[b]	5	425	45%	191
Ozona[b]	7	595	45%	268
Big Lake[b]	8	680	45%	306
Sterling City[b]	3	255	45%	115
Total	168	13,925	----	6,019

Notes:
[a] Source: JLL. 2018
[b] Data for number of hotels gathered from Google. Number of hotel rooms based on estimated 80 rooms per hotel. Vacancy rate source JLL 2018 uses 45% average for the State of Texas.

Education: The City of San Angelo website lists four public school districts, San Angelo Independent School District, Wall Independent School District, Grape Creek Independent School District, and Texas Leadership Independent School District. There are a total of 20 elementary schools, six middle schools, and six high schools within these four districts. Angelo State University is also located in San Angelo (COSA 2018; Post Housing, Inc. 2018).

Public Services: Law enforcement services (police) at Goodfellow AFB are provided by the 17th Security Forces Squadron, and fire protection and emergency services through the 17th Civil Engineer Squadron (Goodfellow AFB Fire Department). The fire department also assists with emergencies in the surrounding community. The 17th Medical Group operates the outpatient medical treatment facility (clinics) at Goodfellow AFB for active-duty personnel, dependents, and retirees. The 17th Medical Group offers primary/family health care, pediatrics, flight medicine, dental, pharmacy, physical therapy, bioengineering, and mental health (Goodfellow AFB 2018c). Other installation services are under the direction of the 17th Force Support Squadron, including operation installation dining facilities, Angelo Inn, a fitness center, swimming pool, and provision community and family support services to installation personnel.

Public services in Tom Green County consist of law enforcement, fire protection, emergency medical services, and medical services. The Tom Green County Sheriff's Office provides law enforcement services for the county. Other law enforcement agencies in the area include the San Angelo Police Department. The City of San Angelo contains a Fire Marshal's Office, as well as a fire department with eight stations located throughout the city. Emergency medical services are provided exclusively by the San Angelo Fire Department (COSA 2018b). There are three hospitals within ten miles of Goodfellow AFB, including Shannon Medical Center, San Angelo Community Medical Center, and River Crest Hospital (Google Maps 2018).

3.3.11 Environmental Justice

Analysis of environmental justice is directed by EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, and EO 13045, Protection of Children from Environmental Health Risks and Safety Risks.

EO 12898 requires each federal agency to identify and address whether their Proposed Action results in disproportionately high and adverse environmental and health impacts on low income or minority populations.

EO 13045 states that each federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately impact children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks." Activities occurring near areas that could have higher concentrations of children during any given time, such as schools and childcare facilities, might further intensify potential impacts on children. To the extent to which children might be impacted, disproportionate impact on children is inherent due to their inherent vulnerabilities.

The ROI for environmental justice is typically defined as the area where off-base human populations would potentially experience environmental impacts as a result of the Proposed Action. The Proposed Action would be contained entirely within installation boundaries and most of the potential impacts would be unlikely to affect human populations.

As noted in **Section 3.3.1**, there are several residential properties along Old Eola Road that are adjacent to the Proposed Action. The closest residential property is approximately 600 ft from the Proposed Action area and is part of Census Tract 8.01. Portions of this tract lie directly south of the installation and fall within the area that would be potentially affected by increased traffic and noise during construction and throughout the approximately six month period (USCB 2010).

Low Income, Minority, Child, and Elderly Populations in the ROI: Table 3-7 outlines the percentage low income and minority living within Census Tract 8.01.

Table 3-7. Low Income, Minority, Child, and Elderly Populations in the ROI

Geographic Area	Total Population (for which minority, child, and the elderly are calculated)	White Alone	Hispanic or Latino	Black or African American	Asian	Two or more races	Total Percent Minority	Percent Low Income
Census Tract 8.01	4,274	58.4%	37.9%	.3%	1.4%	2.2%	41.8	6.4%

USCB 2018a; USCB 2018b
Notes: The low income and minority data are estimates from the 2012-2016 American Community Survey and derived from the US Census Quick Facts and American FactFinder tool.

The total percentage of minority populations in Census Tract 8.01 of Tom Green County is 41.8 percent and the percent low income is 6.4 percent.

The majority of schools and assisted living facilities for elderly persons are located to the north and west of Goodfellow AFB. No sensitive receptors such as schools or assisted living facilities for people who are elderly are located proximal to the Proposed Action area.

3.3.12 Safety and Occupational Health

Operations, maintenance, and construction activities would be performed by trained and qualified personnel in accordance with applicable regulations and standards. Construction site safety at Goodfellow AFB is managed by adherence to regulatory requirements and by implementation of operational practices that reduce risk of illness, injury, death, and property damage. The health and safety of construction contractors are safeguarded by the OSHA regulations 29 CFR §1910 and 29 CFR §1926. These standards specify the amount and type of training required for industrial workers, the use of PPE, engineering controls, and maximum exposure limits for workplace stressors. Contractors responsible for construction and demolition/deconstruction activities would be responsible for compliance with the applicable OSHA regulations and identifying appropriate protective measure for employees (Goodfellow 2018b).

Explosive Safety Quantity Distance (ESQD)

Safety constraints such as explosive safety quantity-distance (ESQD) arcs and unexploded ordnance (UXO) probability areas (known munitions test/training areas) partially determine the suitability of areas for various land uses and, therefore, minimize safety hazards associated with mission activities. ESQD arcs are buffers around facilities that contain high-explosive munitions or flammable elements. The size and shape of an ESQD arc depends on the facility and the net explosive weight of the munitions being housed. Separations set by ESQD arcs establish the minimum distances necessary to prevent the exposure of Air Force personnel and the public to potential safety hazards. The Air Force protects personnel from the risks associated with UXO by controlling access to areas of concern; managing programs to remove UXO; and maintaining records of expenditures, range clearance operations, explosive ordnance disposal incidents, and areas of known or suspected UXO. The Proposed Action area is located outside the ESQD at Goodfellow AFB, including the required 1,000 ft setback (**Figure 3-3**).

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This section describes the direct and indirect impacts of the Proposed and No Action Alternative. The direct and indirect impacts are discussed within each resource section. The potential impacts are discussed in relation to the ROI, as defined in **Chapter 3**, Affected Environment. The No Action Alternative provides a baseline against which the impacts of the Proposed Action can be compared. If the actions result in irreversible or irretrievable results, it is noted within the sections below. Criteria and assumptions used to evaluate potential impacts are discussed at the beginning of each section.

4.2 CHANGE IN CURRENT MISSION

The activities associated with implementation of the Proposed Action would not change the current or future mission of Goodfellow AFB.

4.3 DESCRIPTION OF THE EFFECTS OF ALL ACTIONS ON THE AFFECTED ENVIRONMENT

4.3.1 Noise

The following factors were considered in evaluating potential noise impacts: (1) the degree to which noise levels generated by construction activities were higher than the ambient noise levels; (2) the degree to which there is annoyance and/or interference with activity as a result of the alternative; and (3) the proximity of potential noise-sensitive receptors to the noise source.

Facility construction and demolition work can cause an increase in sound that is well above the ambient level. **Table 4-1** lists noise levels associated with the types of construction equipment expected to be utilized during site preparation, construction, and finishing work associated with the Proposed Action. As shown in **Table 4-1** the construction equipment produces peak sound pressure levels (SPLs) ranging from 75 to 85 dBA at 50 ft from the source which decreases by 6 dBA with every doubling of the distance from the source. The generated noise presented on **Table 4-1** does not account for the ability of sound to be reflected/absorbed by nearby objects, ground surface, foliage, topography, and humidity. In a free field (no reflections of sound), SPLs from construction noise decreases 6 dB with every doubling of the distance from the source (USEPA 1977).

Table 4-1. Construction Equipment Peak SPLs

Equipment	Generated Noise[a] dBA				
	50 ft	100 ft	200 ft	400 ft	800 ft
Backhoe	78	72	66	60	54
Compactor	83	77	71	65	59
Crane	81	75	69	63	57
Dump Truck	76	70	64	58	52
Excavator	81	75	69	63	57
Front-end Loader	79	73	67	61	55
Grader	85	79	73	67	61

Equipment	Generated Noise[a] dBA				
	50 ft	100 ft	200 ft	400 ft	800 ft
Paver	77	71	65	59	53
Pickup Truck	75	69	63	57	51
Roller	80	74	68	62	56
Scraper	84	78	72	66	60

Source: USDOT 2006
Notes: A Noise from a single source. dBA - "A-weighted" decibel ft - feet

Impacts from noise would be considered significant if the Proposed Action resulted in noise levels above 75 dBA, the requisite level to protect the public health and welfare with an adequate margin of safety (USEPA 1974).

4.3.1.1 Alternative 1: Proposed Action

As mentioned in **Chapter 3**, the closest noise-sensitive receptors at Goodfellow AFB to the Proposed Action are the Child Development Center and the Angelo Inn, and are located at a distance of 1,200 ft and 1,300 ft from the Proposed Action area, respectively. There are also several residential properties along Old Eola Road that are adjacent to the Proposed Action area.

Due to the distance from the Proposed Action area, short-term, peak, outside noise levels from construction activities would be less than 50 dBA at the Child Development Center and the Angelo Inn at Goodfellow AFB. These noise levels are what would be experienced outside and do not take into account the 20 dB decrease due to noise attenuating properties of windows and walls. Indoor levels at the Child Development Center would be far below 50 dBA.

The residents that live adjacent to the proposed construction site would experience some temporary disturbances during the construction activities; however, the peak levels of noise would be below 75 dBA. During construction, Best Management Practices (BMPs) to minimize the impacts from noise would be implemented.

Once the facilities become fully operational by HHS, residents in the area would be expected to experience a certain level of noise from the sound of children. The closest residential property from the Proposed Action is approximately 600 ft. It is estimated that even at the maximum occupancy, not all of the children would be outdoors at the same time. Estimates associated with crowd noise for a typical outdoor football game is estimated to be 79 dBA at 360 ft. For a typical adult baseball game, youth soccer game, or adult soccer game, the noise level would be estimated to be approximately 78 dBA at 90 ft (Haynes et al. 2006). The average smallest attendance at an adult baseball game (including outdoor stadiums is over 10,000 people) (ESPN 2018). The expected noise levels for the Proposed Action would be less than any of these events, so it would be unlikely that residents would experience noise levels in excess of 75 dBA. The indoor noise levels at these noise-sensitive receptors are below the level requisite to protect the public health and welfare; therefore, would be considered a negligible impact.

No significant impacts would be anticipated from the Proposed Action.

4.3.1.2 Alternative 2: No Action Alternative

Under the No Action Alternative there would be no impact to the baseline noise environment at Goodfellow AFB.

4.3.2 Land Use

The provision, clearing, and grading of land, construction of temporary facilities, and operation of the temporary facilities by HHS, as well as current and future Goodfellow AFB operations, were examined and compared to existing land use conditions and land use plans to determine impacts to land use at Goodfellow AFB. Factors relating to changes in land use were evaluated. Potential impacts would be considered significant if an action would result in the long term change to land use restrictions, potential conflicting land uses on- and off-base, or the loss of land utilized by the public.

4.3.2.1 Alternative 1: Proposed Action

According to Goodfellow's 2016 IDP, Industrial, Administrative, and Open Area land uses are permitted for future planning within the Proposed Action area (Goodfellow AFB 2016a). Housing/Dorms and Open/Recreation land uses are also permitted with restrictions, as the former landfill ERP sites have only been cleaned to commercial/industrial standards and cannot be used as Housing/Dorms (Goodfellow AFB 2018a). The IDP also notes that the Proposed Action area could be the focus of a new training mission in the future, as it would provide enough space to build a self-contained live-work campus for a new tenant training mission (Goodfellow AFB 2016a). However, there are currently no plans to add a training mission at Goodfellow AFB in this location. The Proposed Action would change the land from its current use as an Open Area and Open/Recreation area to a Housing/Dorms and Administrative areas that would shelter the unaccompanied children in temporary facilities and provide temporary administrative support structures for HHS employees for up to 180 days. The landfill ERP sites located within the Proposed Action area would be fenced off and inaccessible to both unaccompanied children as well as HHS employees. The network of fitness trails and abandoned paintball course within the Proposed Action area would be removed during the grubbing process. After 180 days, the area would be returned to its former Open Area and Open/Recreation land uses, but the network of fitness trails would not be restored. Implementation of the Proposed Action would not result in a long term changes to land use designations or restrictions at Goodfellow AFB.

While the on-base land use designation would temporarily change as a result of the Proposed Action, this change would not conflict with the adjacent land uses at Goodfellow AFB. The Proposed Action area would be surrounded by security fencing to separate the facilities from the remainder of Goodfellow AFB and its mission and operations and, therefore, would not conflict with the adjacent on-base land uses. Additionally, the Proposed Action area would be confined to Goodfellow AFB so it would not conflict with off-base land uses. The Proposed Action would not result in the loss of public lands.

No significant impacts would be expected as a result of the Proposed Action.

4.3.2.2 Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no change in the baseline land use conditions at or around Goodfellow AFB.

4.3.3 Air Quality

The following factors were considered in evaluating air quality: (1) the short- and long-term air emissions generated from facility construction and demolition; and on-road vehicle activities; (2) the type of emissions generated; and (3) the potential for emissions to result in ambient air concentrations that exceed one of the NAAQS or SIP requirements. The air pollutant emission calculations for the Proposed and No Action Alternative included in the sections below are detailed in **Appendix B.**

4.3.3.1 Alternative 1: Proposed Action

4.3.3.1.1 Regional Air Quality

The Proposed Action would result in short-term emissions during the erection of new facilities. The only new air emissions that would be associated with the Proposed Action are direct and indirect emissions sources resulting from the construction activities, additional personnel, generators for power, and vehicle supply trips. Emissions from construction activity can cause temporary and localized increases in air emissions. There would be no long-term significant increases in air emissions, as the construction is not indefinite.

An Air Quality Impact Assessment was conducted in accordance with the guidance in the Air Force Air Quality EIAP Guide and 32 CFR Part 989.30 which refers to AFI 32-7040. Under the Air Force guidance, a Net Change Emissions Assessment was performed which compared all net (increases and decreases caused by the federal action) direct and indirect emissions against general conformity de minimis values as indicators of air quality impact significance. While the Proposed Action would not occur within a nonattainment or maintenance area, the General Conformity de minimis (i.e., too trivial or minor to merit consideration) values (40 CFR 93.153) were used as a conservative indicators of potential air quality significance. If these values represent de minimis emissions levels for nonattainment or maintenance areas; logically they would also represent emissions levels too trivial or minor to merit consideration in an attainment area. Therefore, any net emissions below these significance indicators are consider too insignificant to pose a potential impact on air quality.

The Net Change Analysis was performed using the Air Force's Air Conformity Applicability Model (ACAM) for criteria pollutant (or their precursors) and GHGs. The results of the ACAM assessment are summarized in **Table 4-2** (see **Appendix B** for details).

Table 4-2. Results of ACAM Assessment

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	14.082	100	No
NOx	47.174	100	No
CO	69.228	100	No
SOx	8.710	100	No
PM_{10}	16.978	100	No
$PM_{2.5}$	9.389	100	No
Pb	0.000	100	No
NH3	0.222	100	No
CO_2eq	8646.5		

No significant short-term or long-term impacts to regional air quality would be expected from the Proposed Action by either Air Force or HHS activities.

4.3.3.1.2 Greenhouse Gases

Under the Proposed Action approximately 2,030 metric tons of CO_2eq would be released due to the proposed construction. The amount of CO_2eq released under the Proposed Action represents less than 0.00004 percent of the 2011 U.S. anthropogenic emissions of CO_2eq. This is a limited amount of emissions that would not contribute significantly to climate change, but any emission of GHGs represents an incremental increase in global GHG concentrations. The Air Force is poised to support climate-

changing initiatives globally, while preserving military operations, sustainability, and readiness by working, where possible, to reduce GHG emissions.

Activities under the Proposed Action are not subject to the requirements of the USEPA National Greenhouse Gas Reporting Rule.

Therefore, no impacts to GHGs would result from the Proposed Action.

4.3.3.2 Alternative 2: No Action Alternative

There would be no new emissions associated with the No Action Alternative and conditions would remain as described in **Section 3.3.1**.

4.3.4 Biological Resources

Evaluation of impacts is based upon: 1) the importance (legal, commercial, recreational, ecological, or scientific) of the resource, 2) the rarity of a species or habitat regionally, 3) the sensitivity of the resource to proposed activities, and 4) the duration of the impact. Impacts to biological resources would be considered significant if priority species or habitats are adversely affected over relatively large areas and/or disturbances cause reductions in population size or distribution of a priority species.

4.3.4.1 Alternative 1: Proposed Action

4.3.4.1.1 Vegetation

As part of the Proposed Action, there would be a permanent loss of herbaceous cover over the entire Proposed Action area. All vegetation would be grubbed or cleared and replaced by a caliche cover. Because the current vegetation is not considered an important resource, nor a rare species or habitat, no significant impacts to vegetation would be anticipated from the Proposed Action. During HHS operations, impacts to vegetation are not anticipated as vegetation removal actions will be complete prior to HHS operations.

4.3.4.1.2 Wildlife

Wildlife living within the Proposed Action area would be permanently displaced, as would wildlife in adjacent lands affected by the habitat and human disturbance during both Air Force and HHS activities. Because the existing vegetation within the Proposed Action area is characterized by native vegetation such as mesquite trees and cacti, weedy or invasive species, the loss of quality habitat for wildlife and the impacts to wildlife species diversity is expected to be minimal. Regionally the effects on wildlife would be minimal. Once the proposed facilities are dismantled, wildlife would naturally repopulate the area.

As aircraft operations have been permanently suspended on Goodfellow AFB, and the installation no longer has a flying mission, neither a Bird/Wildlife Aircraft Strike Hazard Plan nor a Migratory Bird Depredation Permit is applicable for migratory birds

No significant impacts to wildlife would be anticipated as a result of the Proposed Action.

4.3.4.1.3 Special Status Species

As mentioned in **Section 3.3.4.3**, no federally listed special status species are known to occur in the Proposed Action area (Goodfellow AFB 2016b). The Proposed Action area mostly consists of native

vegetation such as mesquite trees and cacti and does not contain surface waters such as creeks or wetlands that would be suitable habitat for the interior least tern or piping plover.

Though no federally listed species are known to occur on the Proposed Action area, there is potential for occurrence of the Texas horned lizard, a state threatened species, to occur in the Proposed Action area. The Texas horned lizard prefers grassland and shrubland habitats and in order for the Texas horned lizard to survive, harvester ant populations must be present. Prior to construction (and during April to September), the installation would conduct specific species surveys for the Texas horned lizard and harvester ant populations to identify if the Texas horned lizard is present within the Proposed Action area. Surveys and potential relocation of identified species would be coordinated with TPWD to determine, if necessary, appropriate relocation methodology (e.g. San Angelo Park). During construction, BMPs, including observations for harvester ant clearings (i.e. the three- to six-foot wide clearing around their nests) should be implemented to avoid harming Texas horned lizards.

During HHS operations, impacts to special status species are not anticipated as no federally listed species are known to occur in the Proposed Action area and surveys and relocation actions for the Texas horned lizard would be implemented prior to HHS operations.

Therefore, no effects to federally listed species are expected to occur from the Proposed Action.

4.3.4.2 Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions and therefore no impacts to biological resources.

4.3.5 Cultural Resources

4.3.5.1 Alternative 1: Proposed Action

4.3.5.1.1 Archaeological Resources

No archaeological properties are present within the APE. Should artifacts or burial remains be encountered during construction, work must cease within a 50-meter radius of the project until the Cultural Resources Manager or their surrogate can inspect the find. The Air Force sent the Texas SHPO a letter on 3 July 2018 requesting concurrence that there would be no effect on archaeological resources. During HHS operations, impacts to archaeological resources are not anticipated because any artifacts or burial remains would have been encountered prior to HHS operations.

Therefore, there would be no effect on historic properties as a result of the Proposed Action.

4.3.5.1.2 Architectural Resources

Two buildings are present within the APE – buildings 3070 and 3160. Neither building is determined NRHP-eligible by the Air Force. In 2013, the Texas SHPO concurred with the Air Force's determination that building 3070 is not eligible for the NRHP (**Appendix A**). The Air Force sent the Texas SHPO a letter on 3 July 2018 requesting concurrence that there would be no effect on historic properties.

Therefore, there would be no effect on historic properties as a result of Air Force or HHS activities.

4.3.5.1.3 Traditional Cultural Properties

No traditional cultural properties are present within the APE. Should artifacts or burial remains be encountered during construction, work must cease within a 50-meter radius of the project until the Cultural Resources Manager or their surrogate can inspect the find. Tribal consultations and copies of correspondences are included in **Appendix A**.

During HHS operations, impacts to traditional cultural properties are not anticipated because any artifacts or burial remains would have been encountered prior to HHS operations. Therefore, there would be no effect on traditional cultural properties as a result of the Proposed Action.

4.3.5.2 Alternative 2: No Action Alternative

Since the No Action Alternative would not result in the demolition or alteration of NRHP-eligible buildings or the disturbance of archaeological or traditional cultural properties, there would be no impact to cultural resources.

4.3.6 Earth Resources

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of the Proposed Action on earth resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering designs are incorporated into project development. Analysis of potential impacts on earth resources typically includes:

- Identification and description of resources that could potentially be affected.
- Examination of the Proposed Action and the potential effects it would have on the resource.
- Provision of mitigation measures in the event that potentially adverse impacts are identified.

Impacts to earth resources would be significant if they alter the geology, topography, and soil composition, structure, or function; or result in long-term erosion without the implementation of management or mitigation techniques.

4.3.6.1 Alternative 1: Proposed Action

The concrete, asphalt, and dirt contained in the earthen mounds throughout the Proposed Action area would be removed and transported off-base. Following the removal of all other vegetation, materials, and other debris, the full 70 acres would be graded, leveled, and covered in approximately 12,000 cubic yards of caliche (gravel) to assist in drainage and erosion prevention. Up to 40,000 square ft of impervious surfaces could be created to construct the temporary lodging and administrative facilities. In order for HHS to connect to the Goodfellow AFB electric and water systems, up to 31,500 ft of trenching to depths between 2 and 4 ft bgs would be required to install the necessary infrastructure. Up to 60 electrical poles would be installed throughout the Proposed Action area, as needed to support HHS lodging and operations. To install these electrical poles, holes approximately 2 ft in diameter and approximately 6 ft deep would be required at each pole location. The electrical infrastructure developed in association with the Proposed Action would be retained after HHS departure and site decommissioning, and Goodfellow AFB would determine the suitability of the site for future development. Water infrastructure developed in association with the Proposed Action would be abandoned in place after HHS departure and site decommissioning. Minor ground disturbance would be required to install the security fence around the perimeter of the Proposed Action area, and also to separate the ERP sites from the unaccompanied children and HHS employees. Up to 9,240 linear ft of fencing would be installed at depths between 2 – 4

ft bgs. After HHS departure and site decommissioning all temporary facilities, added infrastructure, fencing, and impervious surfaces would be removed, leaving a level 70 acres with caliche covering.

The Choza formation that lies underneath Goodfellow AFB would be minimally impacted by the Proposed Action in the short-term only. These impacts would result from the trenching required to connect HHS to the Goodfellow AFB electric and water system(s) and the depth of digging required to install the necessary electric poles. This disturbance would occur during construction only, and would not exceed the depth of 6 ft bgs. The topography at Goodfellow AFB is already generally flat and varies only about 50 ft in elevation across the installation. Grading approximately 70 acres to be level would not alter the overall topographic profile of Goodfellow AFB or the City of San Angelo. The grading of the Proposed Action area would result in long-term impacts to topography in this portion of Goodfellow AFB, however, these impacts would not be significant.

The Mereta clay loam that underlies the majority of the Proposed Action area is considered highly erodible, which makes it more susceptible to erosion and stormwater runoff. This susceptibility would increase when the Proposed Action area is cleared of vegetation, materials, and other debris, and then graded to be level. However, the addition of approximately 12,000 cubic yards of caliche as well as the development of up to 40,000 square ft of impervious surfaces would significantly reduce soil erosion. The appropriate BMPs would be implemented during construction as developed and permitted in coordination with Tom Green County and the TCEQ to prevent soil erosion and stormwater runoff during the grading and construction phases of the Proposed Action. Additionally, a Stormwater Pollution Prevention Plan (SWPPP) is being developed by the Air Force and would be followed during construction. While the Angelo clay loam found in small portions of the Proposed Action area is classified as prime farmland by the NRCS, this land is not currently used for farming, nor could it be used for farming due to its location on an active Air Force installation and its previous uses. Therefore, the Angelo clay loam found in the Proposed Action area is not subject to the protections granted to prime farmland under the Farmland Protection Policy Act (FPPA) (NRCS 2018ab). With the caliche cover and the implementation of BMPs and the SWPPP, both short- and long-term impacts to soils would be less than significant.

Both short- and long-term impacts to Earth Resources at Goodfellow AFB would result from the Proposed Action; however, with implementation of appropriate BMPs, establishment of a SWPPP, and the retention of the caliche covering after HHS departure and site decommissioning would reduce these impacts to less than significant. During HHS operations, there would be no ground disturbing activities and therefore no significant impacts to Earth Resources would be expected.

4.3.6.2 Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions of earth resources at Goodfellow AFB.

4.3.7 Hazardous Materials and Wastes

The degree to which the Proposed and No Action Alternatives could affect the existing environmental management practices was considered in evaluating potential impacts to hazardous materials and wastes.

4.3.7.1 Alternative 1: Proposed Action

4.3.7.1.1 Hazardous Materials

In the Proposed Action area, building 3070 may contain LBP and is therefore not recommended for use as shelters for unaccompanied children. Any assessment of radon in the Proposed Action area facilities would be conducted by HHS.

Because the temporary facilities would not be constructed as permanent structures, radon impacts would not be expected from the Proposed Action. During HHS operations, the use or storage of hazardous materials would be handled according to local, state, and federal regulations. No significant impacts would be expected to result from the Proposed Action.

4.3.7.1.2 Hazardous Waste

Any hazardous waste generated by the Proposed Action would be handled in accordance with all federal, state, local laws and regulations. In the event of a hazardous spill, immediate action would be taken to contain and clean up the spill in accordance with the appropriate regulation. The generation, storage, removal and disposal of regulated medical waste would follow all local, state, and federal guidelines, which would be managed by HHS. Any hazardous waste generated due to the Proposed Action would be handled by HHS, complying with Goodfellow AFB, local, state, and federal regulations. HHS would obtain a temporary hazardous waste generator number. No significant impacts would be expected to result from the Proposed Action.

4.3.7.1.3 Environmental Restoration Program

LF-02 is located near the Proposed Action area (**Figure 3-3**). The site was closed in 1988 and cleaned up to commercial/industrial land use conditions. As such, the site cannot be used for residential purposes, therefore, it is not included in the Proposed Action area. The site would be fenced off, separated, and not accessible to HHS.

AOC-13 is located within the Proposed Action area (**Figure 3-3**). On September 25, 2008 the TCEQ declared that no further action was required on the site and the site no longer poses a threat to human health or the environment. Therefore, the site is safe for residential use and included in the Proposed Action area.

No significant impacts would be expected to result from the Proposed Action.

4.3.7.2 Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions of hazardous materials and waste use and management at Goodfellow AFB.

4.3.8 Infrastructure and Utilities

An impact to infrastructure and utilities would be considered significant based on the following criteria: 1) the degree to which a utility service would have to alter infrastructure, operating practices, and/or personnel requirements; or, (2) the degree to which the change in demands from implementation of the proposed or alternative action would impact the utility system's capacity.

4.3.8.1 Alternative 1: Proposed Action

4.3.8.1.1 Electricity

HHS would use approximately 25 generators to provide electricity for the first 60 days of the Proposed Action, which would include some of both the construction and operational phases proposed. HHS would provide these generators. After approximately 60 days, the Proposed Action area would be connected to the main Goodfellow AFB electrical system along either the southwestern border of the Proposed Action area by the Jacobson Gate, or along the southeastern border of the Proposed Action area near the existing ERP sites.

While this would increase the demand for electricity, the Goodfellow AFB electrical system is robust and has ample capacity to accommodate this temporary increase without threatening the day-to-day mission and operations of the installation (Goodfellow AFB 2016a). The increase in electricity demand would be temporary and would end with HHS departure and site decommissioning after 180 days. While the Proposed Action would impact electricity resources at Goodfellow AFB, these impacts would be short-term and would not be significant.

No significant impacts to electricity at Goodfellow AFB would be anticipated to result from the Proposed Action.

4.3.8.1.2 Solid Waste

MSW generated by the Proposed Action would be managed and operated by HSS. HSS would follow all regulations set forth by the TCEQ for collection and disposal of solid waste. More information on the TCEQ regulations on the collection and disposal of solid waste can be found at https://www.tceq.texas.gov/permitting/waste_permits/msw_permits (TCEQ 2018).

There would be no significant effects associated with the collection and disposal of solid waste for the Proposed Action.

4.3.8.1.3 Water Supply

The Proposed Action would connect the HHS facilities to the Goodfellow AFB water system and tap into the water that is supplied by the City of San Angelo. This connection could be made at any point along the western boundary of the Proposed Action area near Jacobson Gate, or along the northwestern boundary of the Proposed Action area along Kickapoo Trail.

While the Proposed Action would result in a temporary increase in water demand at Goodfellow AFB, the Goodfellow AFB water network is in good condition and has the available capacity to accommodate the increase in demand without threatening the day-to-day installation mission and operations. Therefore, the short-term impacts to the water supply at Goodfellow AFB would be less than significant.

No significant impacts to the water supply at Goodfellow AFB would result from the Proposed Action.

4.3.8.1.4 Sanitary Wastewater

Any wastewater created as a result of the Proposed Action would be removed from Goodfellow AFB and handled in accordance with all appropriate laws and regulations by HHS employees or contractors. Therefore, no impacts to the wastewater system at Goodfellow AFB would be anticipated to result from the Proposed Action.

4.3.8.1.5 Stormwater

The removal of vegetation and introduction of up to 40,000 square ft of impervious surfaces to the Proposed Action area would result in a long-term increase in stormwater runoff at Goodfellow AFB. A layer of caliche would be added to the Proposed Action area to assist with preventing stormwater runoff, but ultimately the stormwater would runoff following the topography of the land, which would direct the water in a northwesterly direction, towards the existing Goodfellow AFB stormwater features. Construction activities will be conducted in accordance with permit conditions set forth in the Texas Pollution Discharge Elimination System (TPDES) General Permit for Construction Storm Water Runoff.

Despite the anticipated increase, the existing stormwater features and sewer collection system have the capacity to accommodate the potential increase in stormwater that would generated as a result of the Proposed Action. Therefore, the Proposed Action would not significantly impact stormwater resources at Goodfellow AFB.

4.3.8.1.6 Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions of Goodfellow AFB electricity, solid waste, water supply, sanitary wastewater, or stormwater infrastructure and/or utilities.

4.3.9 Transportation

An impact to transportation resources would be considered significant if the existing vehicular transportation system at Goodfellow AFB and on the roads that provide entry to the installation are not in the proper condition or do not have the capacity to accommodate the increase in traffic that would result from the Proposed Action.

4.3.9.1 Alternative 1: Proposed Action

The Proposed Action would result in minor, short-term impacts to transportation resources at Goodfellow AFB and the roads that provide entry to the installation. A separate entry gate would be constructed off of Old Eola Road through which all workers, supplies, HHS employees, and unaccompanied children would enter and exit the Proposed Action area. No traffic resulting from HHS activities under the Proposed Action would be routed through either the North or the Jacobson Gates. The fencing installed to separate the Proposed Action area from the remainder of installation operations would restrict Goodfellow AFB commercial vehicle access to portions of Perimeter Road until HHS departure and site decommissioning.

Implementation of the Proposed Action would increase vehicular traffic on the roads surrounding Goodfellow AFB until HHS departure and site decommissioning after 180 days. Box trucks hauling construction materials on-base or debris and other solid waste off-base during the construction process would result in approximately eight roundtrips through the proposed HHS Gate each day during the estimated 30 day construction phase. During operation, box trucks hauling supplies would arrive weekly, and would add approximately ten roundtrips per week to the traffic surrounding Goodfellow AFB. Box trucks removing solid waste from the site would also add approximately ten roundtrips per week. HHS employees would be bussed into the Proposed Action area at each shift change.

Unaccompanied children would be bussed in on a weekly basis until the full capacity of approximately 7,500 children is met. Approximately 1,000 children will be bussed in each week, using approximately 15 busses per arrival until the full capacity of approximately 7,500 children is met. This would add a total

of approximately 120 total bus trips for arrivals, and another 120 total trips to relocate the children after 180 days.

HHS employees would arrive on-site in 12-hour shifts either via bus or via three-or-more person carpools. Shift changes would not occur during the peak hours for the Jacobson Gate and S Chadbourne Road of 5:30 AM to 8:30 AM and 3:30 PM to 5:30 PM. Approximately one HHS employee would be required to be on-site for every two unaccompanied children at any given time. During the first week of operation, approximately 500 HHS employees would arrive and approximately 500 would depart via bus or carpool at each 12-hour shift change, using approximately eight busses or 170 carpools per shift. As the number of unaccompanied children at the Proposed Action area increases, the number of HHS employees arriving and departing via busses or carpools would increase accordingly. At maximum occupancy, approximately 3,750 HHS employees would arrive and approximately 3,750 would depart at each 12-hour shift change, using approximately 55 busses or 1,250 carpools per shift. During the final four months of operation, the Proposed Action would add approximately 110 roundtrips per day if only busses are used or approximately 2,500 roundtrips per day if only carpools are used, or any combination of busses and carpools in between for HHS employee shift change..

The Proposed Action would result in minor, short-term impacts to on-base transportation resources at Goodfellow AFB. A separate entry gate would be established for HHS, so there would be no additional traffic on Goodfellow AFBs roads resulting directly from the Proposed Action. Portions of Goodfellow AFB's Perimeter Road would be cut off from the rest of the installation, so Goodfellow AFB commercial traffic entering and exiting via the Jacobson Gate would not be able to use this road to access the remainder of the installation. Until HHS departure and site decommissioning, Goodfellow AFB traffic would be routed through the main part of the installation to reach their intended destination. Roads at Goodfellow AFB are in fair condition and would be able to accommodate the increase in traffic from the rerouting of commercial vehicles. Therefore, impacts to on-base transportation resources at Goodfellow AFB would not be significant.

The City of San Angelo has been coordinated with and has no issues with the placement of the HHS gate on Old Eola Road (Noret 2018). The Proposed Action would add to vehicular traffic to the Goodfellow AFB area for up to 180 days. Traffic on S Chadbourne Road would be anticipated to increase temporarily as construction materials and workers, supplies, HHS employees, and unaccompanied children gain access to the HHS entry gate off Old Eola Road, and any wastes are removed from the Proposed Action area. HHS employee shift change would not occur during the peak hours for the Jacobson Gate and S Chadbourne Road, which would decrease the potential for additional congestion during these times. Old Eola Road is also accessible via FM 765, which receives far less traffic than S Chadbourne Road Use of FM 765 to access the HHS entry gate would decrease the potential for congestion on S Chadbourne Road during peak hours. Any transportation of construction materials and workers, supplies, unaccompanied children, and/or disposals that may occur during peak hours would not significantly add to or increase traffic on either S Chadbourne Road or FM 765. After HHS departure and site decommissioning, Old Eola Road would be restored to its current physical condition, and the available capacity on all of these roads would return to their current, baseline state.

The minor increase in traffic on Goodfellow AFB from the closure of Perimeter Road would not significantly impact on-base transportation resources. S Chadbourne Road and Old Eola Road are in good condition and have the capacity to accommodate the minor increase in traffic that would result from the transportation of construction materials and workers, supplies, unaccompanied children, and/or disposals resulting from the Proposed Action. HHS employee shift changes would not occur during the peak hours for the Jacobson Gate or S Chadbourne Road, the largest number of trips per day would only occur for approximately four months, and Old Eola Road would be repaired to its original condition after

HHS departure and site decommissioning. Because of this, impacts resulting from the transportation of HHS employees would not significantly affect off-base transportation resources. Any impacts to transportation resources would only occur for up to 180 days. Overall, both the Air Force and HHS portions of the Proposed Action would result in short-term, less than significant impacts to on- and off-base transportation at Goodfellow AFB and on the surrounding roads. There would be no long-term impacts.

4.3.9.1.1 Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no change in the baseline transportation conditions at or around Goodfellow AFB.

4.3.10 Socioeconomic Resources

Socioeconomic impacts would be considered significant if the Proposed Action resulted in a substantial shift in population trends or notably affected employment, earnings, or community resources within the ROI.

4.3.10.1 Alternative 1: Proposed Action

HHS would be providing or sourcing all required materials and supplies, including temporary facilities. HHS representative would be present on-site and would provide all care, supervision, meals, clothing, medical services, transportation, and other daily needs. Therefore, the Proposed Action is not expected to result in any changes to employment within the ROI. However, there would likely be a temporary beneficial impact to the local economy if the HHS sourced a percentage of supplies from businesses in Tom Green County.

Minor construction would be necessary to stand up the temporary facilities, including portable toilets, tends, or other temporary structures. The local economy would likely experience minor, short term beneficial impact if local employees were utilized.

Approximately 7,500 HHS personnel would be staying in hotels for approximately six months. Based on data presented in **Section 3.3.10**, there are approximately 6,019 vacant hotel rooms within a ninety mile radius of Goodfellow AFB. There would sufficient hotel capacity to accommodate all HHS personnel if two of more HHS personnel were to stay in each room. Further, HHS would need to contact hotels and make arrangements for extended stays. These lodging expenses would generate revenue for the local economy. In addition, HHS personnel would create demand for goods, services, and incidentals within the local economy during their approximate 6 month stay, which would result in a minor to moderate beneficial economic impact.

It is anticipated that HHS would establish an on-site clinic to accommodate the routine medical needs of the children in their care. However, in the case of emergency, Goodfellow AFB and the City of San Angelo have ample medical, fire, and police services to address any emergency situations. It is anticipated that the HHS-established clinic would meet the majority of medical needs for the children, so the potential for emergencies to arise would not impact the socioeconomic conditions in the ROI. It is not anticipated that the children would be attending schools on- or off-base in the ROI while in the care of the HHS personnel at Goodfellow AFB, so the Proposed Action would have no impact on educational facilities in the ROI.

4.3.10.2 Alternative 2: No Action Alternative

Under the No Action Alternative, socioeconomic conditions in the ROI would not change from the baseline conditions.

4.3.11 Environmental Justice

In order to determine whether there would be a disproportionate impact to Environmental Justice in the ROI, a Community of Comparison (COC) is established to determine if the percentage of low income and minority individuals living the ROI is comparatively higher than the surrounding region.

4.3.11.1 Alternative 1: Proposed Action

Tom Green County is the COC for Environmental Justice, and data for the state of Texas is provided for context. If the amount of minority or low income individuals living in the ROI is lower than in the COC, no disproportionate impacts would result from the Proposed Action.

Table 4-3. Percent Minority and Low Income in the ROI as Compared to the COC

Geographic Area	Total Population	Percent Minority	Disproportionate	Percent Low Income	Disproportionate Impact
Tom Green County	118, 019	46.8%	---	13.4%	--
Texas	28,304,596	58%	--	15.6%	--
Affected Census Tracts					
Census Tract 8.01	4,274	41.8%	No	6.4%	No

Source: USCB 2018a; USCB 2018b

Notes: The low income and minority data are estimates from the 2012-2016 American Community Survey and derived from the US Census Quick Facts and American FactFinder tool.

The percentage of minorities living in the ROI is 41.8 percent, which is lower than Tom Green County at 46.8 percent and the state of Texas at 58 percent. The percentage of low income individuals located in the ROI is 6.4 percent, which is less than half of the amount residing in Tom Green County and the state of Texas, respectively 13.4 percent and 15.6 percent. Therefore, any impacts that may potentially occur to off-base communities, such as a temporary increase in noise and traffic flow during the construction period, and operation over the subsequent 6 months, would not constitute a disproportionate impact to low income or minority communities.

Protection of Children: Since there are no schools, day cares, or assisted living facilities located close enough to the southern installation boundary to be impacted as a result of the Proposed Action, implementation of the Proposed Action would not result in increased exposure of children living on or near the installation to environmental health risks or safety risks such as those associated with the generation, use, or storage of hazardous materials. Standard construction site safety precautions (e.g., fencing and other security measures) would be taken when erecting the temporary structures to reduce potential risks to minimal levels and any potential impacts to children would be negligible and short-term.

All of the individuals who would be relocated to Goodfellow AFB are children under the age of 18. Since children are inherently more vulnerable to environmental health and safety risks, per EO 13454 it is appropriate to analyze any potential environmental health or safety risks that would result to these 7,500 children from implementation of the Proposed Action. HHS personnel are tasked with providing all care and necessities for the children, including ensuring that no exposure to environmental health or safety risks would occur during their time at Goodfellow AFB. \

HHS personnel would be responsible for ensuring the children are protected from any environmental health or safety risks. This includes providing water that is clean and free from contaminants, providing food, shelter, and other accommodations to ensure the protection of the children from environmental health and safety risks. Since the children are migrants, the majority speak non-English languages. Services to ensure their protection from environmental health and safety risks would likely include language translation services, social services, and potentially educational services by trained HHS professionals.

Overall, the Proposed Action is not expected to result in significant environmental justice impacts within the ROI. The Proposed Action may result in a beneficial impact to the 7,500 unaccompanied children that would be relocated to Goodfellow AFB because according to the DHS PEA, unaccompanied children

could be detained in custody by DHS for unacceptable lengths of time in overcrowded and potentially unsafe and unhealthy conditions which do not meet the standards acceptable to the U.S (DHS 2014).

4.3.11.2 Alternative 2: No Action Alternative

There would be no impacts to Environmental Justice in the ROI as a result of the No Action Alternative because conditions in the ROI that would potential impact human populations would not change.

4.3.12 Safety and Occupational Health

The potential to increase or decrease safety risks to the public, the military, and property were analyzed in this section. Safety measures that could be implemented to minimize potential safety risks are also addressed.

4.3.12.1 Alternative 1: Proposed Action

All construction activities would be conducted in accordance with federal OSHA regulations and are conducted in a manner that does not increase risk to workers or the public. OSHA regulations (29 CFR §1910 and 29 CFR §1926) address the health and safety of people at work and cover potential exposure to a wide range of chemical, physical, and biological hazards, and ergonomic stressors. The regulations are designed to control these hazards by eliminating exposure to the hazards via administrative or engineering controls, substitution, use of personal protective equipment, and availability of Safety Data Sheets. During construction activities associated with the Proposed Action, additional measures would be implemented in order to protect both the construction workers and military personnel.

ERP site LF-02 would be secured by fencing to protect bystanders from this area. It is recommended that all stored materials are removed from facilities 3070 and 3160 and the buildings remain locked to prevent entry from unauthorized bystanders. The ESQD does not overlap with the Proposed Action area and therefore, would have no impact.

The safety and security of the residents in the temporary facilities would be a high priority. Transport time to a hospital is approximately 12 to 17 minutes by ambulance. Serious injuries or illness would be treated at one of the four emergency rooms closest to Goodfellow AFB. Fire and police protection would be provided HHS. Adverse impacts resulting from the safety and security issues associated with this Proposed Action would be anticipated to be minor.

Planning for transportation of unaccompanied children in the event of a significant weather event or natural disaster was noted under the list of activities that would be necessary to enhance capacity in a timely manner and to avoid elevated costs outlined in **Section 1.2**. This provision was originally intended and discussed for HHS sites in South Florida due to the potential of an in-bound hurricane. Although hurricanes are generally not a threat at Goodfellow AFB, the area may be subject to other severe weather such as micro-bursts, hail, and tornadoes. HHS will work with Goodfellow AFB and the local community to develop an appropriate shelter in place or evacuation plan.

Given the employment of the safety measures discussed above, no significant effects to safety would be anticipated as a result of the Proposed Action.

4.3.12.2 Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no potential to increase or decrease safety risks to the public, the military, and property.

4.4 OTHER NEPA CONSIDERATIONS

4.4.1 Unavoidable Adverse Effects

This EA identifies any unavoidable adverse impacts that would be required to implement the Proposed Action and the significance of the potential impacts to resources and issues. Title 40 of CFR §1508.27 specifies that a determination of significance requires consideration of context and intensity. The construction and operation of temporary facilities for sheltering unaccompanied children would significantly impact the Proposed Action area at Goodfellow AFB. As described in the preceding resource-specific analyses, no unavoidable adverse impacts are expected from the Proposed Action.

4.4.2 Relationship of Short-Term Uses and Long-Term Productivity

The relationship between short-term uses and the enhancement of long-term productivity from implementation of the Proposed Action is evaluated from the standpoint of short-term effects and long-term effects.

The purpose of the Proposed Action is to establish a location and erect temporary, short-term facilities for sheltering approximately 7,500 unaccompanied children. The Proposed Action would be constructed by the Air Force but HHS would be responsible for all operations, thereby minimizing the potential for impacts to productivity

4.4.3 Irreversible and Irretrievable Commitments of Resources

This EA identifies any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action if implemented. An irreversible effect results from the use or destruction of resources (e.g. energy) that cannot be replaced within a reasonable time. An irretrievable effect results from loss of resources (e.g. endangered species) that cannot be restored as a result of the Proposed Action. The short-term irreversible commitments of resources that would occur include planning and engineering costs, building materials and supplies and their cost, use of energy resources during addition of communication equipment, and labor. No long-term irretrievable commitments of resources would result

CHAPTER 5: CUMULATIVE EFFECTS

This EA also considers the effects of cumulative impacts as required in 40 CFR §1508.7 and concurrent actions as required in 40 CFR §1508.25(1). A cumulative impact, as defined by the CEQ (40 CFR §1508.7) is the "…impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future action regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

A list of past, present, and reasonably foreseeable future actions at Goodfellow AFB and the surrounding area that could result in cumulative impacts with the implementation of this Proposed Action are shown in **Table 5-1**. In order to identify projects for consideration outside of Goodfellow AFB, the City of San Angelo's 2018-2023 Capital Improvement Plan was reviewed. There are numerous minor roadway and drainage repair projects proposed for the City of San Angelo over the next five (5) years (COSA 2018a). Since most potential impacts resulting from this Proposed Action would be limited to Goodfellow AFB and the immediate surrounding area used to access the installation, only those minor roadway and drainage projects that are proposed to occur on S Chadbourne Road, Old Eola Road, or FM 765 were included in the table below for detailed analysis. There would be no potential for cumulative impacts to other San Angelo roadways, as the Proposed Action would not impact these roads.

Table 5-1. Past, Present, and Reasonably Foreseeable Future Actions

Action #	Action	Proponent/ Location	Timeframe	Description
1	Dormitory Construction	Air Force / Goodfellow AFB	Present	Dormitory construction occurring off of Goodfellow AFB runway
2	Dining Hall Addition	Air Force / Goodfellow AFB	Future	Construction of addition to Goodfellow AFB Dining Hall
3	Mill and Overlay of Christoval Rd. from Paint Rock Rd. to S Chadbourne Rd.	City of San Angelo / Christoval Rd.	Future	Addition of road overlay to maintain the structural integrity of the street foundation
4	Mill and Overlay of S Chadbourne Rd. from Washington St. to Avenue L	City of San Angelo / S Chadbourne Rd.	Future	Addition of road overlay to maintain the structural integrity of the street foundation and rehabilitate or replace the existing water and sewer infrastructure
5	Fire Station #4 Reconstruction	City of San Angelo / S Chadbourne Rd. & Edgewood	Future	Construction of a new fire station to replace Fire Station #4 on Avenue L which is over 50 years old and does not have sufficient space

For this EA analysis, these other actions listed in the tables are addressed from a cumulative perspective and are analyzed in this section. Future actions would be evaluated under separate NEPA documentation, if required, by the appropriate federal agency. This analysis considers potential impacts from outside

projects based on the best available information for these proposals. Descriptions of potential cumulative impacts for each resource area analyzed within this EA are presented in the following sections.

5.1 NOISE

The Proposed Action analyzed within this EA would not result in significant impacts to noise levels and noise sensitive receptors at and around Goodfellow AFB during either the construction or operation of the temporary facilities. Construction activities from the other projects identified in **Table 5-1** would also impact noise levels and noise sensitive receptors in the area, which could result in cumulative impacts. However, the construction required for each of these projects would occur at different times and different locations both on- and off-base, and the use of standard construction BMPs would reduce the noise levels. Cumulative noise impacts resulting from this the Proposed Action in conjunction with other identified actions would be short-term and would not be significant.

5.2 LAND USE

The Proposed Action analyzed in this EA would result in temporary changes to the land use designation for the Proposed Action area on Goodfellow AFB. The Air Force projects included in **Table 5-1** would not change the land use designation for the areas in which construction is or would occur. Non-Air Force projects identified in **Table 5-1** would not affect land use on Goodfellow AFB, so there would be no cumulative impacts resulting from those actions. The combination of this the Proposed Action with potential impacts from other identified actions would not result in cumulative impacts to land use.

5.3 AIR QUALITY

No significant short-term or long-term impacts to regional air quality or GHGs would result from implementation of the Proposed Action. Construction activities from the other projects identified in **Table 5-1** would also impact regional air quality, which would result in cumulative impacts. However, the construction required for each of these projects would occur at different times and different locations, both on- and off-base. The use of standard construction BMPs would reduce any emissions resulting from construction activities. Due to the differing times and locations of construction, as well as the fact that Tom Green County is in attainment for all criteria pollutants, cumulative air quality impacts resulting from this the Proposed Action in conjunction with other identified actions would be short-term and would not be significant.

5.4 BIOLOGICAL RESOURCES

The Proposed Action analyzed in this EA would not result in significant impacts to vegetation, wildlife, or special status species. Construction activities from other Air Force projects identified in **Table 5-1** would not impact vegetation, wildlife, or special status species because the projects would take place in the developed area of the installation where these resources do not exist. Projects proposed outside of Goodfellow AFB would not impact vegetation, wildlife, or special status species on the installation either. Therefore, no cumulative impacts to biological resources would result from the implementation of the Proposed Action in conjunction with the other projects identified in **Table 5-1**.

5.5 CULTURAL RESOURCES

The Proposed Action analyzed within this EA would not impact archaeological resources, architectural resources, or traditional cultural properties at Goodfellow AFB because none exist within the Proposed Action area. Non-Air Force projects listed in **Table 5-1** would not take place on Goodfellow AFB and therefore would not have the potential to impact cultural resources on the installation. Potential impacts to cultural resources resulting from the other Air Force projects identified in **Table 5-1** has or will be analyzed prior to the start of construction. Therefore, no cumulative impacts to cultural resources would result from the implementation of the Proposed Action in conjunction with other projects identified.

5.6 EARTH RESOURCES

The Proposed Action analyzed within this EA would result in short- and long-term impacts to Earth Resources at Goodfellow AFB, but these impacts would not be significant. Construction activities associated with the other projects identified in **Table 5-1** would also result in short-term impacts to earth resources at and around Goodfellow AFB. Standard BMPs would be used during all construction to minimize potential impacts to earth resources. Due to the temporary nature of this the Proposed Action and the different times and locations proposed for each of these projects, cumulative impacts to earth resources would be short-term and would not be significant.

5.7 HAZARDOUS MATERIALS AND WASTE

The Proposed Action analyzed within this EA would not result in significant impacts due to hazardous materials or wastes and would not affect any ERP sites. None of the other projects identified in **Table 5-1** would be expected to require the use of or result in the disposal of hazardous materials or wastes. The other projects proposed for Goodfellow AFB would not take place within installation ERP sites. Therefore, there would be no cumulative impacts resulting from the implementation of the Proposed Action in conjunction with any of the other identified actions.

5.8 INFRASTRUCTURE AND UTILITIES

The Proposed Action analyzed within this EA would not significantly impact electricity, solid waste, water supply, sanitary wastewater or stormwater at Goodfellow AFB. Construction activities associated with the Air Force projects identified in **Table 5-1** would impact all of these infrastructure and utilities at Goodfellow AFB, but, as illustrated in this EA, all systems have the capacity to handle the anticipated increases and changes. Non-Air Force projects identified would not impact the infrastructure or utilities at Goodfellow AFB. No cumulative impacts to infrastructure and utilities would result from the implementation of the Proposed Action in addition to the other identified actions.

5.9 TRANSPORTATION

The Proposed Action analyzed within this EA would result in less than significant, short-term impacts to transportation at and around Goodfellow AFB. Construction activities associated with the other identified Air Force projects would increase traffic to Goodfellow AFB and the surrounding areas, but both the installation and regional roadway system has the capacity to accommodate these increases. Non-Air Force road projects would likely result in added congestion during the construction phase, but would ultimately improve the condition of the road and, therefore, its ability to accommodate the associated increases in traffic. Increases in vehicle traffic for all identified projects would be short-term. Therefore,

cumulative transportation impacts resulting from the Proposed Action in conjunction with other identified actions would be temporary in nature and would not be significant.

5.10 SOCIOECONOMIC RESOURCES

The Proposed Action analyzed within this EA would result in minor to moderate beneficial impacts to socioeconomic resources within the ROI. The need for construction supplies and workers to complete the other projects identified in **Table 5-1** would also result in minor, short-term, beneficial impacts to socioeconomic resources in the area. For all projects, these impacts would cease once construction and operational phases were complete. Therefore, there would be no long-term cumulative impacts to socioeconomic resources resulting from the Proposed Action in conjunction with other identified actions.

5.11 ENVIRONMENTAL JUSTICE

The Proposed Action analyzed within this EA would not disproportionally impact low income or minority populations, and would result in less than significant impacts to children living within the ROI. The other projects identified in **Table 5-1** would be temporary in nature, and would result in improvements to local roadways and Goodfellow AFB facilities. Therefore, no significant cumulative impacts to environmental justice would result from the Proposed Action in addition to the other identified actions.

5.12 SAFETY AND OCCUPATIONAL HEALTH

The Proposed Action analyzed within this EA would not result in significant impacts to safety and occupational health at Goodfellow AFB. All construction activities for the Proposed Action and the other actions identified in **Table 5-1** would follow the appropriate laws, regulations, and BMPs to ensure that safety and occupational health is maintained at all times. Since all actions are temporary in nature, any potential impacts to health and/or safety resulting from the other identified projects would no longer exist once construction is complete. Therefore, no cumulative impacts to safety and occupational health would be anticipated to result from this the Proposed Action in conjunction with the other actions identified in **Table 5-1**.

CHAPTER 6: LIST OF PREPARERS

Name / Company	Organization	Degree	Resource Area(s)	Years of Experience
Victoria Hernandez / AGEISS	AFCEC/CZN	BS, Bioenvironmental Sciences	• Biological Resources • Water Resources • Overall QA/QC	2
Grace Keesling / AGEISS	AFCEC/CZN	MS, Environmental Policy & Management BA, Geosciences	• Airspace Management • Land Use • Earth Resources • Infrastructure & Utilities • Transportation • Cumulative Impacts • Overall QA/QC	5
Helen Kellogg / AGEISS	AFCEC/CZN	BS, Geography, Urban and Regional Planning	• Socioeconomics • Environmental Justice	3
David Martin / BB&E	AFCEC/CZN	MS, Applied Geography BA, Anthropology	• Noise • Cultural Resources • Overall EA Review	20
Christopher Moore / AFCEC	AFCEC/CZN	MA / BA, Environmental Sociology	• Socioeconomics	15
Austin Naranjo / Solutio	AFCEC/CZN	MBA BS, Mechanical Engineering	• Air Quality	2
Patricia Reyes / AGEISS	AFCEC/CZN	MPA, Management BS, Biology	• Hazardous Materials/ Waste • Safety & Occupational Health • Solid Waste	20
Julianne Turko / AGEISS	AFCEC/CZN	MA, Geology BS, Geological Sciences	• Description of Proposed Action and Alternatives • Overall EA Review	33

CHAPTER 7: REFERENCES

AFIOH (Air Force Institute for Operational Health). 2004. Potable Water Vulnerability and Risk Assessment, Goodfellow AFB, Texas. 13 May 2004.

Berglund, B and Lindvall, T. 1995. Community Noise. Archives for the Center of Sensory Research Vol. 2, No. 1. Stockholm: Center for Sensory Research.

BLS (Bureau of Labor Statistics). 2018a. Southwest Information Office: San Angelo, Texas, accessed 28 June 2018. Available at: https://www.bls.gov/regions/southwest/tx_sanangelo_msa.htm.

BLS. 2018b. Southwest Information Office: Texas Economy at a Glance. Last accessed 28 June 2018. Available at: https://www.bls.gov/eag/eag.tx.htm.

COSA (City of San Angelo). 2017. Schools, accessed 28 June 2018. Available at: http://www.cosatx.us/residents/schools.

COSA. 2018a. City of San Angelo 2018-2023 Capital Improvement Plan, finalized 20 February 2018. Accessed 27 June 2018. Available at: http://www.cosatx.us/home/showdocument?id=25236.

COSA. 2018b. Community Profile, accessed 28 June 2018. Available at: http://www.cosatx.us/departments-services/economic-development/community-profile#Utilities.

COSA. 2018d. Water Reclamation, accessed 26 June 2018. Available at: http://www.cosatx.us/departments-services/water-reclamation.

DHS (Department of Homeland Security). 2014. Programmatic Environmental Assessment for Actions to Address an Increased Influx of Unaccompanied Alien Children and Family Units Across the Southwest Border of the United States.

Dominy, Michael. 2018. Personal communication with Michael Dominy, Goodfellow AFB. 29 Jun 2018.

ESPN (Entertainment and Sports Programming Network). 2018. MLB Attendance Report 2018, accessed 29 June 2018. Available at: http://www.espn.com/mlb/attendance.

Goodfellow AFB. 2007. Environmental Assessment for Military Housing Privatization at Goodfellow AFB, Texas. March 2007.

Goodfellow AFB. 2011. Environmental Assessment: Construct Bioenvironmental Engineer Facility.

Goodfellow AFB. 2012. General Plan Goodfellow Air Force Base, Texas.

Goodfellow AFB. 2014. Integrated Cultural Resources Management Plan Goodfellow Air Force Base, Texas.

Goodfellow AFB. 2016a. Installation Development Plan Goodfellow Air Force Base, Texas. February 2016.

Goodfellow AFB. 2016b. Integrated Natural Resources Management Plan Goodfellow Air Force Base, Texas. May 2016.

Goodfellow AFB. 2018a. Final Annual Inspection Report Goodfellow Air Force Base. May 2018.

Goodfellow AFB. 2018b. Performance-Based Remediation (PBR) at Texas Bases. May 2018.

Goodfellow AFB. 2018c. Units, accessed 28 June 2018. Available at: http://www.goodfellow.af.mil/.

Google Maps. 2018. Hospitals in San Angelo, TX, accessed 28 June 2018. Available at: https://www.google.com/maps/search/hospitals+near+san+angelo/@31.4658945,-100.50475,12z/data=!3m1!4b1.

Haynes, M. J., Rumble and D.J. Mee. 2006. Prediction of Crowd Noise. Proceedings of Acoustics. Christchurch, New Zealand.

JLL (Jones Lang LaSalle IP, Inc). 2018. Texas Hotel Performance Research 2017. Available at: https://travel.texas.gov/tti/media/PDFs/Texas-Tourism-Annual-Report-2017_Updated_1.pdf

Noret, Michael. 2018. Personal communication with Michael Noret, Goodfellow AFB. 30 Jun 2018.

NPS (National Park Service). 1997. How to Apply the National Register Criteria for Evaluation. National Register Bulletin 15. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

NRCS (Natural Resources Conservation Service). 2018a. US Department of Agriculture Farmland Policy Protection Act, accessed 28 June 2018. Available at: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/?cid=nrcs143-008275.

NRCS. 2018b. Web Soil Survey for Goodfellow AFB, accessed 28 June 2018. Available at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

Post Housing, Inc. 2018. Goodfellow AFB, TX-Schools, accessed 28 June 2018. Available at: https://www.goodfellowhousing.com/schools.

TCEQ (Texas Council on Environmental Quality). 2018. Municipal Solid Waste Topics., accessed 27 June 2018. Available at: https://www.tceq.texas.gov/permitting/waste_permits/msw_permits.

Texas Comptroller. 2016. Goodfellow AFB Estimated Contribution to the Texas Economy, last updated 3 May. Accessed 27 June 2018. Available at: https://comptroller.texas.gov/economy/economic-data/military/goodfellow.php#endnote3.

USAF (United States Air Force). 2003. Goodfellow Air Force Base: Cold War-Era Buildings and Structures Inventory and Assessment. Air Education and Training Command Cold War Context Series Reports of Investigations Number 9.

USCB (United States Census Bureau). 2010. Census Tract Reference Map, accessed 28 June 2018. Available at: https://www2.census.gov/geo/maps/dc10map/tract/st48_tx/c48451_tom_green/DC10CT_C48451_002.pdf.

USCB. 2018a. Quick Facts Tom Green County, Texas; San Angelo, Texas; Texas, accessed 28 June 2018. Available at:

https://www.census.gov/quickfacts/fact/table/tomgreencountytexas,tx,sanangelocitytexas/PST045217.

USCB. 2018b. United States Census Bureau American Fact Finder: Community Facts, last accessed 28 June 2018. Available at: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml.

USDOI (United States Department of Interior). 1995. Cultural Resource Assessment of Goodfellow AFB. Interagency Archaeological Services.

USEPA (US Environmental Protection Agency). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, Report Report EPA550/9-74-004. Office of Noise Abatement and Control, accessed 27 June 2018. Available at: http://www.nonoise.org/library/levels74/levels74.htm.

USEPA. 1977. Noise Emission Standards for Surface Transportation Equipment: Information in Support of the Proposed Regulation for Truck-Mounted Solid Waste Compactors. Office of Noise Abatement and Control.

USEPA. 1998. Biological Effects of Ionizing Radiation (BEIR) VI Report The Health Effects of Exposure to Indoor Radon. 1998.

USEPA. 2013. Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2011, EPA 430-R-13-001. April 2013.

USFWS (US Fish and Wildlife Service). 2013. Migratory Bird Treaty Act (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989). [Online]. Reviewed: Accessed: 26 June 2018. http://alaska.fws.gov/ambcc/ambcc/treaty_act.htm.

USGS (US Geological Survey). 2013. United States Geological Survey. 7.5 Minute Series (Topographic), San Angelo South, Texas Quadrangle, Texas, Revision 1.

Appendix A

Interagency / Intergovernmental Coordination, Consultations, and Public Notifications

Agency Notification
Recipients and Example Letter

The following stakeholders were notified of release of the Draft EA and invited to comment.

Federal Agencies	
U.S. House of Representatives Representative Mike Conaway	United States Senate Senator Ted Cruz
United States Senate Senator John Cornyn	U.S. Fish and Wildlife Service, Austin Field Office Adam Zerrenner, Field Supervisor
State Agencies	
Governor of Texas Governor Greg Abbott	Governor's Office of Budget, Planning and Policy Director, State Grants Team
Governor's Office of Budget, Planning and Policy Governor's Advisor - Transportation	Texas Military Preparedness Commission Keith Graf, Director
Office of Chief / Senior Land Commissioner	State Historic Preservation Office Cynthia Guillen, Section 106 Tracking Coordinator
Texas Historical Commission Bratten Thomason, Director	Texas Council on Environmental Quality Elizabeth McKeefer, CAPM
Texas Council on Environmental Quality Region 8 Christopher Mayben, Section Manager	Texas Parks and Wildlife Department Clayton Wolf, Director
Texas Council on Environmental Quality Chance Goodin, Section Manager	
Texas Parks and Wildlife Department Endangered Resources Branch	
Native American Tribes / Tribal Agencies	
Comanche Nation Martina Callahan, Tribal Historic Preservation Officer	Concho Valley Council of Governments Marcos Mata, Regional Services Director
Mescalero Apache Holly Houghten, Tribal Historic Preservation Officer	NAGPRA Tribal Preservation Officer
Apache Tribe of Oklahoma Seth Morgan, EPA Director	Apalachicola Band of Creek Indians
Lipan Apache Tribe of Texas Bernard F. Barcena Jr., Chairman	Pamaque Clan of Coahuila Y Tejas
Texas Band of Yaqui Indians	
Other Stakeholders	
City of San Angelo Mayor Brenda Gunter	San Angelo Chamber of Commerce Dan Koenig, President
San Angelo Chamber of Commerce Office of Military Affairs	San Angelo Chamber of Commerce Sandra Pomroy, Vice President of Chamber Operations
City of San Angelo Daniel Valenzuela, City Manager	City of San Angelo Tommy Hiebert, Councilman District 1
City of San Angelo Tommy Thompson, Councilman District 2	City of San Angelo Harry Thomas, Councilman District 3
City of San Angelo Lucy Gonzales, Councilwoman District 4	City of San Angelo Lane Carter, Councilman District 5
City of San Angelo Billie DeWitt, Councilwoman District 6	City of San Angelo Ricky Dickson, Director of Water Utilities
City of San Angelo Rebecca Guerra, Planning Manager	Tom Green County Stephen C. Floyd, County Judge
Tom Green County Ralph Hoelscher, Commissioner Precinct 1	Tom Green County Aubrey deCordova, Commissioner Precinct 2

Tom Green County Rick Bacon, Commissioner Precinct 3	Tom Green County Bill Ford, Commissioner Precinct 4
San Angelo Independent School District Safety Specialist	

DEPARTMENT OF THE AIR FORCE
17TH TRAINING WING (AETC)
GOODFELLOW AIR FORCE BASE TEXAS

3 July 2018

Michael J. Noret, P.E.
17 CES/CE2
460 East Kearney Boulevard
Goodfellow AFB Texas 76908

The Honorable Mike Conaway
US House of Representatives
2430 Rayburn House Office Building
Washington DC 20515

Dear Representative Conaway

The United States Air Force (Air Force) has prepared a Draft Environmental Assessment (EA) to evaluate potential environmental impacts associated with the proposed U.S. Department of Health and Human Services (HHS) Temporary Living Facilities for Unaccompanied Children at Goodfellow Air Force Base (AFB), Texas. The EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

As part of the Proposed Action, the Air Force would, as part of a humanitarian response, provide and prepare approximately 70 contiguous acres of land on which to erect temporary living quarters for up to 7,500 children who entered the United States without parents and workspace for approximately 2,500 HHS support staff for a period from July 31 – December 31, 2018. The proposed action would provide appropriate support facilities and security fencing to protect the unaccompanied children and separate the temporary facilities from other areas and functions at Goodfellow AFB and the neighboring community.

Copies of the Draft EA and unsigned FONSI are available at http://www.goodfellow.af.mil/. Please provide any comments or additional information concerning the Proposed Action within 7 calendar days of the date of the Notice of Availability to Ms. Erika Alanis Unger at 325-654-3456; erika.alanis_unger@us.af.mil. Comments received after this period will be accepted but may not be addressed in the Final EA. Thank you in advance for your assistance in this effort.

Sincerely,

MICHAEL J. NORET, P.E.
Deputy Base Civil Engineer

Attachments:
1. Map of Proposed Action Area

Agency Notification
Responses

Interagency Consultation
Recipients and Letters

The following agencies where consulted with in preparation of this EA and their input solicited.

Agencies
Texas Historical Commission Mark Wolfe, Executive Director
U.S. Fish and Wildlife Service, Austin Field Office Adam Zerrenner, Field Supervisor

DEPARTMENT OF THE AIR FORCE
17TH TRAINING WING (AETC)
GOODFELLOW AIR FORCE BASE TEXAS

3 July 2018

Michael J. Noret, P.E.
17 CES/CE2
460 East Kearney Boulevard
Goodfellow AFB Texas 76908-4122

Mr. Mark Wolfe, Executive Director
Texas Historical Commission
PO Box 12276
Austin TX 78711-2276

Dear Mr. Wolfe

The United States Air Force (Air Force) has prepared a Draft Environmental Assessment (EA) to evaluate potential environmental impacts associated with the proposed U.S. Department of Health and Human Services (HHS) Temporary Living Facilities for Unaccompanied Children at Goodfellow Air Force Base (AFB), Texas. The EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

As part of the Proposed Action, the Air Force would, as part of a humanitarian response, provide and prepare approximately 70 contiguous acres of land on which to erect temporary living quarters for up to 7,500 children who entered the United States without parents and workspace for approximately 2,500 HHS support staff for a period from July 31 – December 31, 2018. The proposed action would provide appropriate support facilities and security fencing to protect the unaccompanied children and separate the temporary facilities from other areas and functions at Goodfellow AFB and the neighboring community.

The Area of Potential Effect (APE) includes approximately 70 contiguous acres and encompasses the Proposed Action Area, including the proposed temporary facilities, existing buildings, and construction laydown area (Attachment 1).

In order to identify historic properties located within the APE, a comprehensive review of cultural resource literature, including the base's Integrated Cultural Resource Management Plan (ICRMP) was conducted. The U.S. Department of Interior (National Park Service) conducted a cultural resource assessment of the entire Goodfellow AFB installation on 30 January - 3 February 1995. No archeological resources were identified and it was recommended that no further archeological investigations were necessary. Two buildings are present in the Proposed Action area – buildings 3070 and 3160. Building 3160 is a cinder block shed. Neither building is determined NRHP-eligible by the Air Force. In 2013 the Texas Historical Commission concurred with the Air Force's determination that building 3070 is not eligible for the NRHP.

No effects to cultural resources that are listed on or eligible for inclusion in the NRHP would arise from the Proposed Action at Goodfellow AFB. During the course of construction, if any archaeological resources or human remains are identified, work would cease immediately and the Goodfellow AFB Cultural Resources Manager or their surrogate would be notified.

The Air Force therefore requests written concurrence with its 36 CFR 800.4(d)(1) finding of *No Historic Properties Affected* regarding the Proposed Action at Goodfellow AFB. We are aware that under normal circumstances, you have 30 days to review and object to our finding. However, because this undertaking implements a time-sensitive initiative, we have only a very short period of time to complete our environmental analysis and associated consultation. Therefore, we would appreciate your concurrence and any comments concerning the undertaking as soon as possible, specifically within 7 calendar days of receiving this letter. Responses can be sent to Ms. Erika Alanis Unger at 325-654-3456; erika.alanis_unger@us.af.mil; or Ms. Deborah Tharp at 210-652-7587; deborah.tharp.1@us.af.mil. Thank you for your assistance.

Sincerely,

Michael J. Noret, P.E.
Deputy Base Civil Engineer

Attachments:
1. Map of Proposed Action Area

Interagency Consultation
Responses

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
Phone: (512) 490-0057 Fax: (512) 490-0974
http://www.fws.gov/southwest/es/AustinTexas/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

In Reply Refer To: June 26, 2018
Consultation Code: 02ETAU00-2018-SLI-1117
Event Code: 02ETAU00-2018-E-02185
Project Name: Placing Unaccompanied Alien Children (UAC) and Family Units at Goodfellow Air Force Base (AFB), Texa

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that *may* occur within the county of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please note that new information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Also note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of federally listed as threatened

or endangered species and to determine whether projects may affect these species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

While a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal Agency must notify the Service in writing of any such designation. The Federal agency shall also independently review and evaluate the scope and content of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by a federally funded, permitted or authorized activity, the agency is required to consult with the Service pursuant to 50 CFR 402. The following definitions are provided to assist you in reaching a determination:

- *No effect* - the proposed action will not affect federally listed species or critical habitat. A "no effect" determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.
- *May affect, but is not likely to adversely affect* - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effect. The Federal agency or the designated non-Federal representative should consult with the Service to seek written concurrence that adverse effects are not likely. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.
- *Is likely to adversely affect* - adverse effects to listed species may occur as a direct or indirect result of the proposed action. For this determination, the effect of the action is neither discountable nor insignificant. If the overall effect of the proposed action is beneficial to the listed species but the action is also likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. The analysis should consider all interrelated and interdependent actions. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal section 7 consultation with our office.

Regardless of the determination, the Service recommends that the Federal agency maintain a complete record of the evaluation, including steps leading to the determination of effect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

Migratory Birds

For projects that may affect migratory birds, the Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of these species. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Migratory birds may nest in trees, brushy areas, or other areas of suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals, nests, or eggs. If project activities must be conducted during this time, we recommend surveying for nests prior to conducting work. If a nest is found, and if possible, the Service recommends a buffer of vegetation remain around the nest until the young have fledged or the nest is abandoned.

For additional information concerning the MBTA and recommendations to reduce impacts to migratory birds please contact the U.S. Fish and Wildlife Service Migratory Birds Office, 500 Gold Ave. SW, Albuquerque, NM 87102. A list of migratory birds may be viewed at https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php. Guidance for minimizing impacts to migratory birds for projects including communications towers can be found at: https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/communication-towers.php. Additionally, wind energy projects should follow the wind energy guidelines

https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/wind-energy.php) for minimizing impacts to migratory birds and bats.

Finally, please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/eagles.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
(512) 490-0057

Project Summary

Consultation Code: 02ETAU00-2018-SLI-1117

Event Code: 02ETAU00-2018-E-02185

Project Name: Placing Unaccompanied Alien Children (UAC) and Family Units at Goodfellow Air Force Base (AFB), Texa

Project Type: Guidance

Project Description: As part of the Proposed Action, the Air Force would provide the Department of Health and Human Services (HHS) sufficient land and facilities for the placement of living and sleeping quarters for approximately 10,000 UACs on an Air Force base. HHS identified the following activities would be necessary to enhance capacity in a timely manner and to avoid elevated costs:

- Clear and level land for the purpose of erecting semi-permanent structures to shelter UACs;
- Allow HHS to use Department of Defense (DoD)'s temporary facilities for mass sheltering;
- Erect temporary facilities; and
- Help transport UACs from one facility to another in the event of a significant weather event or natural disaster.

The Air Force, as requested by HHS, would provide the required land, temporary facilities and other support at Goodfellow AFB Texas. Approximately 75 contiguous acres of land of level and cleared land would be used. HHS representative will be present on-site and will provide all care, supervision, meals, clothing, medical services, transportation, and other daily needs. HHS has requested the first quantity of facilities be available by 31 July 2018 through 31 December 2018. The proposed action would provide sufficient support structures, and security fencing to separate the encampment from other areas and functions at Goodfellow AFB TX.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/31.426713073199508N100.40121108059338W

Counties: Tom Green, TX

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location is outside the critical habitat. This species only needs to be considered under the following conditions: • Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: • Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Clams

NAME	STATUS
Texas Fatmucket *Lampsilis bracteata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9041	Candidate
Texas Fawnsfoot *Truncilla macrodon* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8965	Candidate
Texas Pimpleback *Quadrula petrina* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8966	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Intergovernmental Consultation
Recipients and Example Letter

The Air Force invited the following Tribal government representatives to enter into consultations regarding the EA.

Tribal Governments
Comanche Nation Chairman Wallace Coffey
Mescalero Apache President Danny Breuninger, Sr.
Apache Tribe of Oklahoma Tribal Chairman Lyman Guy
Kiowa Indian Tribe of Oklahoma Chairman Amber Toppah
Kickapoo Traditional Tribe of Texas Chairman Juan Garza, Jr.
Pueblo of Ysleta Del Sur Governor Carlos Hisa
Tonkawa Tribe of Oklahoma Chair Don L. Patterson
Alabama-Coushatta Tribe of Texas Chairman Ronnie Thomas

DEPARTMENT OF THE AIR FORCE
17TH TRAINING WING (AETC)
GOODFELLOW AIR FORCE BASE TEXAS

3 July 2018

Col. Ricky L. Mills, Commander
17th Training Wing
351 Kearney Blvd
Goodfellow AFB Texas 76908

Chairman Wallace Coffey
Comanche Nation
PO Box 908
Lawton OK 73502

Dear Chairman Coffey

The United States Air Force (Air Force) has prepared a Draft Environmental Assessment (EA) to evaluate potential environmental impacts associated with the proposed U.S. Department of Health and Human Services (HHS) Temporary Living Facilities for Unaccompanied Children at Goodfellow Air Force Base (AFB), Texas. The EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

As part of the Proposed Action, the Air Force would, as part of a humanitarian response, provide and prepare approximately 70 contiguous acres of land on which to erect temporary living quarters for up to 7,500 children who entered the United States without parents and workspace for approximately 2,500 HHS support staff for a period from July 31 – December 31, 2018. The Proposed Action would provide appropriate support facilities and security fencing to protect the unaccompanied children and separate the temporary facilities from other areas and functions at Goodfellow AFB and the neighboring community (Attachment 1). The Air Force requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis.

Additionally, in accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the Air Force requests government-to-government consultation regarding the identification of any traditional cultural properties, including those of religious significance to the tribe, that may be present.

Because this Proposed Action would implement a time-sensitive initiative, we have only a short period of time to complete our environmental analysis and associated consultation. Therefore, we would appreciate receiving as soon as possible any information you would like considered in that analysis. If you have any comments or questions about this undertaking, please contact Ms. Erika Alanis Unger at 325-654-3456; erika.alanis_unger@us.af.mil; or Ms.

Deborah Tharp at 210-652-7587; deborah.tharp.1@us.af.mil. Written comments can be mailed to Ms. Unger, 17 CES/CEIE, 460 Kearney Blvd, Goodfellow AFB, 76908. Thank you in advance for your assistance in this effort.

Sincerely,

RICKY L. MILLS Colonel, USAF
Commander

Attachments:
1. Map of Proposed Action Area

Intergovernmental Consultation
Responses

Public Notification

Appendix B

Air Quality Assessment

ACAM Summary Report

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

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: GOODFELLOW AFB
County(s): Tom Green
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Unaccompanied Alien Children (UAC) Housing on Goodfellow, AFB

c. Project Number/s (if applicable):

d. Projected Action Start Date: 7 / 2018

e. Action Description:

GIVEN:
7,500 UAC
7,500 DHHS Personnel
75 acres of land will be disturbed
The Action will require to connect to the base electrical, sewer, and water
Entire area will be fenced in

ASSUMPTIONS:
Assumptions based on articles visual observation of available photos on the internet of similar facility in Tornillo, Texas (observed on 26 June 2018):
Construction:
Site Grading = 75 Acres = 3,607,000 sq ft of land that will be disturbed, only bulldozers and graders will be used
Excavating/Trenching = 3,500 linear ft X 3 (electrical, sewer, water) X 3 ft wide = 31,500 sq ft
Building Construction: Area of building = (7,500 UAC / 20 UAC per tent) X 40 ft X 20 ft = 30,000 sq ft
Height of building: Because the structures will be tents, 0.25 ft was assumed.
Excavating/Trenching (Fencing) = 1.75 miles = 9,240 ft

Emergency Generators:
25 Emergency Generators rated at 135 mechanical horsepower to provide electricity
Assuming existing utilities will not have the excess capacity to handle the camp.

Personnel:
7,500 DHHS Personnel total that will carpool or bus. Carpool with an average of 3 persons per vehcile is worst case scenario for air quality.
7,500/3 = 2,500
Support Vehicles Post Construction:
Assumed 20 trucks per week for supplies.

f. Point of Contact:

Name: Austin Naranjo
Title: Environmental Engineer
Organization: AFCEC/CZTQ
Email: austin.naranjo.ctr@us.af.mil
Phone Number: (210)749-7000

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

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

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.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2018

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	14.082	100	No
NOx	47.174	100	No
CO	69.228	100	No
SOx	8.710	100	No
PM 10	16.978	100	No
PM 2.5	9.389	100	No
Pb	0.000	100	No
NH3	0.222	100	No
CO2e	8646.5		

2019

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.448	100	No
NOx	1.354	100	No
CO	16.077	100	No
SOx	0.009	100	No
PM 10	0.029	100	No
PM 2.5	0.025	100	No
Pb	0.000	100	No
NH3	0.087	100	No
CO2e	1362.1		

2020 - (Steady State)

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

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	100	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

7-5-18

Austin Naranjo, Environmental Engineer — DATE

ACAM Detail Report

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: GOODFELLOW AFB
County(s): Tom Green
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Unaccompanied Alien Children (UAC) Housing on Goodfellow, AFB

- Project Number/s (if applicable):

- Projected Action Start Date: 7 / 2018

- Action Purpose and Need:

- Action Description:

GIVEN:
7,500 UAC
7,500 DHHS Personnel
75 acres of land will be disturbed
The Action will require to connect to the base electrical, sewer, and water
Entire area will be fenced in

ASSUMPTIONS:
Assumptions based on articles visual observation of available photos on the internet of similar facility in Tornillo, Texas (observed on 26 June 2018):
Construction:
Site Grading = 75 Acres = 3,607,000 sq ft of land that will be disturbed, only bulldozers and graders will be used
Excavating/Trenching = 3,500 linear ft X 3 (electrical, sewer, water) X 3 ft wide = 31,500 sq ft
Building Construction: Area of building = (7,500 UAC / 20 UAC per tent) X 40 ft X 20 ft = 30,000 sq ft
Height of building: Because the structures will be tents, 0.25 ft was assumed.
Excavating/Trenching (Fencing) = 1.75 miles = 9,240 ft

Emergency Generators:
25 Emergency Generators rated at 135 mechanical horsepower to provide electricity
Assuming existing utilities will not have the excess capacity to handle the camp.

Personnel:
7,500 DHHS Personnel total that will carpool or bus. Carpool with an average of 3 persons per vehcile is worst case scenario for air quality.
7,500/3 = 2,500
Support Vehicles Post Construction:
Assumed 20 trucks per week for supplies.

- Point of Contact

Name: Austin Naranjo
Title: Environmental Engineer
Organization: AFCEC/CZTQ
Email: austin.naranjo.ctr@us.af.mil
Phone Number: (210)749-7000

- Activity List:

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Activity Type		Activity Title
2.	Construction / Demolition	Construction associated with UAC Housing
3.	Personnel	Additional Personnel to Manange UAC
4.	Construction / Demolition	Fence Construction
5.	Emergency Generator	Generators For Tents
6.	Construction / Demolition	Support Vehicles Post Construction

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Tom Green
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Construction associated with UAC Housing

- Activity Description:

- Activity Start Date
Start Month: 7
Start Month: 2018

- Activity End Date
Indefinite: False
End Month: 7
End Month: 2018

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.131734
SO_x	0.002706
NO_x	1.151952
CO	0.560893
PM 10	7.620044

Pollutant	Total Emissions (TONs)
PM 2.5	0.045308
Pb	0.000000
NH_3	0.003858
CO_2e	288.0

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2018

- Phase Duration
Number of Month: 0
Number of Days: 5

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 3267000

Amount of Material to be Hauled On-Site (yd^3): 120000
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	2	12
Other Construction Equipment Composite	2	12
Rollers Composite	1	12
Rubber Tired Dozers Composite	2	12
Tractors/Loaders/Backhoes Composite	2	12

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1049	0.0014	0.7217	0.5812	0.0354	0.0354	0.0094	132.97
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0633	0.0012	0.4477	0.3542	0.0181	0.0181	0.0057	122.66
Rollers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0682	0.0007	0.4484	0.3884	0.0290	0.0290	0.0061	67.198
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.2343	0.0024	1.8193	0.8818	0.0737	0.0737	0.0211	239.61
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0512	0.0007	0.3330	0.3646	0.0189	0.0189	0.0046	66.912

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.326	000.002	000.272	003.566	000.007	000.006		000.025	00344.527
LDGT	000.427	000.003	000.478	005.323	000.009	000.008		000.026	00446.488
HDGV	000.893	000.005	001.267	017.824	000.021	000.018		000.045	00788.510

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDDV	000.106	000.003	000.151	002.750	000.004	000.004		000.008	00338.771
LDDT	000.304	000.004	000.493	005.424	000.007	000.007		000.008	00493.509
HDDV	000.526	000.014	005.452	001.918	000.219	000.201		000.028	01538.403
MC	002.760	000.003	000.701	012.933	000.026	000.023		000.053	00395.615

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2018

- Phase Duration
Number of Month: 0
Number of Days: 5

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 31500
Amount of Material to be Hauled On-Site (yd^3): 1750
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1049	0.0014	0.7217	0.5812	0.0354	0.0354	0.0094	132.97
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0633	0.0012	0.4477	0.3542	0.0181	0.0181	0.0057	122.66
Rollers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0682	0.0007	0.4484	0.3884	0.0290	0.0290	0.0061	67.198
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.2343	0.0024	1.8193	0.8818	0.0737	0.0737	0.0211	239.61
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0512	0.0007	0.3330	0.3646	0.0189	0.0189	0.0046	66.912

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.326	000.002	000.272	003.566	000.007	000.006		000.025	00344.527
LDGT	000.427	000.003	000.478	005.323	000.009	000.008		000.026	00446.488
HDGV	000.893	000.005	001.267	017.824	000.021	000.018		000.045	00788.510
LDDV	000.106	000.003	000.151	002.750	000.004	000.004		000.008	00338.771
LDDT	000.304	000.004	000.493	005.424	000.007	000.007		000.008	00493.509
HDDV	000.526	000.014	005.452	001.918	000.219	000.201		000.028	01538.403
MC	002.760	000.003	000.701	012.933	000.026	000.023		000.053	00395.615

2.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)

HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Building Construction Phase

2.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2018

- Phase Duration
Number of Month: 0
Number of Days: 14

2.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 30000
Height of Building (ft): 0.25
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	7
Forklifts Composite	2	7
Generator Sets Composite	1	8
Off-Highway Trucks Composite	1	12
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1012	0.0013	0.7908	0.4059	0.0318	0.0318	0.0091	128.85
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0371	0.0006	0.2186	0.2173	0.0101	0.0101	0.0033	54.479
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0477	0.0006	0.3758	0.2785	0.0191	0.0191	0.0043	61.100
Off-Highway Trucks Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1613	0.0026	1.0525	0.5634	0.0359	0.0359	0.0145	260.43
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0512	0.0007	0.3330	0.3646	0.0189	0.0189	0.0046	66.912

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.326	000.002	000.272	003.566	000.007	000.006		000.025	00344.527
LDGT	000.427	000.003	000.478	005.323	000.009	000.008		000.026	00446.488
HDGV	000.893	000.005	001.267	017.824	000.021	000.018		000.045	00788.510
LDDV	000.106	000.003	000.151	002.750	000.004	000.004		000.008	00338.771

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDDT	000.304	000.004	000.493	005.424	000.007	000.007		000.008	00493.509
HDDV	000.526	000.014	005.452	001.918	000.219	000.201		000.028	01538.403
MC	002.760	000.003	000.701	012.933	000.026	000.023		000.053	00395.615

2.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

3. Personnel

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Tom Green
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Additional Personnel to Manange UAC

- Activity Description:
NOTE: 2,500 people entered to adjust for carpooling/bussing

- Activity Start Date
Start Month: 8
Start Year: 2018

- Activity End Date
Indefinite: No
End Month: 2
End Year: 2019

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	5.068904
SO_x	0.030743
NO_x	4.738320
CO	56.268455
PM 10	0.100270

Pollutant	Total Emissions (TONs)
PM 2.5	0.088147
Pb	0.000000
NH_3	0.305452
CO_2e	4767.4

3.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 0
Civilian Personnel: 2500
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0

Reserve Personnel: 0

- Default Settings Used: No

- Average Personnel Round Trip Commute (mile): 20

- Personnel Work Schedule

Active Duty Personnel:	5 Days Per Week
Civilian Personnel:	7 Days Per Week
Support Contractor Personnel:	5 Days Per Week
Air National Guard (ANG) Personnel:	4 Days Per Week
Reserve Personnel:	4 Days Per Month

3.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

3.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.326	000.002	000.272	003.566	000.007	000.006		000.025	00344.527
LDGT	000.427	000.003	000.478	005.323	000.009	000.008		000.026	00446.488
HDGV	000.893	000.005	001.267	017.824	000.021	000.018		000.045	00788.510
LDDV	000.106	000.003	000.151	002.750	000.004	000.004		000.008	00338.771
LDDT	000.304	000.004	000.493	005.424	000.007	000.007		000.008	00493.509
HDDV	000.526	000.014	005.452	001.918	000.219	000.201		000.028	01538.403
MC	002.760	000.003	000.701	012.933	000.026	000.023		000.053	00395.615

3.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{Total}: Total Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Personnel On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

4. Construction / Demolition

4.1 General Information & Timeline Assumptions

- Activity Location
County: Tom Green
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Fence Construction

- Activity Description:

- Activity Start Date
Start Month: 7
Start Month: 2018

- Activity End Date
Indefinite: False
End Month: 7
End Month: 2018

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.013707
SO_x	0.000248
NO_x	0.089703
CO	0.076501
PM 10	0.008345

Pollutant	Total Emissions (TONs)
PM 2.5	0.003219
Pb	0.000000
NH_3	0.000034
CO_2e	24.5

4.1 Trenching/Excavating Phase

4.1.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 3
Start Year: 2018

- Phase Duration
Number of Month: 0
Number of Days: 14

4.1.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 930

Amount of Material to be Hauled On-Site (yd^3): 15
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Bore/Drill Rigs Composite	1	8
Cement and Mortar Mixers Composite	1	8
Off-Highway Trucks Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

4.1.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.534	000.007	000.582	004.759	000.010	000.009		000.034	00373.409
LDGT	000.732	000.010	001.014	007.911	000.011	000.010		000.034	00500.251
HDGV	001.399	000.016	002.839	025.321	000.028	000.025		000.045	00783.622
LDDV	000.225	000.003	000.317	003.873	000.007	000.006		000.008	00382.861
LDDT	000.538	000.005	000.853	007.913	000.009	000.008		000.008	00597.264
HDDV	000.763	000.014	008.044	002.712	000.368	000.339		000.028	01587.983
MC	002.858	000.008	000.719	014.264	000.027	000.024		000.050	00395.027

4.1.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

5. Emergency Generator

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

County: Tom Green
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Generators For Tents

- Activity Description:

- Activity Start Date
Start Month: 8
Start Year: 2018

- Activity End Date
Indefinite: No
End Month: 10
End Year: 2018

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	10.310794
SO_x	8.684719
NO_x	42.499688
CO	28.382400
PM 10	9.276019

Pollutant	Total Emissions (TONs)
PM 2.5	9.276019
Pb	0.000000
NH_3	0.000000
CO_2e	4915.2

5.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 25

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 135
Average Operating Hours Per Year (hours): 8760

5.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

5.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

6. Construction / Demolition

6.1 General Information & Timeline Assumptions

- Activity Location
County: Tom Green; Tom Green
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Support Vehicles Post Construction

- Activity Description:

- Activity Start Date
Start Month: 8
Start Month: 2018

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2018

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.004639
SO_x	0.000123
NO_x	0.048087
CO	0.016917
PM 10	0.001932

Pollutant	Total Emissions (TONs)
PM 2.5	0.001773
Pb	0.000000
NH_3	0.000247
CO_2e	13.6

6.1 Site Grading Phase

6.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 8
Start Quarter: 1
Start Year: 2018

- Phase Duration
Number of Month: 5
Number of Days: 0

6.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 0
Amount of Material to be Hauled On-Site (yd^3): 8000
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: No
Average Day(s) worked per week: 7

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20

Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.326	000.002	000.272	003.566	000.007	000.006		000.025	00344.527
LDGT	000.427	000.003	000.478	005.323	000.009	000.008		000.026	00446.488
HDGV	000.893	000.005	001.267	017.824	000.021	000.018		000.045	00788.510
LDDV	000.106	000.003	000.151	002.750	000.004	000.004		000.008	00338.771
LDDT	000.304	000.004	000.493	005.424	000.007	000.007		000.008	00493.509
HDDV	000.526	000.014	005.452	001.918	000.219	000.201		000.028	01538.403
MC	002.760	000.003	000.701	012.933	000.026	000.023		000.053	00395.615

6.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons