Draft

Environmental Assessment

Addressing Installation Development at

Cannon Air Force Base, New Mexico

Contract # W91278-15-D-0029, Task Order 012

Prepared for:

Department of the Air Force

March

2018

Cover Sheet

Draft Environmental Assessment Addressing Installation Development at Cannon AFB, New Mexico

Responsible Agencies: United States Air Force, Air Force Special Operations Command, 27th Special Operations Wing.

Affected Location: Cannon Air Force Base (AFB), New Mexico.

Proposed Action: Installation Development for Cannon AFB.

Report Designation: Draft Environmental Assessment (EA).

Abstract: Cannon AFB and the Air Force Special Operations Command identified priorities for installation improvement projects to be able to maintain the installation's mission, and propose to implement them over the next 5 to 10 years (2018 to 2028). The intent of the ongoing process of installation development at Cannon AFB is to provide installation improvements necessary to support the mission of the 27th Special Operations Wing and tenant units. The 13 construction projects, 2 infrastructure projects, and 39 demolition projects considered in this EA were identified as priorities for installation improvement in the 2016 Cannon AFB Installation Development Plan and various future funding documents. These plans identify requirements for the improvement of the physical infrastructure and functionality of Cannon AFB, including current and future mission and facility requirements, improvement constraints and opportunities, and land use relationships. Currently proposed projects include facility construction, demolition, and infrastructure improvements.

This EA analyzes the potential for environmental impacts associated with the Proposed Action and alternatives, including the No Action Alternative, and assists in determining whether a Finding of No Significant Impact/Finding of No Practicable Alternative can be prepared or an Environmental Impact Statement is required. While it has the potential to impact floodplains, the Proposed Action includes all practical measures to minimize harm to floodplains and other sensitive environments. Resource areas considered in the impact analysis for this EA are noise, air quality, land use, infrastructure and transportation, geological resources, water resources, biological resources, cultural resources, hazardous materials and waste management, health and safety, and socioeconomic resources.

Written comments and inquiries regarding this document should be directed to: Ms. Lindsay Dunahee, 27th Special Operations Civil Engineer Squadron, 506 North Commando Way, Cannon AFB, New Mexico 88103.

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Your comments on this document are requested. Letters or other written or oral comments provided may be published in the EA. As required by law, comments will be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to comment on this document or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and the specific comments will be disclosed. Personal home addresses and telephone numbers will not be published in the EA.

Draft

ENVIRONMENTAL ASSESSMENT

ADDRESSING INSTALLATION DEVELOPMENT

AT

CANNON AIR FORCE BASE, NEW MEXICO

Prepared for:

Department of the Air Force

MARCH 2018

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Acronyms and Abbreviations

µg/m^3	micrograms per cubic meter
ACAM	Air Conformity Applicability Model
ACM	asbestos-containing material
AEI	Air Emissions Inventory
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AFQC	Air Force Qualifications Course
AFSOC	Air Force Special Operations Command
AFY	acre-feet per year
AICUZ	Air Installation Compatible Use Zone
ALS	Airman Leadership School
AOC	Area of Concern
APE	area of potential effect
APZ	Accident Potential Zone
AQCR	air quality control region
AST	aboveground storage tank
AT/FP	antiterrorism/force protection
bgs	below ground surface
BMP	best management practice
CAA	Clean Air Act
CATM	Combat Arms Training & Maintenance
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CWA	Clean Water Act
CZ	clear zone
dB	decibel(s)
dBA	A-weighted sound level in decibel(s)
DNL	day-night sound level
DoD	Department of Defense
DS2	ultra low-sulfur diesel
EA	Environmental Assessment
ECC	Emergency Communications Center
EISA	Energy Independence and Security Act
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
ESQD	Explosive Safety Quantity-Distance
E85	Ethanol Gasoline
FONPA	Finding of no Practical Alternative
FONSI	Finding of No Significant Impact
ft^2	square foot/feet
FY	fiscal year
gpd	gallons per day
gpm	gallons per minute
GHG	greenhouse gas
HAP	hazardous air pollutant
HQ	Headquarters
ICRMP	Integrated Cultural Resources Management Plan
IDP	Installation Development Plan
IRP	Installation Restoration Program
Jet A	Jet A Aviation fuel
kg/m^3	kilograms per cubic meter
LBP	lead-based paint
MADF	Mobility Aerial Delivery Facility
MBTA	Migratory Bird Treaty Act
mcf	thousand cubic feet
mgd	million gallons per day
mg/m^3	milligram per cubic meter

MMRP	Military Munitions Response Program
MSL	mean sea level
mtpy	metric tons per year
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMAC	New Mexico Administrative Code
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NMWCA	New Mexico Wildlife Conservation Act
NOA	Notice of Availability
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSR	New Source Review
OSHA	Occupational Safety and Health Administration
OWS	oil/water separator
O_3	ozone
Pb	lead
PCB	polychlorinated biphenyl
PDC	Professional Development Center
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
PM_{10}	particulate matter equal to or less than 10 microns in diameter
PNM	Public Service Company of New Mexico
POL	petroleum, oil, and lubricant
ppb	parts per billion
PPBI	Pecos-Permian Basin Intrastate
PPE	personal protective equipment
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
ROI	region of influence
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SOCES	Special Operations Civil Engineer Squadron
SOF	Special Operations Forces
SOW	Special Operations Wing
SO_2	sulfur dioxide
SPR	Spill Prevention and Response
SWMU	Solid Waste Management Unit
tpy	tons per year
UFC	Unified Facilities Criteria
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound
WWTP	wastewater treatment plant
WTP	water treatment plant

1. Purpose of and Need for the Proposed Action

1.1 Introduction

Cannon Air Force Base (AFB) hosts the 27th Special Operations Wing (SOW), which is one of four U.S. Air Force (USAF) active duty SOWs within Air Force Special Operations Command (AFSOC). The Wing's core missions include close air support, agile combat support, information operations, precision strike, forward presence and engagement, intelligence, surveillance and reconnaissance operations, and specialized mobility. The 27 SOW is a pivotal component of AFSOC's ability to provide and conduct special operations missions ranging from precision application of firepower to infiltration, exfiltration, resupply, and refueling of special operations forces.

Cannon AFB and AFSOC identified priorities for installation improvement projects to be able to maintain the installation's mission, and propose to implement them over the next 5 to 10 years (2018–2028). This Installation Development Environmental Assessment (EA) has been prepared to evaluate the potential environmental impacts of these proposed projects in compliance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [USC] § 4331 et seq.), regulations of the President's Council on Environmental Quality (CEQ) that implement NEPA procedures (40 Code of Federal Regulations [CFR] §§ 1500–1508), and USAF regulations for implementing NEPA (32 CFR § 989), which were enacted in Air Force Instruction (AFI) 32-7061, *The Environmental Impact Analysis Process*.

The intent of the ongoing process of installation development at Cannon AFB is to provide installation improvements necessary to support the mission of 27 SOW and tenant units. The 13 construction projects, 2 infrastructure projects, and 39 demolition projects considered in this EA were identified as priorities for installation improvement in the 2016 Cannon AFB Installation Development Plan (IDP) and various future funding documents. These plans identify requirements for the improvement of the physical infrastructure and functionality of Cannon AFB, including current and future mission and facility requirements, improvement constraints and opportunities, and land use relationships.

Cannon AFB is in eastern New Mexico near the Texas panhandle, approximately 8 miles west of Clovis, New Mexico, and occupies 4,397 acres of land (see **Figure 1-1**). It was established during World War II and has hosted a variety of missions and aircraft types throughout its history. In 2007, Cannon AFB became home to the 27 SOW, which operates CV-22 Osprey, C-130, MQ-9 Reaper, and other aircraft.

With the production of this EA, 27 SOW and Headquarters (HQ) AFSOC intend to streamline NEPA compliance and facilitate the installation development process by evaluating in one integrated document the potential impacts on the natural and human environment from the projects proposed for execution at Cannon AFB.

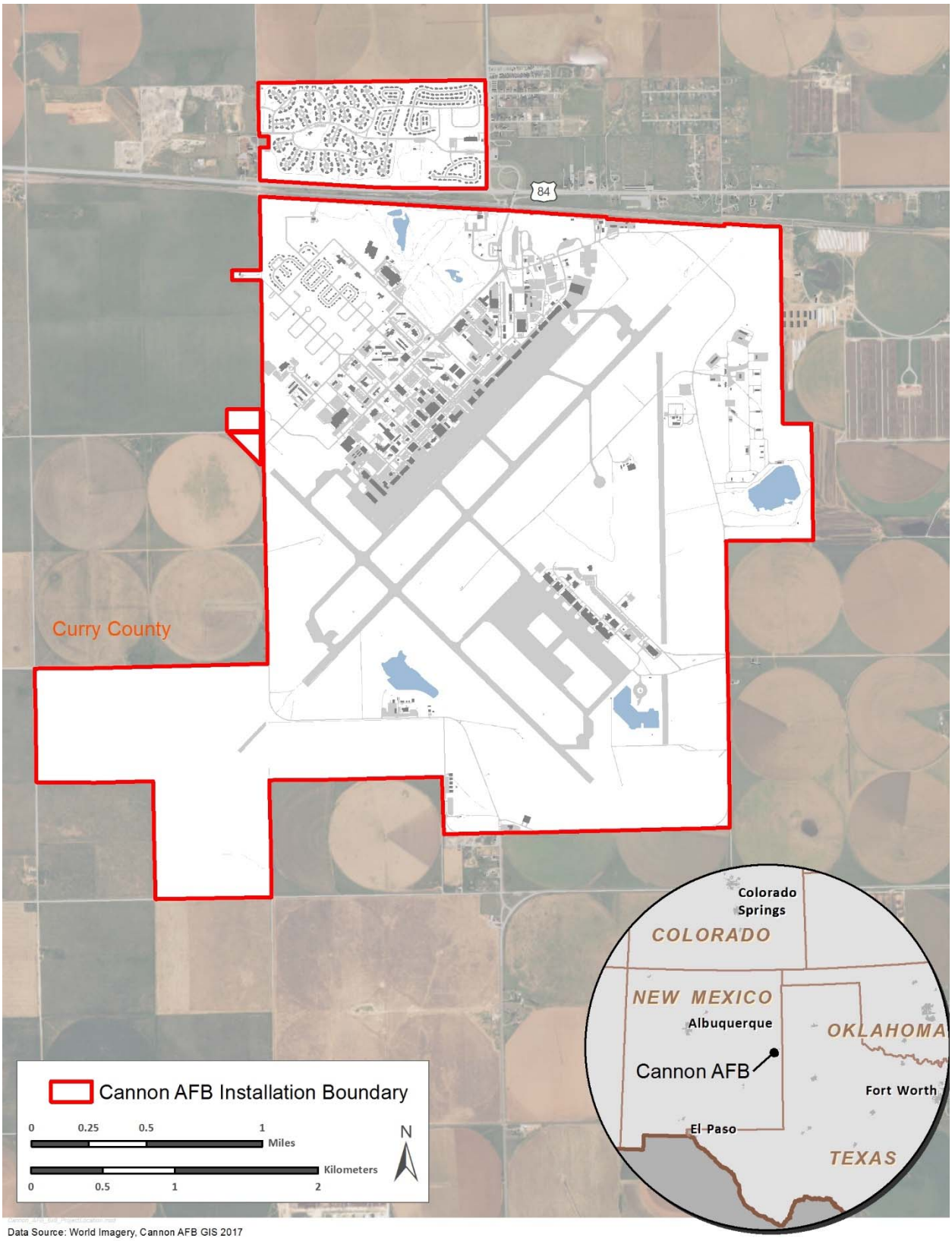

Figure 1-1. Location of Cannon AFB and Surrounding Area

The information presented in this EA serves as the basis for deciding whether the Proposed Action would result in a significant impact on the natural and human environment, requiring the preparation of an environmental impact statement, or whether no significant impacts would occur, in which case a Finding of No Significant Impact (FONSI) would be appropriate. If the execution of any of the proposed actions would involve "construction" in a wetland as defined in Executive Order (EO) 11990, *Protection of Wetlands*, or "action" in a floodplain under EO 11988, *Floodplain Management*, a Finding of No Practicable Alternative (FONPA) would be prepared in conjunction with the FONSI.

1.2 Purpose of Installation Development

The purpose of the Proposed Action is to support AFSOC mission requirements by improving the facilities, infrastructure, and utilities for current and future use through the installation development process. The collective analysis of all appropriate projects in a single EA fulfills the following functions:

- Coordinate land use planning and infrastructure development.
- Proactively address potential roadblocks to project execution.
- Reduce installation, reviewing agency, and major command workloads.
- Document an understanding of the potential environmental consequences associated with the continuing installation development process.
- Evaluate potential cumulative environmental impacts.
- Maintain a baseline for future analysis.
- Support strategic decision making.
- Encourage agency coordination.
- Streamline NEPA review to eliminate project segmentation.
- Meet USAF's Environmental Impact Analysis Process goals.

The installation development process is designed to support AFSOC mission requirements by completing selected construction and improvements projects that address deficiencies throughout the installation. These projects would include construction of new facilities and new infrastructure, repair of existing facilities, and demolition of redundant facilities. If current deficiencies are not addressed, mission effectiveness would deteriorate as mission and regulatory demands outpace installation capabilities.

1.3 Need for Installation Development

The AFSOC mission at Cannon AFB continues to grow and evolve, as do demands on aging facilities and infrastructure. Improvements and updates are needed to keep pace as warfare grows ever more technologically advanced and specialized. This involves meeting the following requirements:

- Meet applicable Department of Defense (DoD) installation master planning criteria, consistent with Unified Facilities Criteria (UFC) 2-100-01, *Installation Master Planning*.
- Align with the 2011 Air Force Civil Engineering Strategic Plan.
- Meet current USAF requirements for functional space, consistent with Air Force Manual 32-1084, *Facility Requirements* (April 20, 2012).
- Meet applicable DoD antiterrorism/force protection (AT/FP) criteria, consistent with UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*, and the Air Force Installation Force Protection Guide.
- Reduce consumption of fuel, energy, water, and other resources; maximize the use of existing facilities; and reduce the footprint of unnecessary or redundant facilities and infrastructure in accordance with EO 13693, *Planning for Federal Sustainability in the Next Decade,* the Energy Policy Act of 2005, and the USAF's 20/20 by 2020 initiative.
- Provide reliable utilities and an efficient transportation system to support Cannon AFB, consistent with Air Force Manual 32-1084.
- Support and enhance the morale and welfare of personnel assigned to the installation, their families, and civilian staff, consistent with DoD Instruction 1015.10, *Military Morale, Welfare, and Recreation Programs* (July 6, 2009).
- Conform to the *AFSOC Facility Excellence Guide* and the *Cannon AFB Architectural Compatibility Guide*, which helps to ensure a consistent and coherent architectural character throughout Cannon AFB.

1.4 Purpose of and Need for Individual Proposed Projects

The intent of Cannon AFB and AFSOC is to streamline NEPA compliance and facilitate the installation development process by evaluating the potential impacts on the human environment of the projects proposed for execution at Cannon AFB in one integrated document. Each of the 49 projects included in the Proposed Action has a specific purpose and need, which is presented in **Table 1-1**. General project locations are identified in **Figure 1-2**. The figure also shows the boundaries for the general development districts of the installation that are identified in the IDP: Airfield, Community, North Ramp, Residential, Southeast Development, and Southwest Development Districts. Site-specific details for each of these projects are discussed in **Section 2**.

1.5 Interagency/Intergovernmental Coordination and Consultations

1.5.1 Interagency Coordination and Consultations

Scoping is an early and open process for developing the breadth of issues to be addressed in the EA and for identifying significant concerns related to a proposed action. Per the requirements of EO 12372, *Intergovernmental Review of Federal Programs*, as amended by EO 12416 with the same title, federal agencies are required to provide opportunities for consultation with officials of state and local governments that could be affected by a federal proposal.

Table 1-1. Purpose and Need for Each Proposed Project

Project ID	Project Name	Fiscal Year	Square Footage	Project Purpose	Project Need
Construction Projects					
C1	Dangerous Cargo Pad and Combat Arms Training & Maintenance (CATM) Facility	2018+	760,000	Provide new permanent dangerous cargo pad and move CATM and associated safety fan buffer arc currently within proposed pad site to new location.	Permanent dangerous cargo pad would allow transfer of munitions and other hazardous cargo to occur in a location that would not restrict airfield runway access. New CATM would allow for broader range of training activities supporting the Cannon AFB mission based on new Rifle/Carbine Air Force Qualifications Course (AFQC) requirements.
C2	Professional Development Center	2021	71,000	Consolidate educational and recreational facilities used by Cannon AFB personnel.	Cannon AFB's recent population growth necessitates additional space for education and training requirements. Current education facilities are aging and undersized.
C3	Satellite Fire Station	2022	40,000	Provide secondary fire station and emergency communications center in installation's Southeast Development District.	Personnel, aircraft, and facilities are at greater risk for injury or fatality because of the existing fire station in the North Ramp District being unable to meet required response times in the Southeast Development District.
C4	Satellite Fitness Center	2020	18,000	Provide additional recreational resource for installation personnel in Southeast Development District to provide.	Existing fitness center in North Ramp District is over 30 years old, can only serve half the installation population, and experiences facility crowding and limited parking during peak use, which limits the ability for airmen to meet fitness requirements.
C5	Mobility Aerial Delivery Facility (MADF)	2018+	111,000	Provide warehousing function, associated infrastructure, and parachute drying tower for distributing and receiving materiel from aircraft.	Current facility used for this function is in the North Ramp District and needs to be located near the hangars in the Southeast Development District. It is also inconsistent with airfield clear zone criteria. No other facility exists that can provide the necessary support for this mission.
C6	Deployment Processing Center	2021	35,000	Provide processing center for personnel and cargo departing for and returning from deployment.	Deployment processing of personnel and cargo currently must occur at different locations, resulting in inefficiencies.

Project ID	Project Name	Fiscal Year	Square Footage	Project Purpose	Project Need
Construction Projects (continued)					
C7	Lodging Facility	2025+	25,000	Provide additional on-installation lodging for visiting personnel and their families.	The current on-installation lodging is inadequate for meeting the expected volume of visiting personnel to the installation.
C8	Transportation Complex	2026	51,000	Consolidate transportation administrative and operational functions.	Current vehicle operations and maintenance facilities are outdated and require replacement. The colocation of transportation facilities would also increase maintenance efficiency.
C9	Wing HQ/Law Center	2026+	26,500	Consolidate Wing HQ and law center facility.	The existing Wing HQ has deteriorated over time and the exterior requires major repair. The existing law center no longer meets space/operational requirements.
C10	Special Operations Forces (SOF) Squadron Operations Facility	2019+	26,000	Provide squadron operations facility for administration, planning areas, and aircraft equipment storage.	No facilities currently exist to house CV-22 squadron operations because all current squadron operations facilities are occupied by other squadrons. Current operations at multiple temporary facilities are less cohesive and less efficient.
C11	SOF Hangar	2022+	49,500	Provide aircraft maintenance hangar, aircraft maintenance unit facilities, and associated parking for remotely piloted aircraft.	Aircraft hangar space is limited and a doubling of aircraft at the installation is expected. An additional hangar would meet the capacity requirements for the incoming aircraft.
C12	SOF Simulator Facility	2027+	13,000	Provide motion-based aircraft simulator facility.	A new mission training facility of adequate size is required to support new real-world mission rehearsal and crew upgrade training requirements. No existing facilities are available to support these requirements.
C13	Refueler Maintenance Facility	2025+	4,250	Provide enough space for refueler vehicles to be serviced in support of the aircraft flying mission.	The current facility is over 50 years old and would not be able to support future mission requirements. A new facility within the existing refueler parking area near the airfield is required to meet response times to the airfield.

Project ID	Project Name	Fiscal Year	Square Footage	Project Purpose	Project Need
Infrastructure Improvement Projects					
I1	Reconstruct Main Gate	2020+	5,000; 11.3-acre footprint	Provide new entry control facilities with adequate security and safety standards that comply with AT/FP criteria.	The current vehicle inspection facility, identification checkpoint, and visitor control center do not meet AT/FP criteria. In addition, there are not enough traffic lanes at the Main Gate of the installation to accommodate current peak and future projected traffic levels.
I2	Water Tower Replacement	2019+	1.4-acre footprint; 600,000-gallon capacity	Replace three existing water towers that provide flow and water pressure for the installation's potable and firefighting water supply.	The current water tower system is over 65 years old and upgrading the system would eliminate the need for additional towers, booster pumps, and increased maintenance.
Demolition Projects					
D1 to D39	Various	2018+	414,448	Remove outdated and unnecessary facilities throughout the installation.	Several facilities throughout the installation no longer meet mission requirements, are no longer in use, or do not meet AT/FP criteria. These facilities need to be demolished to reduce infrastructure management costs by diverting resources away from excess, obsolete, or underused facilities.

The process also provides USAF the opportunity to cooperate with and consider state and local views in implementing the federal proposal. **Appendix A** contains the list of agencies consulted during this analysis and copies of correspondence.

1.5.2 Government to Government Consultations

EO 13175, *Consultation and Coordination with Indian Tribal Governments*, directs federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. Consistent with that EO, DoD Instruction 4710.02, *Interactions with Federally-Recognized Tribes*, and AFI 90-2002, *Air Force Interaction with Federally-Recognized Tribes*, federally recognized tribes that are historically affiliated with the Cannon AFB geographic region will be invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation or the interagency coordination process, and it requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of other consultations. The Cannon AFB point-of-contact for Native American tribes is the Installation Commander. **Appendix A** lists the Native American tribal governments that are being coordinated or consulted with regarding these actions.

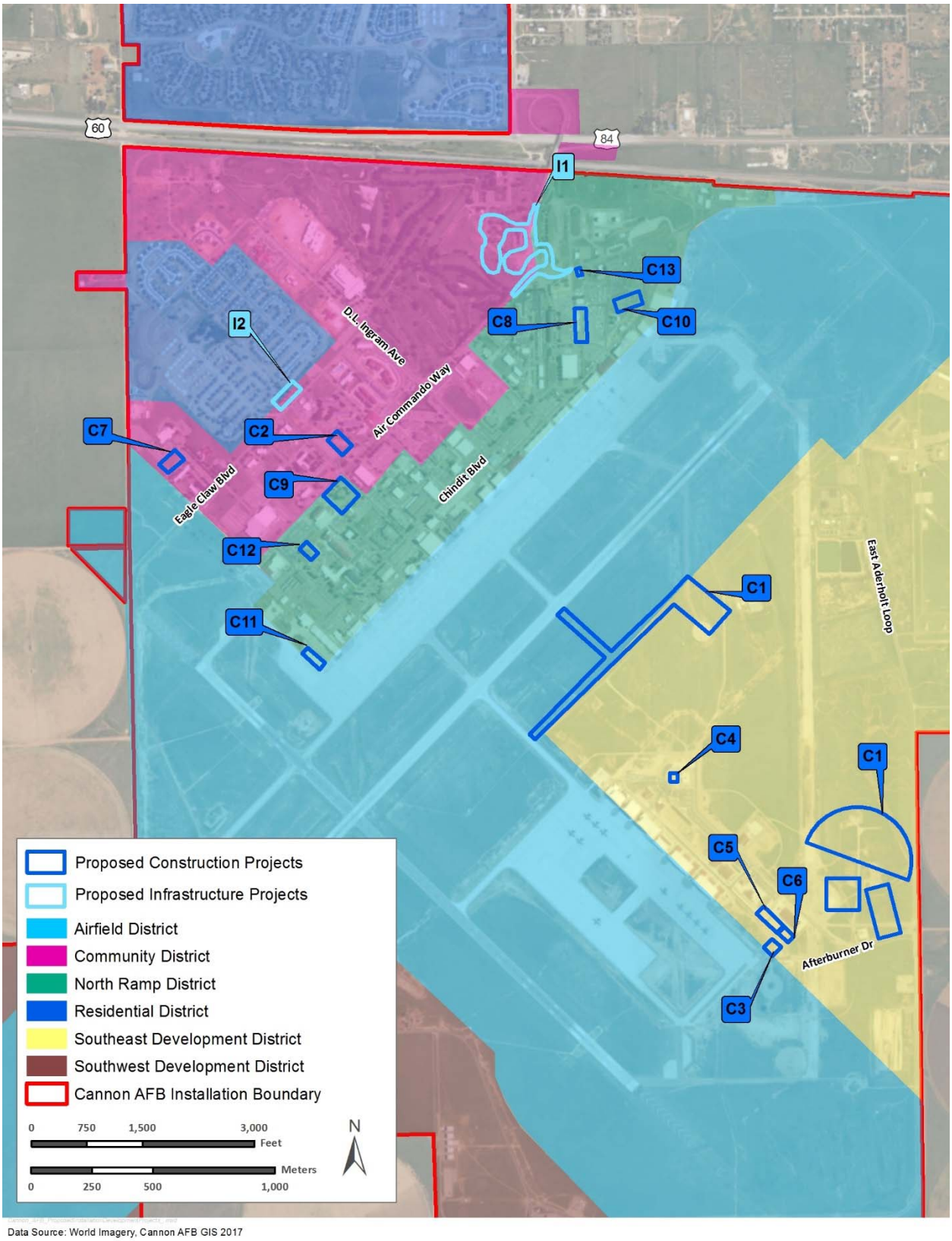

Figure 1-2. Proposed Installation Development Projects on Cannon AFB

1.5.3 Other Agency Consultations

Per the requirements of Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations (36 CFR § 800), Section 7 of the Endangered Species Act (ESA) and implementing regulations, and the Migratory Bird Treaty Act (MBTA), findings of effect and requests for concurrence where appropriate have been transmitted to the New Mexico State Historic Preservation Officer (SHPO) and the U.S. Fish and Wildlife Service (USFWS). Records of correspondence with these agencies to date are included in **Appendix A**.

1.6 Public and Agency Review of the EA

Through the public involvement process for the EA, USAF will notify relevant federal, state, and local agencies and the public of the Proposed Action and request input on environmental concerns they might have regarding the Proposed Action. The public involvement process provides Cannon AFB with the opportunity to consider and address state and local views in its decision regarding implementing this Federal proposal.

Because the Proposed Action area coincides with floodplains, it would be subject to the requirements and objectives of EO 11988. USAF published an early notice that the Proposed Action would occur in floodplains in the newspaper of record (Eastern New Mexico News) on June 28, 2017 (see **Appendix A** for the notice). The notice identifies state and federal regulatory agencies with special expertise to be contacted and solicit public comment on the Proposed Action and any practicable alternatives. The comment period for public and agency input on the early notice ended 30 days after publication, and no comments have been received to date.

A Notice of Availability (NOA) of the Draft EA and FONSI/FONPA will be published in the *Eastern New Mexico News* announcing the availability of the EA for review. The NOA will invite the public to review and comment on the Draft EA. An electronic version of the Draft EA and FONSI/FONPA will also be made available on the Cannon AFB website at *www.cannon.af.mil* and will also be made available for review at the Clovis-Carver Public Library in Clovis, New Mexico. Paper and electronic copies of the Draft EA and FONSI/FONPA will be sent to various agencies identified in **Appendix A** and interested parties that have requested a copy. The NOA and public and agency comments received will be included in **Appendix A** of the Final EA.

1.7 Decision to be Made

This EA evaluates whether the Proposed Action would result in significant impacts on the human environment. If significant impacts are identified, Cannon AFB would undertake mitigation to reduce impacts to below the level of significance, undertake the preparation of an environmental impact statement assessing the Proposed Action, or abandon the Proposed Action.

This EA is a planning and decision-making tool that will guide Cannon AFB in implementing the Proposed Action in a manner consistent with mission requirements and USAF standards for environmental stewardship including those identified in 32 CFR § 989 and AFI 32-7061.

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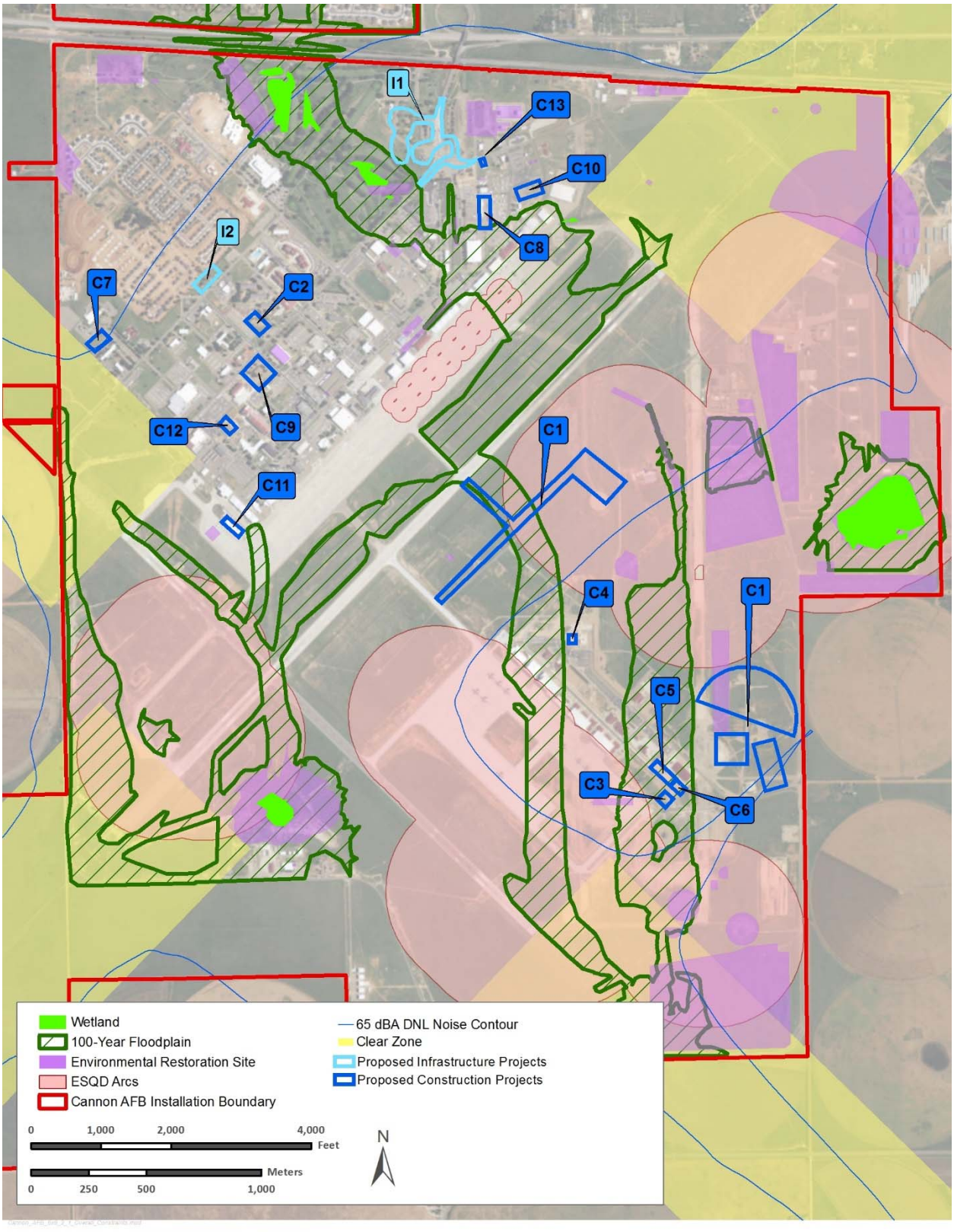
2. Description of the Proposed Action and Alternatives

2.1 Proposed Action

This EA evaluates the potential environmental impacts that may arise from implementation of 49 projects identified in the 2016 Cannon AFB IDP, various future funding documents, and approved installation development priorities for the next 5 to 10 years (2018 to 2028). This document treats each project as a discrete action, and considers each project and its alternatives separately. These projects include facility construction, demolition, renovation and replacement, and utility improvements.

Multiple land use, regulatory, and mission-related constraints within the boundaries of Cannon AFB influence and possibly limit future development projects at the installation. The potential constraints on Cannon AFB are discussed in the following bulleted paragraphs. The electronic mapping data from Cannon AFB's geographical information systems database (also called the GeoBase system) was used to quantify the major installation constraints to development, supplemented with other sources of information. Some constraint areas overlap each other and the Cannon AFB installation boundary; therefore, the acreages listed in the bulleted paragraphs do not equal the total acreage of the installation. These constraints have been considered while siting the projects identified under the Proposed Action (**Figure 2-1** shows these constraints and the project locations):

- ***Airfield Clearances*** (1,632 acres). A large portion of the installation is within airfield clear zones (CZs) (648 acres) and accident potential zones (APZs) (240 acres). Primary airfield surfaces occupy approximately 744 acres on Cannon AFB. Development is prohibited within the CZs and development within APZs must adhere to limitations in UFC 3-260-01, *Airfield and Heliport Planning and Design*.
- ***Noise Impacts*** (3,775 acres within the 65 A-weighted sound level in decibels [dBA] day-night sound level [DNL] contour). At Cannon AFB, the noise environment is primarily influenced by aircraft operations. Noise from these operations typically occurs beneath main approach and departure corridors and in areas immediately adjacent to runways, parking ramps, and aircraft staging areas. As aircraft take off and gain altitude, their contribution to the noise environment drops to levels indistinguishable from the background. The USAF's Air Installation Compatible Use Zone (AICUZ) Program (AFI 32-7063) promotes compatible development on and around air installations. Noise-based land use involves noise zones produced by computer simulation of average flight activity. The following land uses are considered incompatible within the various DNL contours:
    - **65 dBA DNL contour** – Residential
    - **70 and 75 dBA DNL contour** – Residential; Public and Quasi-Public Service; and Public Assembly



Data Sources: World Imagery, Cannon AFB GIS 2017, CAFB 2005

Figure 2-1. Constraints on Installation Development at Cannon AFB

  - **80 and 85 dBA DNL contour** – Residential; Transportation, Communications, and Utilities; Trade, Business, and Offices; Shopping Districts; Public and Quasi-Public Service; Recreational; and Public Assembly.

- ***Explosive Safety Quantity-Distance (ESQD) Arcs*** (1,131 acres). ESQD arcs are established to ensure that minimum safety distance is present within areas where explosions could occur so that incompatible development is avoided within the ESQD arcs. Primary roads that cross ESQD arcs at Cannon AFB are currently a major concern. East Aderholt Loop has become a primary transportation route for the installation, and it passes directly through the northeast ESQD for a munitions storage area. This ESQD also currently extends beyond the installation fence line into privately-owned land. The ESQD arcs at Cannon AFB should be avoided for all future development not related to explosives storage or maintenance. Redevelopment/new development initiatives should strive to minimize the waivers required for mission support.
- ***Environmental Restoration Program (ERP) Sites*** (299 acres). The installation underwent a Resource Conservation and Recovery Act Facility Assessment (RFA) in 1987, and numerous potentially contaminated areas were identified during subsequent investigations. Cannon AFB has total of 179 Solid Waste Management Units (SWMU) and Areas of Concern (AOCs). Of these, nine require corrective action. In addition, seven landfills at Cannon AFB are closed and undergo yearly inspections and maintenance as required. Historical contaminants at Cannon AFB are primarily petroleum constituents, while minor contamination by pesticides, polychlorinated biphenyls (PCBs), and heavy metals has been identified at some sites (CAFB 2016a, Kottkamp 2018).
- ***Wetlands*** (21.3 acres). Wetlands on Cannon AFB are primarily associated with playa wetland communities in basins that have been impacted at varying degrees by past agricultural and USAF activities. Fringe wetlands occur below ordinary high water marks on gradually sloping areas along the shoreline of the North Playa basin along East Aderholt Loop because of natural and anthropogenic water level drawdowns during the growing season. The South Playa basin to the southwest of the flightline (airfield runway area) was excavated to handle additional stormwater runoff from growth of the Southeast Development District. Drainage from the surrounding uplands supports a wetland plant community when the area is temporarily flooded. No jurisdictional waters of the United States are located on Cannon AFB (CAFB 2016a).
- ***100-Year Floodplain*** (822 acres). A 2009 master drainage study of the surface water flow across Cannon AFB identified potential flooding areas and conceptual solutions to address flooding problems around the installation. Significant flow of surface drainage from the north of Cannon AFB across the cantonment area and flightline toward the southeast occurs during heavy rain events. These floodplains should be avoided for future development unless actions are mitigated to divert water away from the site of development.
- ***Anti-Terrorism/Force Protection Setback Requirements.*** AT/FP is a required site design consideration for all new development and redevelopment on military

installations, per UFC 4-010-01. Building setbacks from roadways and parking areas are defined according to the facility construction material and personnel occupancy. Existing AT/FP concerns at Cannon AFB include non-compliant access control points, close proximity of Liberator Avenue to primary gathering facilities, and proximity of "grandfathered" facilities to roadways and parking areas, requiring temporary barriers during elevated threat conditions.

- ***Soils.*** The permeability of soils at Cannon AFB ranges from moderate (in loamy soils) to high (in sandy soils). These soils are highly susceptible to erosion from persistent winds common in the region. The semi-arid climate contributes to the development of thin topsoil with low organic content underlain at relatively shallow depths by a leached clay-carbonate hardpan or caliche. Heavy rain events, particularly summer thunderstorms, can cause erosion on unstable embankments and denuded soils. A proper soil or geotechnical analysis should be taken on every site considered for future projects so that the necessary site development precautions can be made during the planning stage.
- ***Threatened and Endangered Species.*** The ESA (Public Law 93-205) requires protection be afforded to federally listed threatened or endangered animals, plants, and their habitats. USAF, where practical, provides the same level of protection to state-listed species. The interior least tern is the only federally and state-listed endangered species at Cannon AFB. Two state-listed threatened species occur at Cannon AFB, the Arctic peregrine falcon and the American peregrine falcon. Both of these bird species are a species of concern at the federal level. The yellow-billed cuckoo, Cassin's sparrow, ferruginous hawk, lark bunting, long-billed curlew, northern harrier, prairie falcon, burrowing owl, and black-tailed prairie dog are also federal species of concern occurring at the installation. However, all of these species have only been observed in a transitory state; no federally or state-listed species permanently reside at the installation. Protected species are not major development constraints at Cannon AFB. Based on habitat requirements for the species listed, the golf course lakes and the North Playa basin provide the most important potential habitat as identified in the installation's Integrated Natural Resources Management Plan, and should be avoided for future development planning purposes if possible (CAFB 2016a).

Installation constraints are an important parameter in the siting of projects and the development of reasonable alternatives for all projects proposed at Cannon AFB. As a general practice, Cannon AFB seeks to avoid, wherever possible, any disturbance to sensitive or constrained areas. The effort to avoid these areas limits the number of feasible alternatives for projects due to the densely constructed nature of the installation around the expanse of existing constrained areas on Cannon AFB. However, avoiding or restricting future development within the constrained acreage might not be practical and could limit the installation's ability to accomplish its missions successfully. When these resources cannot be avoided and actions could result greater than moderate environmental impacts, the selected projects would be removed from the IDEA, separate and additional NEPA documentation would occur, and consultation with appropriate regulatory agencies would be completed. All construction or other activities that would occur within areas associated with the previously described constraints would comply

with the requirements of various Federal, state, and local policies and regulations that govern such resources, and the appropriate best management practices (BMPs) and environmental protection measures would be instituted.

2.2 Selection Standards for Project Alternatives

The scope and location of each project and, where applicable, their alternatives have undergone extensive review by AFSOC personnel, local government agencies, and supporting installation and USAF staff specialists.

Potential alternatives to projects at Cannon AFB were each evaluated against four universal selection standards. Some projects included project-specific selection standards applicable solely to that single project; project-specific selection standards are introduced in **Section 2.3**, where applicable.

Selection Standard 1: The alternative(s) must meet the purpose of the Proposed Action to remedy deficiencies in the infrastructure of Cannon AFB. The alternative(s) must also address the need to provide and maintain infrastructure that is adequate to support the installation's mission and applicable USAF, state, and federal requirements. Alternatives must also satisfy the purpose of and need for each individual project (see **Section 1.4**).

Selection Standard 2: The alternative(s) must make as much use as possible of existing land and facilities, avoid creating or maintaining redundant space or infrastructure, avoid or minimize operational inefficiencies, and represent the most cost-effective and sustainable alternative.

Selection Standard 3: The alternative(s) must be consistent with all Cannon AFB internal planning documents and zoning requirements, applicable installation architectural compatibility guides, and relevant legal and regulatory requirements, and must accommodate applicable, known man-made and natural development constraints (e.g., ERP sites and floodplains—the relevant constraints vary depending on the project).

Selection Standard 4: The alternative(s) must maintain or improve the quality of life enjoyed by personnel and dependents at Cannon AFB.

2.3 Proposed Action and Alternatives

The NEPA process is intended to support flexible, informed decision-making based on an understanding of environmental consequences. The analysis provided by this EA and feedback from the public and other agencies will inform decisions made about whether, when and how to execute the Proposed Action.

Action Alternatives. NEPA and CEQ regulations mandate the consideration of reasonable alternatives to the Proposed Action. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense rather than simply desirable from the standpoint of the applicant. To be considered reasonable, an alternative must meet the purpose of and need for the action, be feasible and able to be implemented, and be suitable for consideration by decision makers.

No Action Alternative. CEQ regulations require consideration of the No Action Alternative for all proposed actions. The No Action Alternative is carried forward for further analysis, consistent with 32 CFR § 989, to provide a baseline against which the impacts of the action alternative can be assessed. The No Action Alternative would be "no change" from current practices, or continuing with the present course of action until that action is changed. The individual projects analyzed in this IDEA should be considered independent of each other and the USAF could eventually choose to implement all, none, or any combination of these projects.

Through implementation of the No Action Alternative, future installation development projects would continue to be evaluated on an individual project basis. It is anticipated that future development would occur, but those development projects would be analyzed through the preparation of separate project-specific NEPA documentation. The No Action Alternative in this EA assumes that the Proposed Action would not occur, and is carried forward for analysis as a baseline against which the impacts of the Proposed Action and potential action alternatives can be evaluated.

Project Descriptions. The scope, location, and objectives of the projects are described below, grouped by project category (facility construction, infrastructure improvements, and facility demolition). This section also presents reasonable and practicable alternatives for projects where multiple viable courses of action exist. Those alternatives are assessed relative to the universal selection standards and project-specific selection standards, where applicable. Alternatives that meet all four universal selection standards and applicable site-specific selection standards are considered reasonable and retained for consideration in this EA. Alternatives that do not meet one or more of the selection standards are considered unreasonable and are not retained for consideration in this EA.

Projects would be designed to meet current AT/FP requirements per UFC 4-010-01 and meet Leadership in Energy and Environment Design certification where possible and practicable.

2.3.1 Facility Construction Projects

Project C1: Dangerous Cargo Pad and CATM Facility

A new permanent dangerous cargo pad would be constructed to replace the current activity of loading and unloading munitions and other hazardous cargo on one of two airfield runways, which requires suspension of all aircraft operations on the runway. The approximately 160,000-square foot (ft^2) dangerous cargo pad would include two concrete pads to accommodate two C-130 or smaller aircraft simultaneously, lighting, markings, approximately 1,000-foot ESQD arc, and a new paved aircraft taxiway from the runway (3,000 feet in length and a total surface area of approximately 735,000 ft^2) (see **Figure 2-2**). This project would include demolition and relocation of the existing CATM as well as demolition of an unused 91,500-ft^2 aircraft compass calibration rose pad. The current CATM site must be investigated to determine environmental remediation requirements to address ammunition lead residue.

The proposed 25,000-ft^2 CATM facilities would include an 82-foot indoor small arms range, CATM building, trap and skeet range, and associated infrastructure. The new facility would allow for a broader array of training activities supporting the Cannon AFB mission based on new rifle/carbine AFQC requirements. The trap and skeet range would have an approximately 500-

foot semicircular safety fan buffer. Demolition and construction would occur between 2018 and 2020.

Additional Project-Specific Selection Standards:

Selection Standard C1-A: The dangerous cargo pad must be sited in an area readily accessible to the airfield runway and provide space for sufficient ESQD arcs.

Selection Standard C1-B: The new CATM must be sited in an area with sufficient space for the required safety fan buffer for the trap and skeet range.

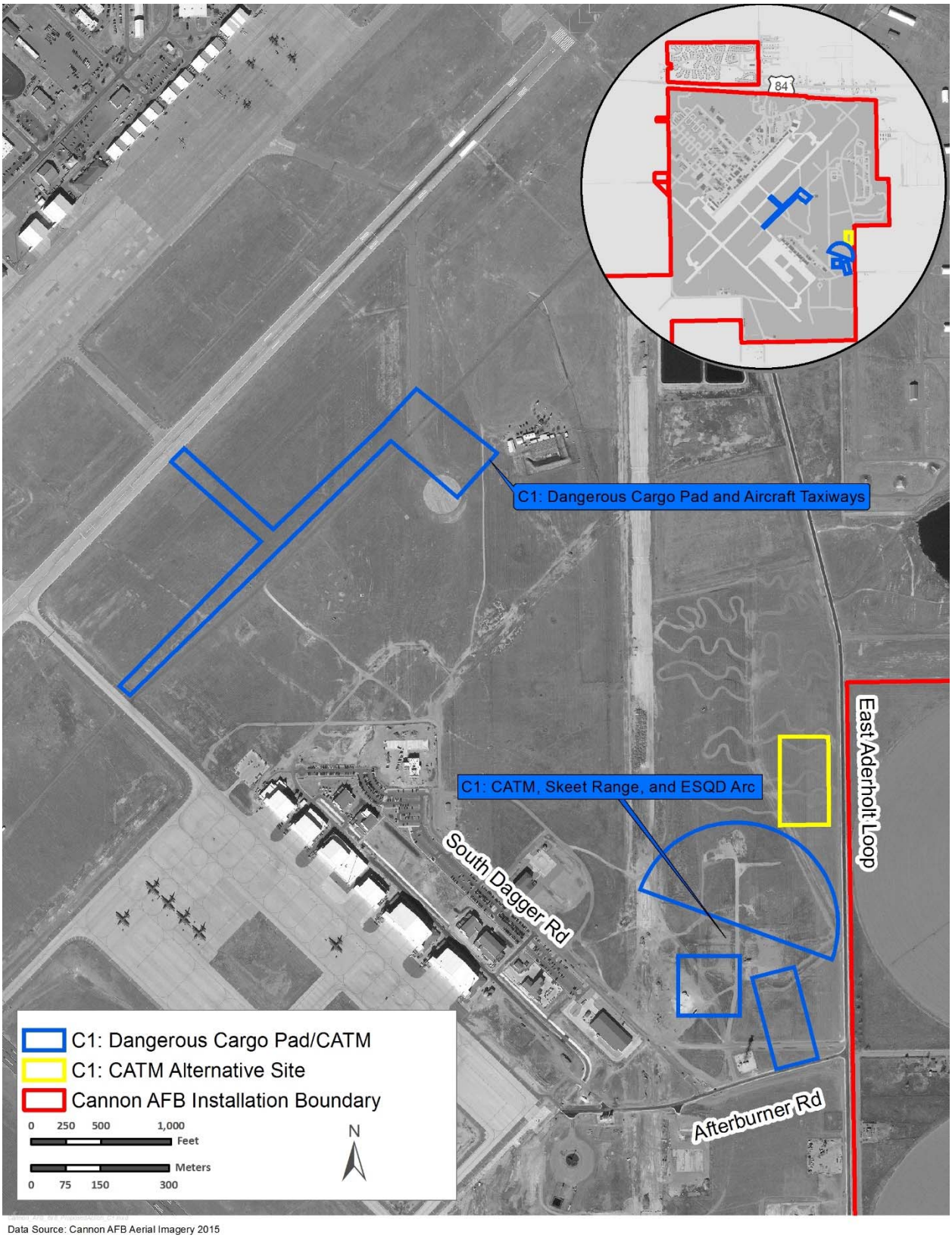
Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified two sites meeting the selection standards for the CATM facility. The first site is adjacent and to the south of a former wastewater holding pond to the south of the Cannon AFB wastewater treatment plant (WWTP), and the second site is further south of the first (see **Figure 2-2**).

- *Alternative C1-1 (Preferred Alternative):* Under this alternative, the proposed CATM facility would be constructed south of the WWTP holding basin along the west side of East Aderholt Loop. This alternative would allow the skeet range safety fan buffer to overlap an existing munitions ESQD arc, saving prime developable land elsewhere.
- *Alternative C1-2:* Under this alternative, the proposed CATM facility would be constructed just northwest of the intersection of East Aderholt Loop and Afterburner Road. Although closer to existing utility connections than Alternative C1-1, this alternative would use land that could be better suited for other development purposes.
- *No Action Alternative C1:* Under the No Action Alternative, this project would not be constructed. Dangerous cargo transfer would continue on the runway, disrupting aircraft operations, and the CATM would continue failing to meet rifle/carbine AFQC requirements. This alternative does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**. The No Action Alternative is carried forward for further analysis, consistent with 32 CFR § 989, to provide a baseline against which the impacts of the action alternative can be assessed.

Alternatives Considered but Eliminated from Further Analysis: No other alternatives were considered but eliminated. Siting of the dangerous cargo pad site was limited by the ESQD requirements and the most suitable location was determined to be south of runway 04/22. Existing off-runway aprons cannot be used for dangerous cargo offloading without ESQD criteria violations. No other suitable site was identified that met ESQD space requirements that was not already otherwise considered prime developable land in the IDP.

Project C2: Professional Development Center

A new Professional Development Center (PDC) at Cannon AFB would create a one-stop facility for all educational needs on the installation that meets the installation's ongoing population increase. This project involves construction of a 43,000-ft^2 multi-use building and associated infrastructure that would consolidate the Airman Leadership School (ALS), First Term Airmen



Data Source: Cannon AFB Aerial Imagery 2015

Figure 2-2. Site of Project C1: Dangerous Cargo Pad/CATM

Center, Professional Enhancement Center, Base Library/Resource Center, and Education Center. The project includes installation of a 28,000-ft^2 concrete drill pad and demolition of the existing ALS facility (16,800 ft^2), which is more than 50 years old, undersized, and energy inefficient (see **Section 2.3.3** for a discussion of the proposed demolition projects). Demolition and construction and would occur between 2021 and 2026.

Additional Project-Specific Selection Standards:

Selection Standard C2-A: The PDC must provide greater space for education and training requirements, must be centrally located on the installation, and would ideally be located near the military personnel housing complex.

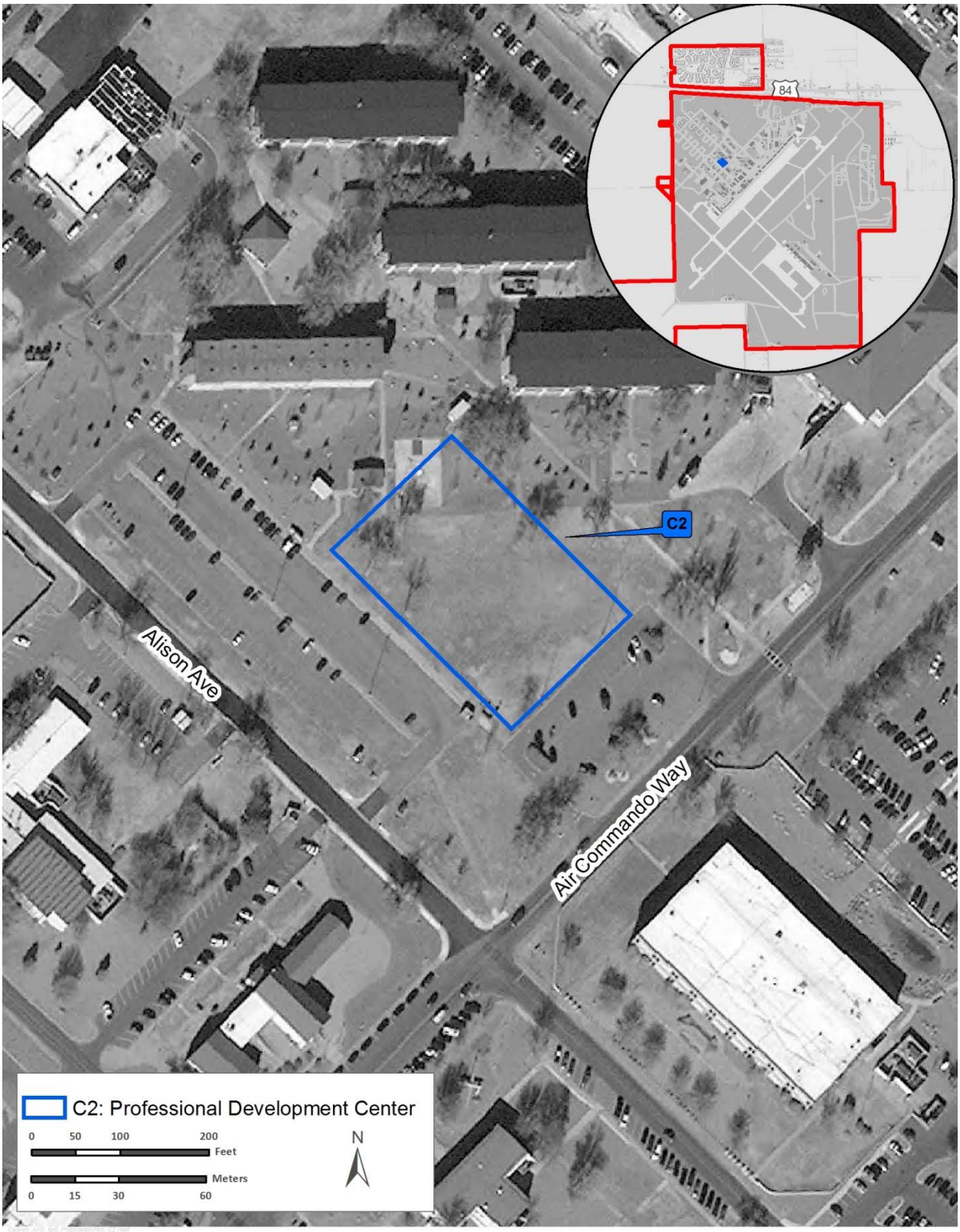
Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified a single site meeting the selection standards. It is in open space within walking distance of the military personnel housing in the central portion of the installation.

- *Alternative C2-1 (Preferred Alternative):* Under this alternative, the proposed PDC facility would be constructed at the north corner of the intersection of Air Commando Way and Alison Avenue (see **Figure 2-3**).
- *No Action Alternative C2:* Under the No Action Alternative, this project would not be constructed. All facilities would remain in their current locations, which are too small for the increased amount of personnel using them. ALS class sizes would continue to be limited, resulting in delays for airmen to complete their mandatory education courses. The installation library would continue to lack adequate parking for patrons. This alternative does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: No other sites available for development were identified that meet the selection standards for this project, including being sufficiently close to military personnel housing.

Project C3: Satellite Fire Station

A new satellite fire station would be constructed along the Southeast Ramp on the installation's airfield. Mission and population growth on Cannon AFB led to the creation of the new C-130 aircraft operations area in the Southeast Development District. This new operations area and aircraft parking configuration has created an impediment to responding fire apparatus, preventing units from meeting required response times. The fire station complex would consist of four bays (eight stalls) for fire vehicles, Emergency Communications Center (ECC), Base Defense Operations Center, and emergency power generator. The fire station complex and ECC would be constructed in compliance with UFC 4-730-10, *Fire Stations*. Construction of the fire station would occur between 2022 and 2027.



Data Source: Cannon AFB Aerial Imagery 2015

Figure 2-3. Site of Project C2: Professional Development Center

Additional Project-Specific Selection Standards:

Selection Standard C3-A: The site for the fire station must meet the required response times of 5 minutes for unannounced aircraft incidents and 7 minutes for structural fire events per DoD Instruction 6055.6, *DoD Fire and Emergency Services Program*.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified a single site meeting the selection standards in the Southeast Development District (see **Figure 2-4**).

- *Alternative C3-1 (Preferred Alternative):* Under this alternative, the proposed facility would be built to the southeast of the Southeast Ramp along Afterburner Road. The preferred site was identified to allow fire vehicles to be housed and operated on the perimeter of the Southeast Development District to minimize conflicts with other traffic in the area during emergency call responses
- *No Action Alternative C3:* Under the No Action Alternative, this project would not be constructed. Personnel, aircraft, and facilities are at greater risk for injury or fatality because of the existing fire station in the North Ramp District being unable to meet required response times in the Southeast Development District. In addition, the existing installation communications centers are not configured or of sufficient size to accommodate the requirements and functions of an ECC. This alternative does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: The project is sited in the Southeast Development District to best meet the project-specific selection standard and complement the location and operation of the existing fire station. An alternative to constructing a second fire station was to implement a process to halt all flightline activity and drive across the runway to meet response times, but that alternative was eliminated because it would be impractical and a safety hazard to attempt to halt flightline activity to meet response times. No other suitable site was found that met the selection standards and planning and siting objectives.

Project C4: Satellite Fitness Center

Air Force Handbook 32-1084, *Facility Requirements,* authorizes a fitness/health and wellness center capacity at more than double the existing rate at Cannon AFB based on its current population. This project entails construction of a two-story, 18,000-ft^2 satellite fitness center, outdoor recreation and fitness facilities, and associated infrastructure. The project would provide an adequate facility to enhance combat readiness by supporting military personnel fitness program requirements and offer fitness and sports opportunities to all installation personnel. Sustainable principles would be integrated into the design, development, and construction of the project in accordance with EO 13693, *Planning for Federal Sustainability in the Next Decade*, and other applicable laws and regulations. Construction of the satellite fitness center station would occur in 2020.

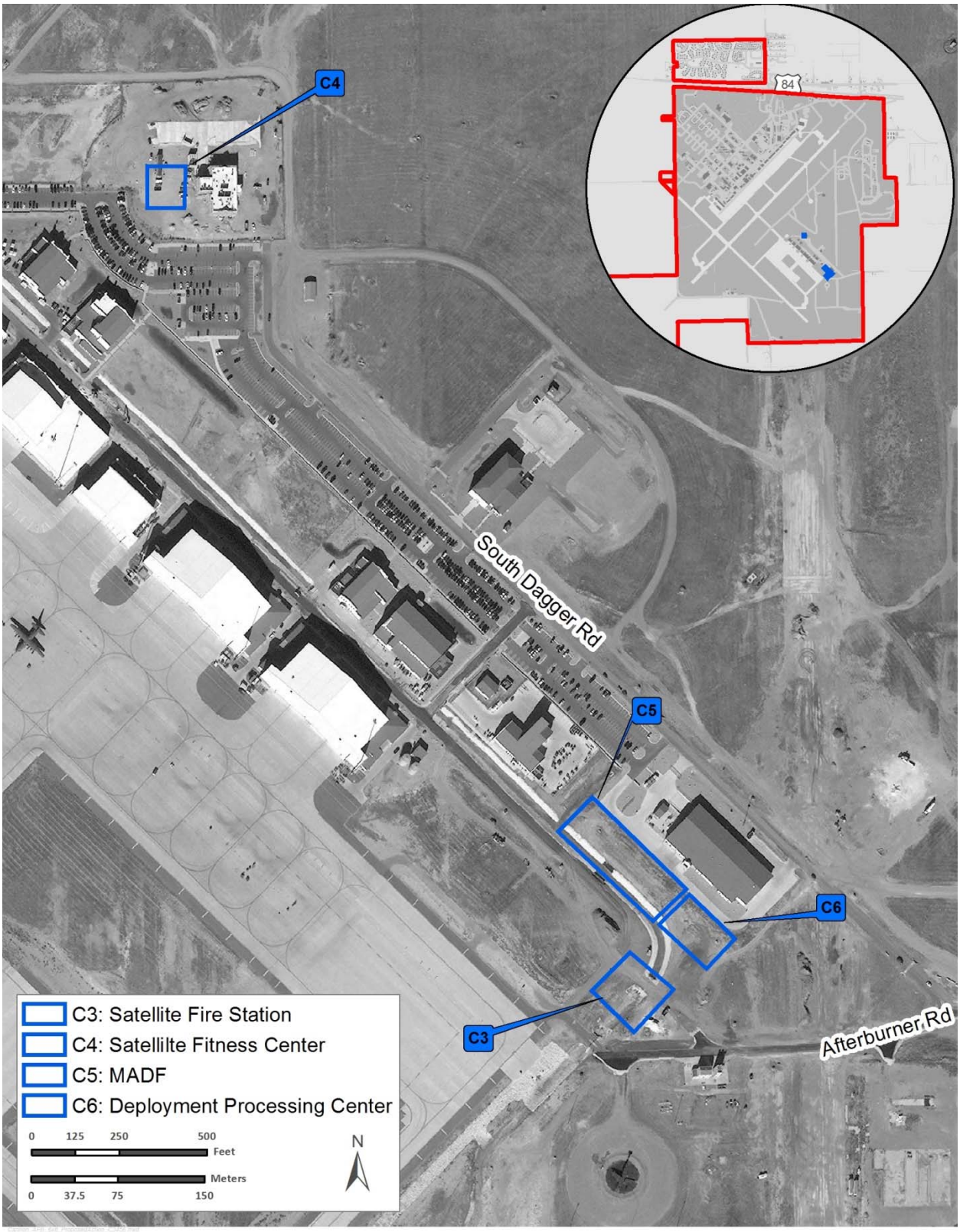


Figure 2-4. Site of Projects C3: Satellite Fire Station, C4: Satellite Fitness Center, C5: Mobility Aerial Delivery Facility, and C6: Deployment Processing Center

Additional Project-Specific Selection Standards:

Selection Standard C4-A: The satellite fitness center must be sited in a location to best serve the installation population while complementing the location and continued operation of the only existing fitness center elsewhere on the installation, in the North Ramp District. The new facility should be co-located with like amenities and provide an additional fitness resource for installation personnel.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified a single site adjacent to the dining facility in the Southeast Development District that meets the selection standards (see **Figure 2-4**).

- *Alternative C4-1 (Preferred Alternative):* Under this alternative, the proposed facility would be constructed near the western end of Afterburner Road. The project would be sited in the Southeast Development District to best meet the project-specific selection standard and complement the existing fitness center in the North Ramp District. The site within the Southeast Development District would be adjacent to the dining facility; co-locating these facilities would consolidate like amenities together within this portion of the installation. Siting the facility in the Southeast Development District would also reduce the commuting time to the nearest fitness facility by 30 minutes for personnel working in this area.
- *No Action Alternative C4:* Under the No Action Alternative, this project would not be constructed. The existing 30-year old fitness center in the North Ramp District, which can only serve half the installation population and experiences facility crowding and limited parking during peak use, would continue to be the only fitness facility on the installation. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: The existing fitness facility in the North Ramp Area could be expanded; however, this would not reduce commuting times to the facility. No other suitable site was identified that was sufficiently close to current activities and accommodations.

Project C5: Mobility Aerial Delivery Facility (MADF)

This project involves construction of a 35,000-ft^2 MADF materiel warehousing function for organizing and storing cargo to be transferred to and from C-130 aircraft. The MADF includes installation of a 10-ton ceiling crane for moving cargo, parachute drying tower, and 76,000-ft^2 cargo delivery facility storage yard. The existing hangar used for the MADF in the North Ramp District (Building 133) would be demolished. Construction of the MADF would occur between 2018 and 2020.

Additional Project-Specific Selection Standards:

Selection Standard C5-A: The MADF must be sited in a suitable location on the flightline that provides immediate access to C-130 aircraft on the airfield, sufficient storage space for cargo, and co-located with the proposed Deployment Processing Center.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified a single site meeting the selection standards in the southern portion of the Southeast Development District (see **Figure 2-4**).

- *Alternative C5-1 (Preferred Alternative):* The project would be sited in the Southeast Development District to best meet the project-specific selection standard because the new C-130 hangars are located in the Southeast Development District. Under this alternative, the proposed MADF facility would be constructed along Afterburner Road, adjacent to the proposed Deployment Processing Center and Satellite Fire Station.
- *No Action Alternative C5:* Under the No Action Alternative, this project would not be constructed. The existing MADF function in Building 133 would continue to be used although it is also within the 7:1 transition slope airspace associated with the airfield, which is in violation of airfield safety criteria. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: No other site alternatives sufficiently close to current activities and accommodations were identified in the Southeast Development District or elsewhere on the flightline.

Project C6: Deployment Processing Center

This project involves construction of a 35,000-ft^2 processing center for personnel departing for or returning from deployment. This facility would consolidate the current inefficient practice of processing of personnel and cargo that occur at different locations on the installation. Building 620 (32,500 ft^2), which currently houses the personnel deployment function, would be demolished as part of this project. Construction of the Deployment Processing Center would occur between 2021 and 2026.

Additional Project-Specific Selection Standards:

Selection Standard C6-A: The Deployment Processing Center must be sited in a suitable location on the flightline that provides immediate access to C-130 aircraft on the airfield, sufficient space for personnel cargo and processing, and co-located with the proposed MADF.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified a single site meeting the selection standards in the southern portion of the Southeast Development District (see **Figure 2-4**).

- *Alternative C6-1 (Preferred Alternative):* The project would be sited in the Southeast Development District to best meet the project-specific selection standard because the new C-130 hangars are located in the Southeast Development District. Under this alternative, the proposed Deployment Processing Center would be constructed along Afterburner Road, adjacent to the proposed MADF and Satellite Fire Station.
- *No Action Alternative C6:* Under the No Action Alternative, this project would not be constructed. Mobility for deployment would continue to be slow and inefficient because of the separate locations for personnel deployment and cargo deployment. Building 620

would continue to be completely inadequate for personnel deployment, which decreases the number of personnel that can be processed at any one time. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

- **Alternatives Considered but Eliminated from Further Analysis:** No other site alternatives sufficiently close to current activities and accommodations were identified in the Southeast Development District or elsewhere on the flightline.

Project C7: Lodging Facility

This project involves construction of an approximately 25,000-ft^2 lodging facility for visiting personnel and their families. The current lodging office (Building 1801) is in violation of airfield criteria because it is too close to the runway and does not offer an adequate entrance and lobby area, and as a result, this facility is slated for demolition. Support functions are currently scattered throughout the lodging compound inefficiently. The proposed facility would consolidate a new lodging office and 52 rooms into one facility. The proposed lodging office would include an employee break room; conference room; laundry room; front desk; lobby; offices for staff; supply warehousing and storage; and a lodging maintenance area. The project includes all utilities, pavements, site improvements, landscaping and all required facility support, and demolition of approximately 31,000 ft^2 of existing lodging facilities. The project would replace two of the four current lodging facility structures (Buildings 1818 and 1819), which are slated for demolition in FY 2017 and have been addressed under previous NEPA documentation. Buildings 1812 and 1816 would be retained, and the current capacity of 96 rooms at the lodging facility would be achieved following completion of the project. Construction of the proposed Lodging Facility would occur between 2025 and 2028.

Additional Project-Specific Selection Standards:

Selection Standard C7-A: The Lodging Facility must be centrally located on the installation and would ideally be located near primary administrative facilities.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified a single site meeting the selection standards.

- *Alternative C7-1 (Preferred Alternative):* Under this alternative, the proposed Lodging Facility would be constructed south of Building 1820 along the southwestern side of Levitow Avenue, just north of the existing facility at the southwestern end of Eagle Claw Boulevard (see **Figure 2-5**).
- *No Action Alternative C7:* Under the No Action Alternative, this project would not be constructed. Available lodging capacity for visiting personnel would remain an issue because personnel would have to also rely on off-installation accommodations, which reduce efficiency and are subject to availability. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: No other sites available for development were identified that meet the selection standards for this project.

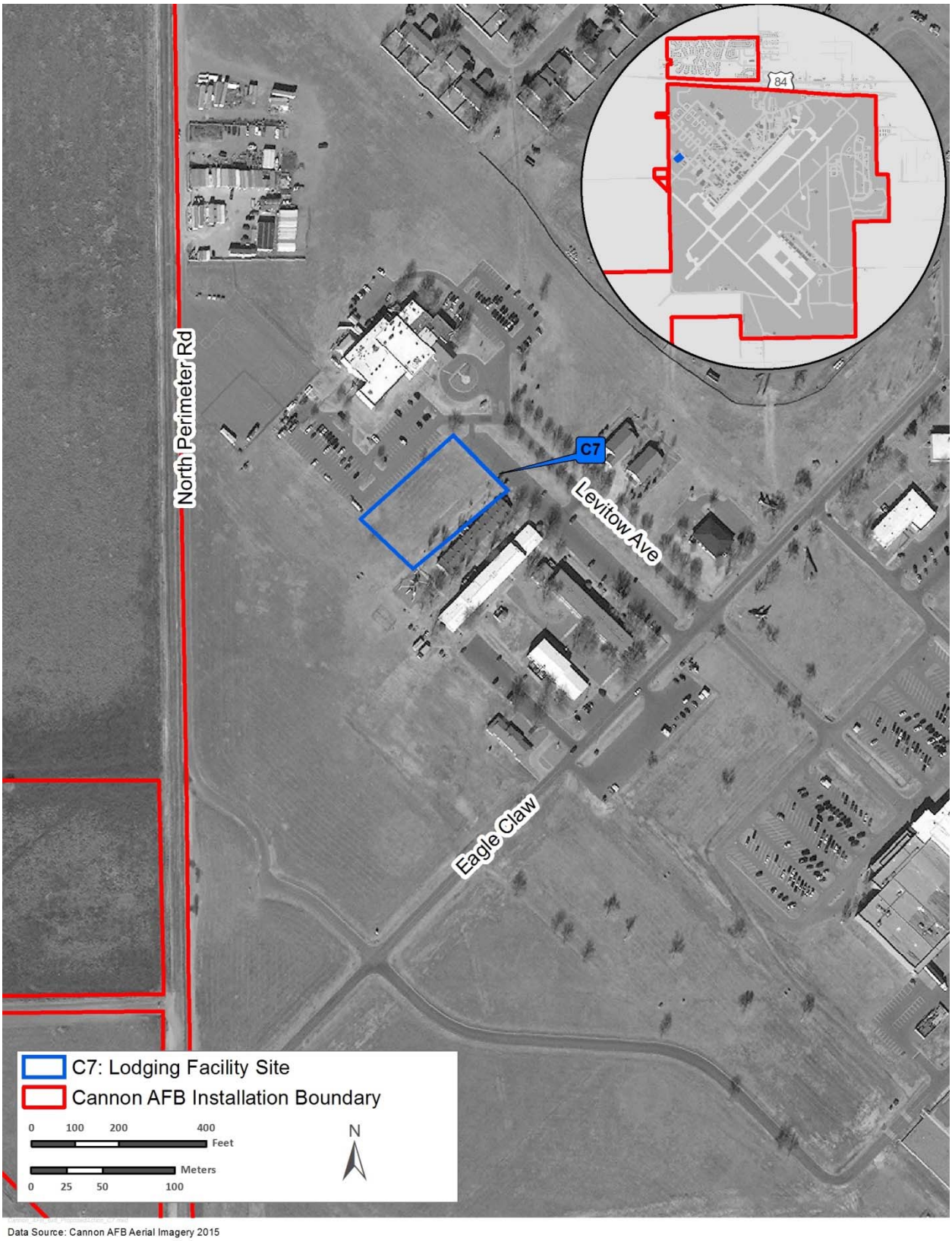


Figure 2-5. Site of Project C7: Lodging Facility

Project C8: Transportation Complex

A centralized transportation complex to include space for a vehicle maintenance shop, vehicle operations administration, contractor operated parts store, battery storage, exterior hazardous material storage, vehicle parking, vehicle wash rack and vehicle parking area would be constructed on the installation. Current transportation facilities are scattered throughout the installation in Buildings 335 (customer service and administration space), 375 (multipurpose vehicle maintenance), 379 (special purpose vehicle and material handling equipment), 438 (vehicle wash rack and shed), and 442 (vehicle operations administration personnel). The age and deterioration of these facilities necessitates their replacement. Building 438 contains lead based paint in the roof framing of the facility and the concrete floor in the maintenance bays of Buildings 375 and 379 are cracking around the vehicle lifts. The heating, ventilation, and air conditioning in Building 379 is inadequate and inefficient. Additionally, Building 375 only has one maintenance bay large enough to accommodate vehicles over 40 feet. Large vehicles remain unserviceable for longer periods of time because the facility is not large enough to accommodate them.

The purpose of this project is to provide a consolidated modern, energy-efficient, transportation complex facility that would house all transportation personnel and functions. The project would collocate transportation facilities, which would improve maintenance efficiency. The new transportation complex would be approximately 51,000 ft^2 and meet current building, fire, life safety, and energy codes. The complex would also receive new utilities, associated parking, and 1.6-acre vehicle storage area. Buildings 215, 226 (Cannon AFB 90-day hazardous waste accumulation point), and 227 would be demolished after their functions are relocated. Construction of the Transportation Complex would occur between 2026 and 2028.

Additional Project-Specific Selection Standards:

Selection Standard C8-A: The Transportation Complex must be centrally located on the installation.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified two sites meeting the selection standards (see **Figure 2-6**).

- *Alternative C8-1 (Preferred Alternative):* Under this alternative, the proposed transportation complex would be constructed to the east of Chindit Boulevard just south of West Street.
- *Alternative C8-2:* Under this alternative, the proposed facility would be constructed on the east side of West Street, just south of North Aderholt Loop. Buildings 209, 211, 212, and 214 would be demolished instead under this alternative.
- *No Action Alternative C8:* Under the No Action Alternative, this project would not be constructed. Vehicle maintenance would become a greater issue with the increase in personnel on the installation, and transportation operations and maintenance facilities would continue to be outdated and inefficiently spread throughout the installation. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

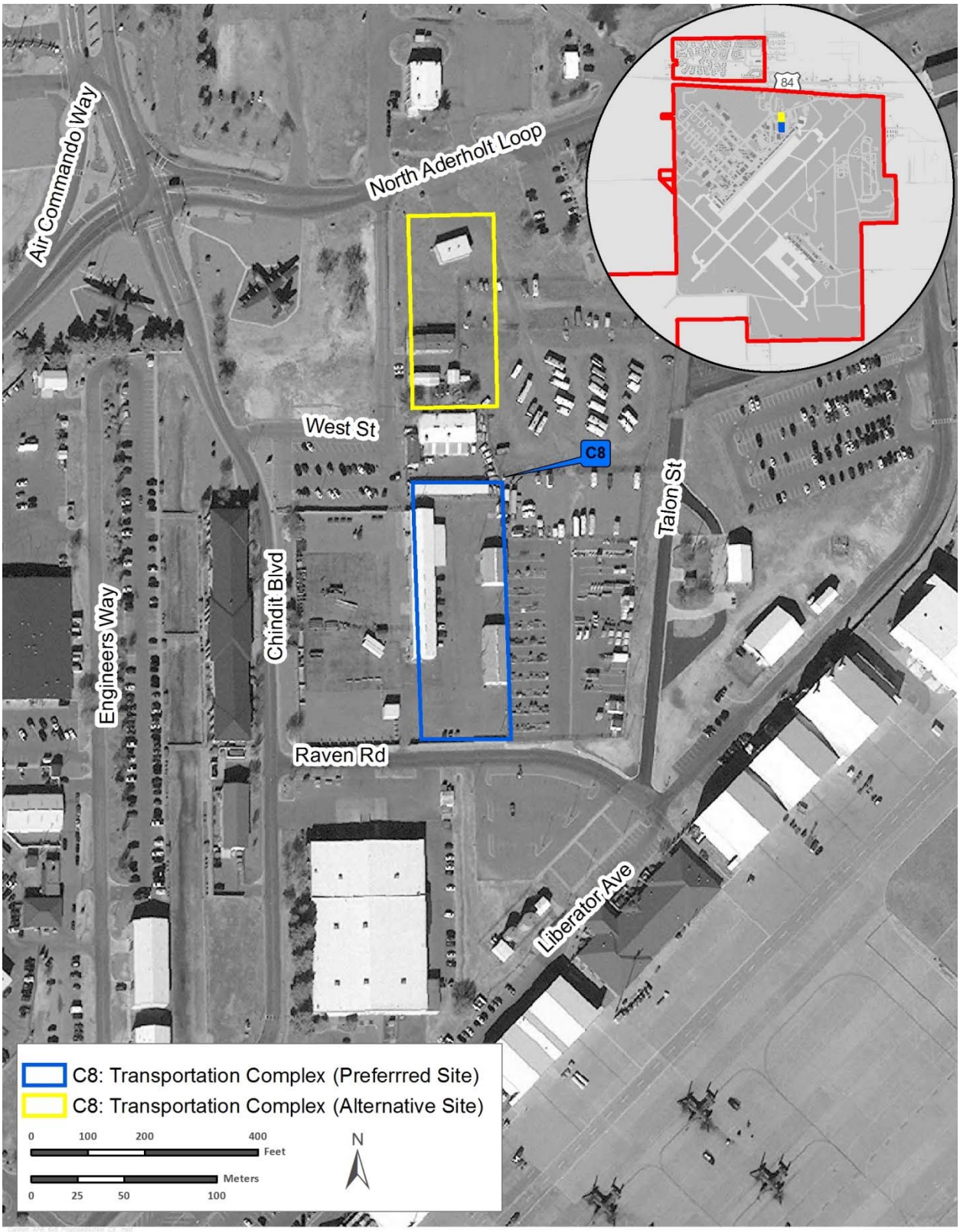


Figure 2-6. Site of Project C8: Transportation Complex

Alternatives Considered but Eliminated from Further Analysis: No other sites available for development were identified that meet the selection standards for this project.

Project C9: Wing HQ/Law Center

The exterior façade of the Wing HQ building (constructed in 1960) is rapidly deteriorating and requires major repairs to avoid safety hazards. The current Wing HQ building is not handicap-accessible, which would be incorporated into the design of the new facility. The Law Center was constructed in 1962 and has similar façade renovation requirements. Additionally, the Law Center does not meet legal facility design guide requirements (e.g., the courtroom is not soundproof, no set-aside defense witness waiting area is available).

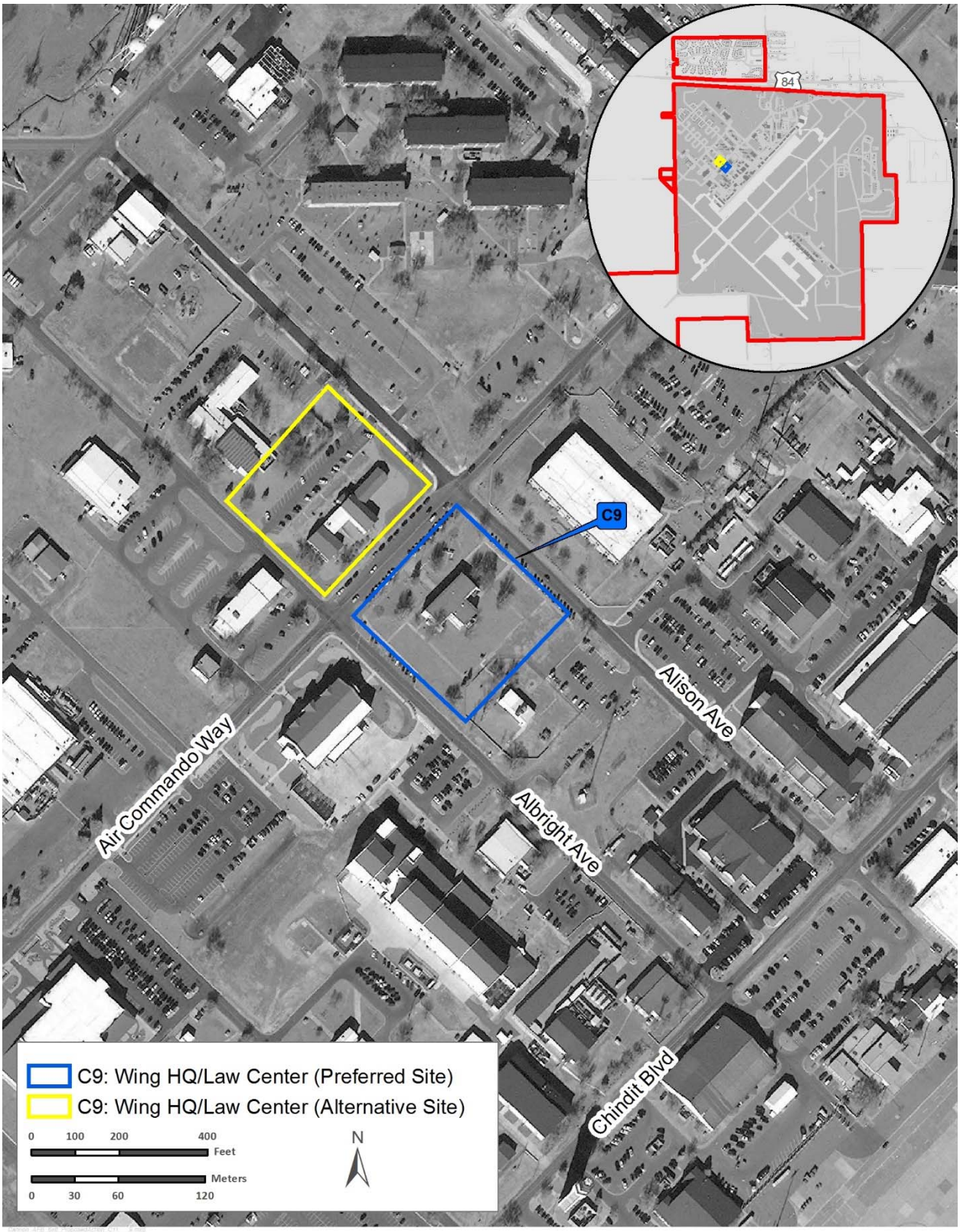
The replacement facility would be approximately 26,500 ft^2 and consist of HQ space, administrative office space, courtroom, and associated facilities. Space requirements for individual HQs are developed from their official organization charts and unit manning documents. Space requirements for Law Center personnel would be based on updated operational requirements. Approximately 230 personnel would be expected to use the space and could include the Base Commander, First Sergeant, Public Affairs, and Security Forces. The current Law Center would be demolished. The total area to be disturbed would be up to 3.5 acres. Construction of the Wing HQ/Law Center would occur between 2026 and 2028.

Additional Project-Specific Selection Standards:

Selection Standard C9-A: The new Wing HQ/Law Center is required to be near other primary administrative facilities on the installation to best meet the needs of personnel.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified two sites meeting the selection standards near the intersection of Air Commando Way and Albright Avenue (see **Figure 2-7**).

- *Alternative C9-1 (Preferred Alternative):* Under this alternative, a three-story Wing HQ/Law Center would be constructed approximately 20 feet southeast of the current Wing HQ, at the eastern corner of the intersection of Air Commando Way and Albright Avenue. The current 14,815-ft^2 Wing HQ building and 11,643-ft^2 Law Center would be demolished. The combined facility would also include the installation's Public Affairs Office and Inspector General Office. Demolition of the current Wing HQ and Law Center facilities would occur after the completion of the combined complex.
- *Alternative C9-2:* Under this alternative, the proposed Wing HQ/Law Center would be constructed on the current site of the Law Center, at the northern corner of the Air Commando Way/Albright Avenue intersection.
- *No Action Alternative C9:* Under the No Action Alternative, replacement of the current Wing HQ and Law Center would not occur. These facilities would continue to deteriorate until they no longer provided a safe working environment for personnel. In addition to the deficiencies identified in the description above, the heating, ventilation, and air conditioning system for the Law Center is inadequate for the facility, and must be turned off during hearings because of noise from the system in the courtroom. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.



Data Source: Cannon AFB Aerial Imagery 2015

Figure 2-7. Site of Project C9: Wing HQ/Law Center

Alternatives Considered but Eliminated from Further Analysis: Renovation of the current buildings was deemed to not be a practical alternative because of the highly deteriorated condition of the existing buildings, which would not meet Selection Standard 2. Therefore, this alternative was eliminated from further analysis. No other locations have been identified for development that meet the selection standards for this project.

Project C10: Special Operations Forces (SOF) Squadron Operations Facility

A 26,000-ft^2 facility would be constructed to serve as a functional squadron operations area that would house administration, planning and briefing areas, and flying equipment storage for each CV-22 squadron crewmember. Utilities, parking, communication, force protection, and all other necessary support would also be constructed. Construction of the 20th SOF Squadron Operations Facility would occur between 2019 and 2021.

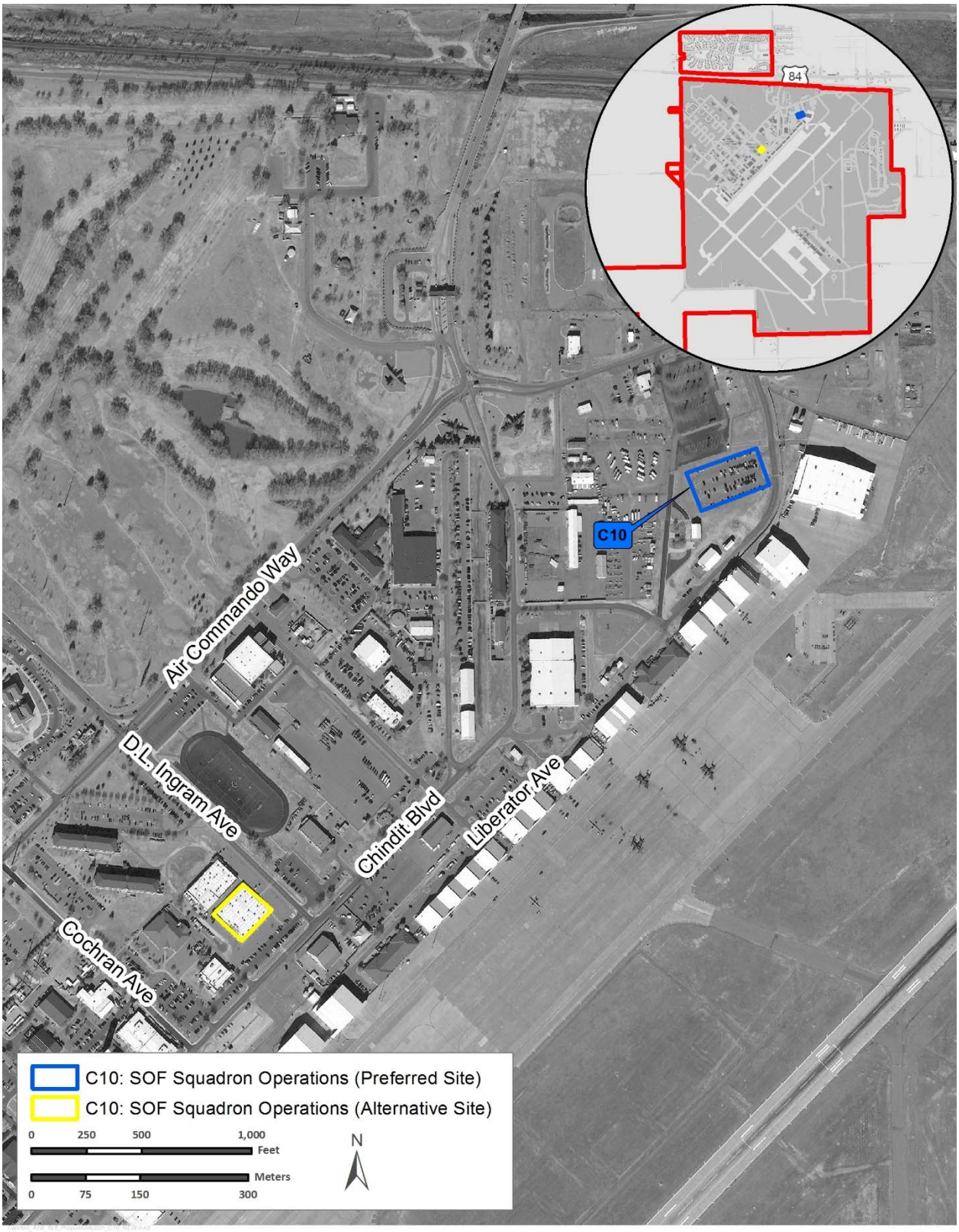
Additional Project-Specific Selection Standards:

Selection Standard C10-A: The SOF Squadron Operations Facility must be sited in a suitable location that provides immediate access to the flightline.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified two sites near the North Ramp District that meet the selection standards (see **Figure 2-8**).

- *Alternative C10-1 (Preferred Alternative):* Under this alternative, the proposed SOF Squadron Operations Facility would be constructed to the northeast of the intersection of Liberator Avenue and Talon Street. The current 27,600-ft^2 CV-22 Squadron Operations Facility (Building 198) would be demolished. Demolition of three additional facilities associated with the existing SOF Squadron Operations Facility (inactive hazardous materials storage facility [Building 202], liquid oxygen storage facility [Building 218], and aircraft maintenance shop [Building 229], totaling 2,200 ft^2) would also occur. The functions would be relocated to the new facility as appropriate.
- *Alternative C10-2:* Under this alternative, the proposed facility would be constructed at the western corner of the intersection of Chindit Boulevard and D.L. Ingram Avenue. Building 551 is a 32,942-ft^2 administrative facility that would be demolished on the site under this alternative.
- *No Action Alternative C10:* Under the No Action Alternative, this project would not be constructed. Lack of an adequate SOF Squadron Operations Facility would adversely impact CV-22 squadron operations and the mission at Cannon AFB. The unit would be less cohesive and less efficient working in multiple separate temporary facilities away from the flightline. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: No other sites available for development were identified that meet the selection standards for this project.



Data Source: Cannon AFB Aerial Imagery 2015

Figure 2-8. Site of Project C10: SOF Squadron Operations Facility

Project C11: SOF Hangar

This project involves construction of a 43,500-ft^2 aircraft maintenance hangar and associated aircraft maintenance shop for remotely piloted aircraft. The additional hangar would meet the capacity requirements for the incoming aircraft. This facility would also include approximately 6,000 ft^2 of covered parking for aircraft. Construction of the SOF Hangar would occur between 2022 and 2023.

Additional Project-Specific Selection Standards:

Selection Standard C11-A: The hangar must be on the flightline for access to the installation's runways.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified two sites meeting the selection standards along the flightline (see **Figure 2-9**).

- *Alternative C11-1 (Preferred Alternative):* Under this alternative, the proposed SOF Hangar would be constructed at the southwest corner of the flightline in the North Ramp District. Demolition of an existing aging 32,754-ft^2 MADF hangar on the site (Building 133) would occur under this alternative.
- *Alternative C11-2:* Under this alternative, the proposed facility would be constructed along the flightline, near the southern end of D.L. Ingram Avenue in the North Ramp District. Buildings 173 and 174 are each approximately 23,400-ft^2 maintenance facilities that would instead be demolished on the site under this alternative.
- *No Action Alternative C11:* Under the No Action Alternative, this project would not be constructed. Aircraft maintenance and storage capacity, particularly for remotely piloted aircraft, is becoming an issue with the doubling of aircraft in 2018. There would not be a dedicated RPA hangar and RPAs would have to compete for space in other hangars. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: No other locations have been identified for development that meet the selection standards for this project, particularly because of the scale, type, and siting requirements for the hangar.

Project C12: SOF Simulator Facility

A 13,000-ft^2 simulation facility for SOF would be constructed as an addition to the existing flight simulator complex to house a motion-based C-146A aircraft weapon system trainer, motion-based U-28 aircraft weapon system trainer, and U-28 backend non-motion Combat Systems Operator trainer. This mission rehearsal training facility would support crew upgrade training. Rehearsal devices would provide realistic mission training, real-world mission rehearsals, and emergency procedures training. Secure areas used to develop software and database generation for the mission rehearsal imagery would also be required. Construction of the SOF Simulator Facility would occur between 2027 and 2028.

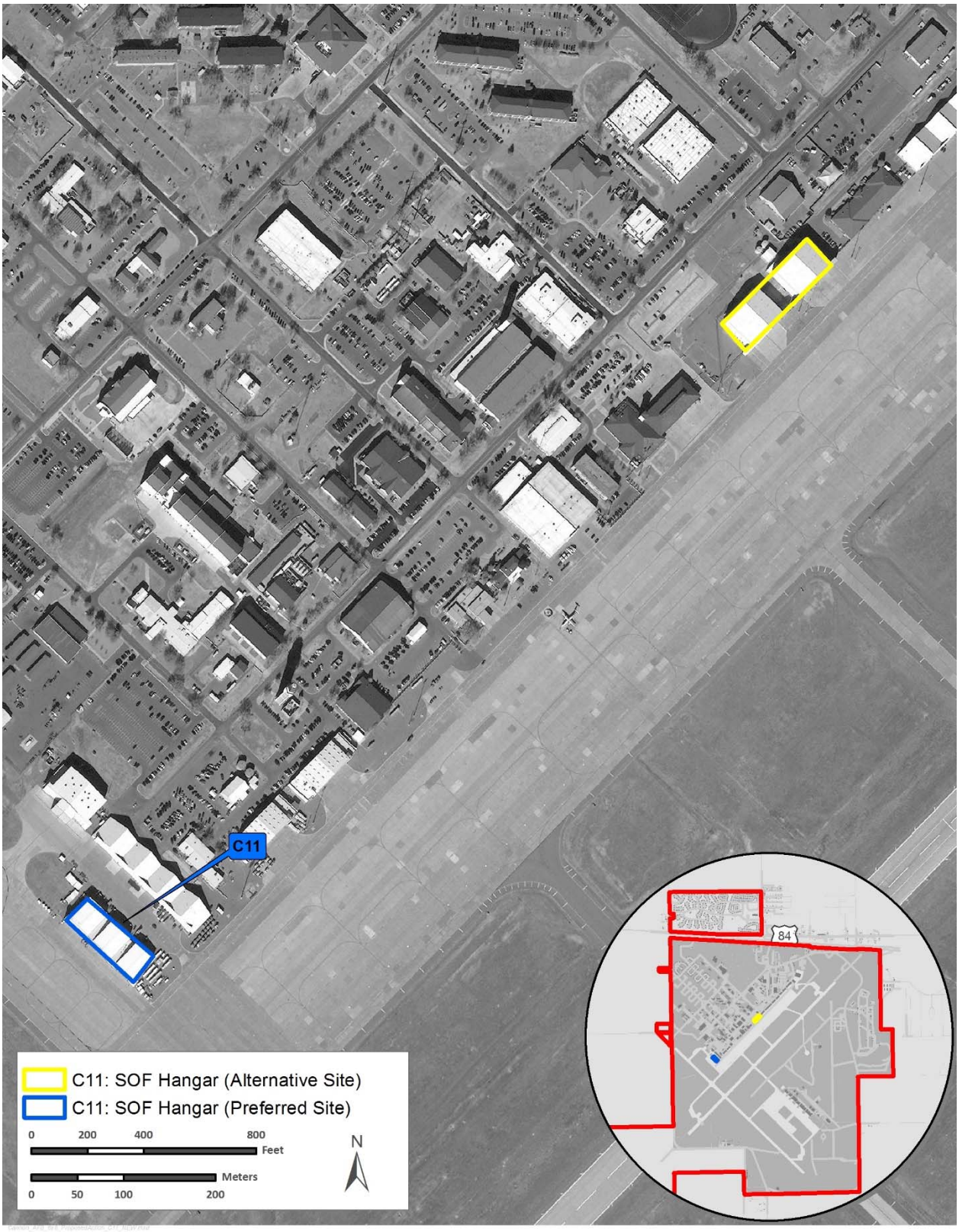


Figure 2-9. Site of Project C11: SOF Hangar

Additional Project-Specific Selection Standards:

Selection Standard C12-A: The SOF Simulator Facility must be co-located with the existing flight simulator complex and meet the criteria outlined in Air Force Handbook 32-1084, *Facility Requirements*.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified a single site meeting the selection standards on Levitow Avenue (see **Figure 2-10**).

- *Alternative C12-1 (Preferred Alternative):* Under this alternative, the proposed facility would be constructed on Levitow Avenue between Chindit Boulevard and Air Commander Way, adjacent to an existing storage shed.
- *No Action Alternative C12:* Under the No Action Alternative, this project would not be constructed. There are no facilities to provide proper training procedures that meet SOF requirements. As a result, lost combat readiness would occur because of the inability of aircraft crews to accomplish training events required to maintain currency and qualification in the aircraft. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: Because of the need for co-location at the existing simulator, no other sites available for development were identified that meet the selection standards for this project.

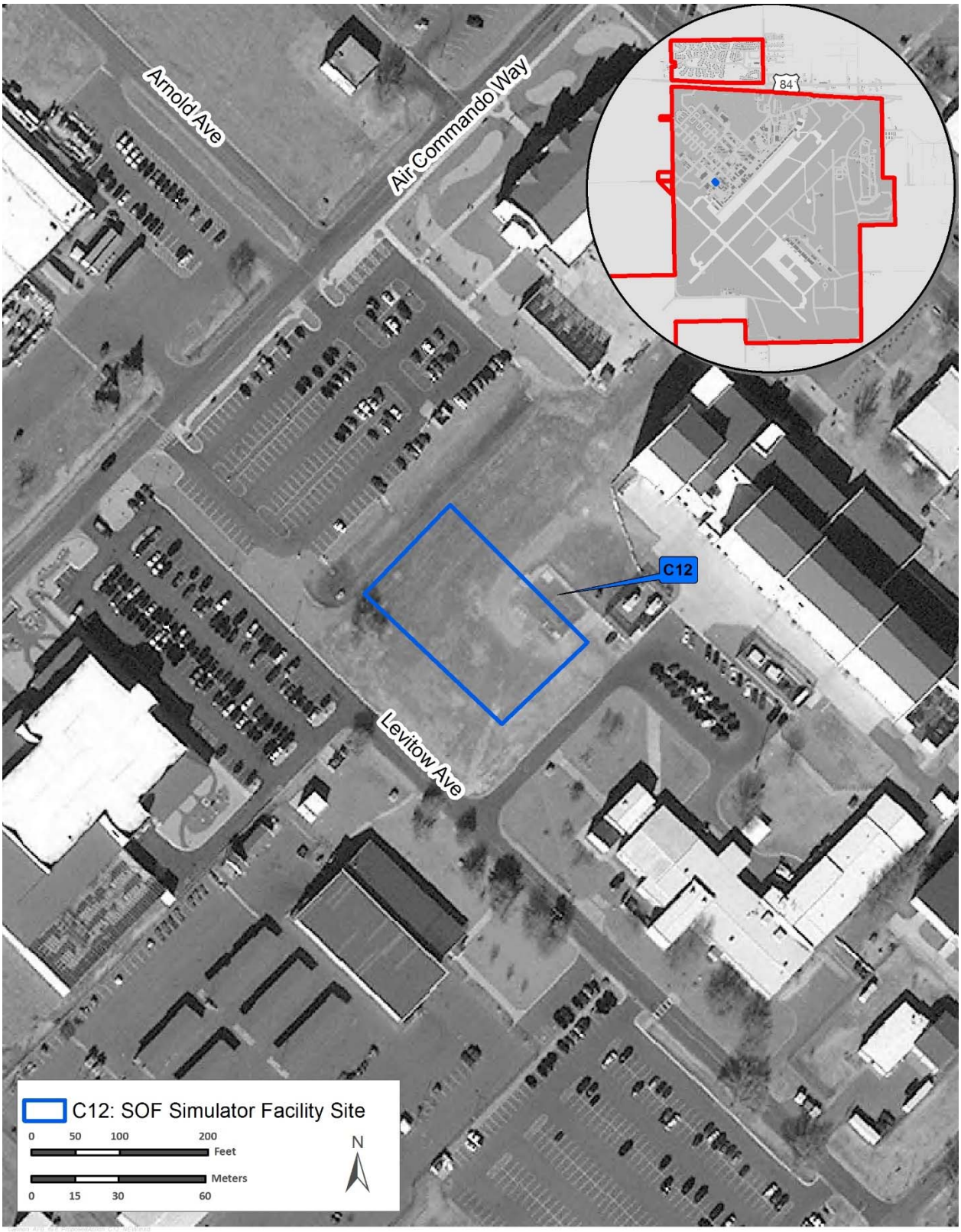
Project C13: Refueler Maintenance Facility

The number of R-11 special purpose refueling vehicles is projected to increase to meet the mission needs of additional aircraft stationed at Cannon AFB. The current Refueler Maintenance Facility (Building 326) is over 50 years old and would not be able to support the additional vehicles. In addition, Air Force Instruction 91-203, *Air Force Consolidated Occupational Safety Instruction,* does not allow for refueling vehicles to be serviced or repaired in maintenance shops with other vehicular equipment. To allow refueling vehicles to meet aircraft response times, the new facility would need to be located near the existing refueler parking area along North Aderholt Loop. The proposed 4,250-ft^2 Refueler Maintenance Facility would provide adequate space for refueler vehicle repair, lubrication, and inspection. This facility would replace the current Refueling Maintenance Facility (Building 326) north of North Aderholt Loop. Construction of the new Refueler Maintenance Facility would occur between 2025 and 2026.

Additional Project-Specific Selection Standards:

Selection Standard C13-A: The proposed Refueler Maintenance Facility must meet AFI 91-203.

Selection Standard C13-B: The facility must be sited in a suitable location that provides immediate access to the flightline to meet aircraft response times.



Data Source: Cannon AFB Aerial Imagery 2015

Figure 2-10. Site of Project C12: SOF Simulator Facility

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified a single site east of the Main Gate meeting the selection standards (see **Figure 2-11**).

- *Alternative C13-1 (Preferred Alternative):* Under this alternative, the proposed facility would be constructed south of North Alderholt Loop just east of West Street, in a site occupied by an existing parking lot adjacent to the north of existing Building 211.
- *No Action Alternative C13:* Under the No Action Alternative, this project would not be constructed. The existing facility would continue to be used despite being over 50 years old. Maintenance of refueler vehicles at the existing facility would continue to reduce mission efficiency. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: No other sites available for development were identified that meet the selection standards for this project.

2.3.2 Infrastructure Improvements Projects

Project I1: Reconstruct Main Gate

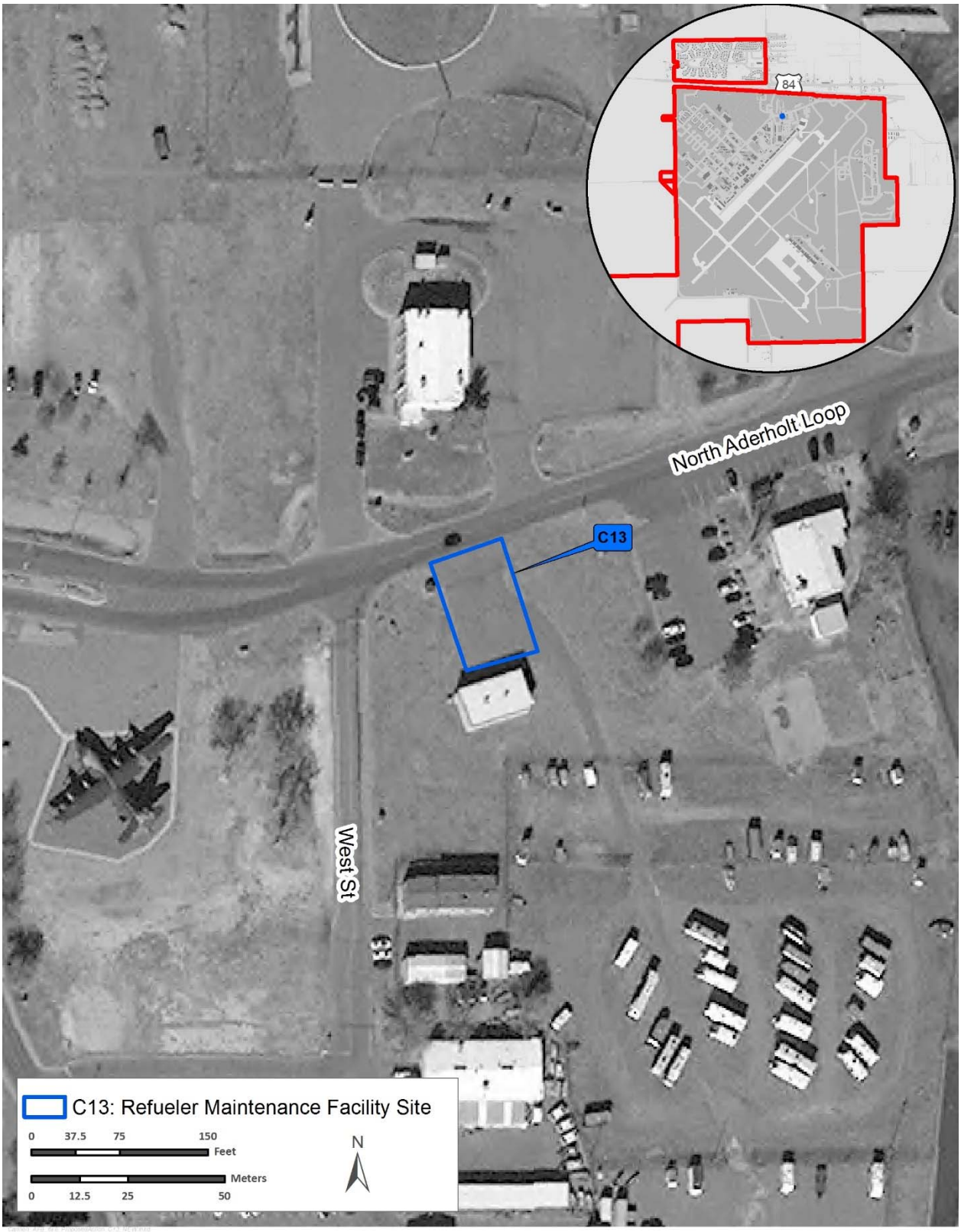
The reconstructed Main Gate would afford greater vehicle queuing and traffic calming, provide larger support facilities to accommodate visitors, and provide better separation between facilities and roadways. The 930 ft^2 of existing Main Gate facilities would be demolished and replaced with 5,000 ft^2 of new facilities, including a gatehouse complex, visitor control center, vehicle inspection facility, overwatch tower, and associated infrastructure. Demolition and construction would occur between 2020 and 2022.

Additional Project-Specific Selection Standards:

Selection Standard I1-A: The Main Gate must be reconstructed to meet current AT/FP requirements per UFC 4-010-01.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified a single site meeting the selection standards: the location of the current Main Gate (see **Figure 2-12**). Various configurations of the roadways and other infrastructure within the Main Gate site are proposed; however, all configurations would generally have the same impacts on the environment within this 11-acre site.

- *Alternative I1-1 (Preferred Alternative):* Under this alternative, the proposed gate reconstruction would occur at the location of the current Main Gate as shown in **Figure 2-12**.
- *No Action Alternative I1:* Under the No Action Alternative, this project would not be constructed. The current configuration of the Main Gate would continue to not meet AT/FP requirements, current peak and future projected traffic levels would continue to not be accommodated, and inspection facilities would continue to not support electronic infrastructure, which limits search capabilities. Safety risks to personnel and facilities on Cannon AFB would increase due AT/FP standards violations as the installation



Data Source: Cannon AFB Aerial Imagery 2015

Figure 2-11. Site of Project C13: Refueler Maintenance Facility

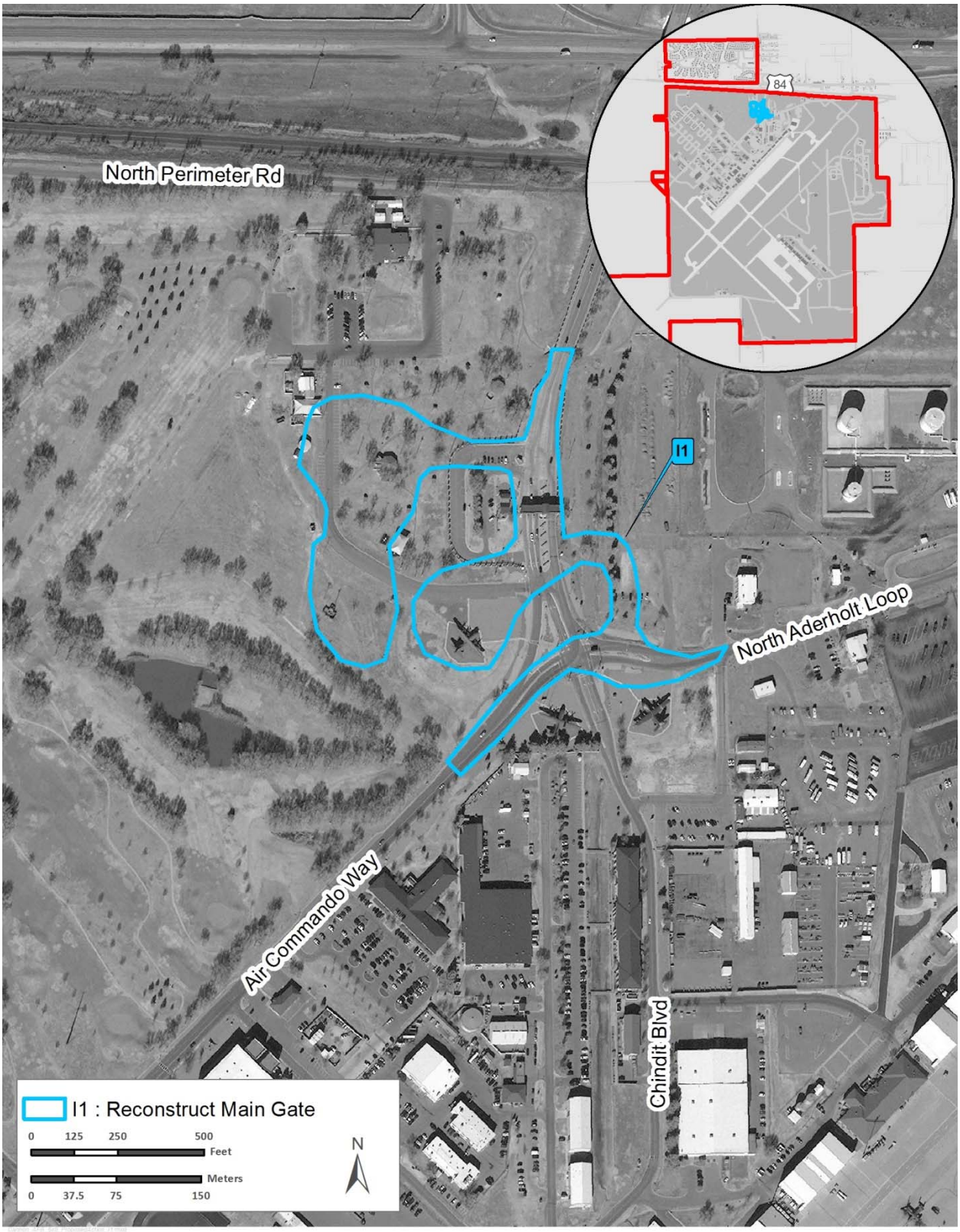


Figure 2-12. Site of Project I1: Reconstruct Main Gate

population grows. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: The presence and use of the recently constructed access overpass across U.S. Route 60/84 substantially limits the flexibility to move the Main Gate to a less constrained location. Therefore, no other alternatives were considered but eliminated from further analysis.

Project I2: Water Tower Replacement

Three water towers used for potable water on Cannon AFB (two 150,000-gallon towers and one 250,000-gallon tower) would be replaced by one 600,000-gallon capacity, 155-foot water tower. The current towers (Buildings 1895, 1896, and 1897 along Eagle Claw Boulevard) are over 50 years old and are no longer capable of meeting installation fire suppression requirements. The proposed single water tower would be able to maintain the required flow and pressure (65 pounds per square inch) for fire protection and supply water to the installation without the need for booster pumps to individual buildings. This would also eliminate the need for electrical generators and fuel storage tanks to power the pumps. Construction would occur between 2019 and 2020.

Additional Project-Specific Selection Standards:

Selection Standard I2-A: The Water Tower Replacement project must meet the criteria outlined in Air Force Handbook 32-1084, *Facility Requirements*.

Alternatives Considered for this Project: After reviewing the available alternatives, Cannon AFB identified a single site meeting the selection standards along Eagle Claw Boulevard (see **Figure 2-13**).

- *Alternative I2-1 (Preferred Alternative):* Under this alternative, the proposed Water Tower Replacement would occur along Eagle Claw Boulevard between Urgent Fury Boulevard and Just Cause Way.
- *No Action Alternative I2:* Under the No Action Alternative, this project would not be constructed. Booster pumps and their associated infrastructure would continue to be required to maintain sufficient water pressure throughout the installation. This would increase maintenance needs, reduce available space, and increase fuel requirements for the installation. This does not support the purpose of and need for installation development, as discussed in **Sections 1.2** and **1.3**, or the purpose of and need for the project identified in **Section 1.4**.

Alternatives Considered but Eliminated from Further Analysis: No other sites available for development were identified that meet the selection standards for this project. The only location for the water tower that would meet Selection Standard 2 (based on existing infrastructure locations, land use planning, and sizing) is the site of the current water towers.

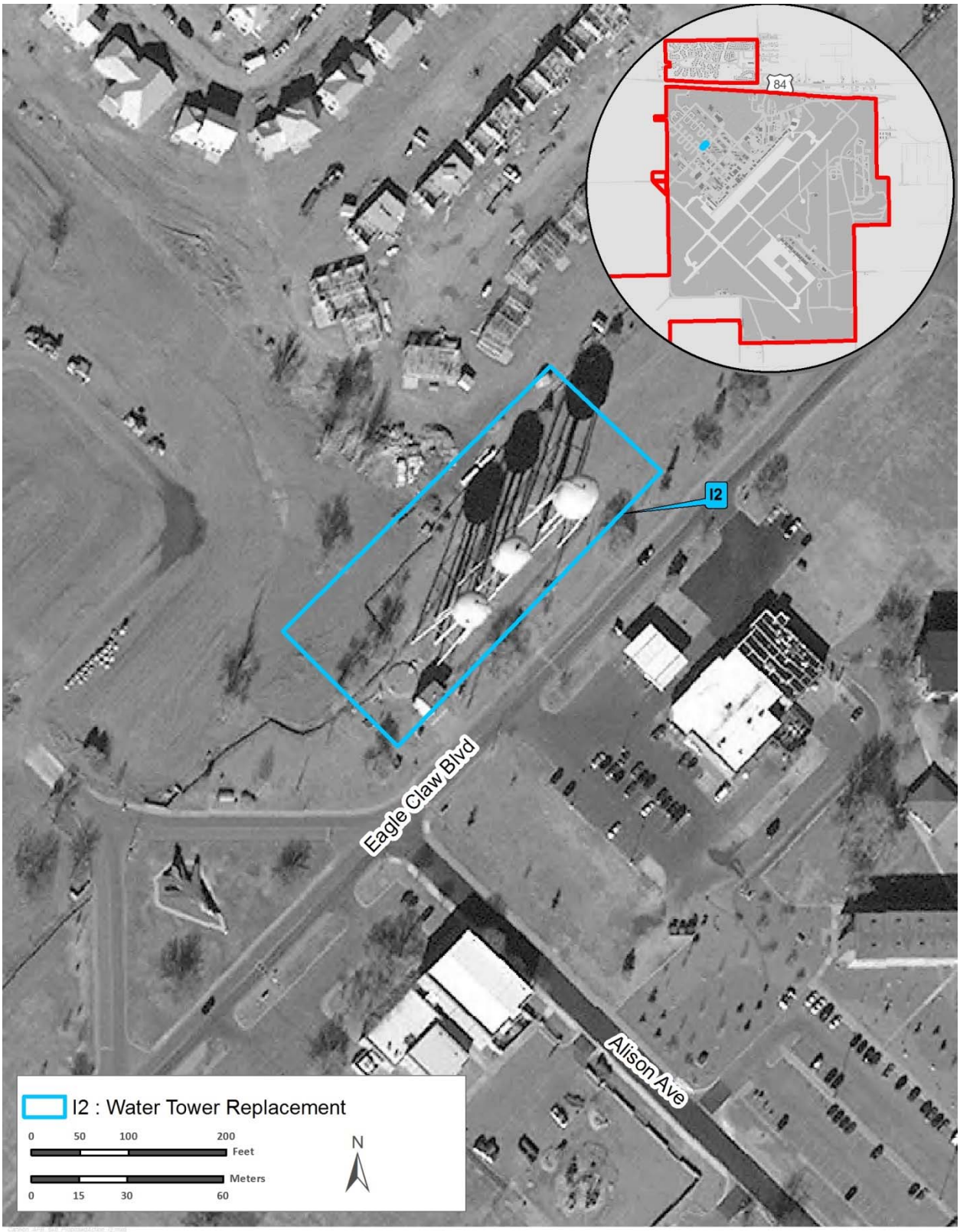


Figure 2-13. Site of Project I2: Water Tower Replacement

2.3.3 Facility Demolition Projects

There are 39 facilities throughout Cannon AFB that no longer meet mission requirements, are no longer in use, or do not meet AT/FP criteria. These facilities would be demolished to reduce infrastructure management costs by diverting resources away from excess, obsolete, or underused facilities. A detailed list of these proposed demolition projects are presented in **Table 2-1**, and the project locations are shown in **Figure 2-14**.

Table 2-1. List of Proposed Demolition Projects

Project ID	Building Number	Units	Year Built	Description	Reason for Disposal	Covered Under Construction Project
Fiscal Year 2018						
D1	1162	250 ft^2	1974	Support Storage for Building 1156 (Dormitory)	Scheduled for replacement.	No
D2	1154	514 ft^2	1991	Support Storage for Building 1156	Scheduled for replacement.	No
D3	1163	231 ft^2	1974	Support Storage for Buildings 1158/1160 (Dormitories)	Scheduled for replacement.	No
D4	375	1 kg/m^3	1968	Oil/water separator (OWS) at Vehicle Maintenance Facility	The OWS, which has a capacity to treat an oil density of less than 1 kg/m^3, is no longer in use.	No
D5	1801	3,780 ft^2	1968	Lodging Support	Scheduled for replacement.	C7
D6	4029	2,847 linear feet	1943	Steam Heat Mains	No longer meet mission requirements because of age.	No
D7	150	9,900 ft^2	1967	318th SOF Squadron Operations Facility	Scheduled for replacement.	No
D8	1399	288 ft^2	1984	Medical Warehouse	Scheduled for replacement.	No
D9	1397	950 ft^2	1987	Ambulance Shelter	Scheduled for replacement.	No
D10	133	32,754 ft^2	1993	MADF Hangar	Scheduled for replacement.	C5/C11
D11	2304	240 ft^2	1993	Traffic Check House	Does not meet AT/FP standards; scheduled for replacement.	No
D12	2311	5,200 ft^2	2010	Traffic Check House	Does not meet AT/FP standards; scheduled for replacement.	No
D13	2209	678 ft^2	1987	Visitor Control Center	Does not meet AT/FP standards; scheduled for replacement.	I1

Project ID	Building Number	Units	Year Built	Description	Reason for Disposal	Covered Under Construction Project
Fiscal Year 2018 (continued)						
D14	2220	250 ft^2	2004	Traffic Check House	Does not meet AT/FP standards; scheduled for replacement	I1
D15	2310	256 ft^2	2012	CATM Dust Control Maintenance Building	Scheduled for replacement	C1
D16	2312	3,350 ft^2	1961	General Purpose Small Arms Range	Scheduled for replacement	C1
D17	2313	3,315 ft^2	2005	Pad for Purchased Storage Building	Scheduled for replacement	C1
D18	2314	1,677 ft^2	2005	CATM Auxiliary Building	Scheduled for replacement	C1
D19	2315	2,667 ft^2	1986	CATM Maintenance Building	Scheduled for replacement	C1
D20	2317	70,000 ft^2	1986	Skeet Range	Scheduled for replacement	C1
D21	6012	91,500 ft^2	1956	Compass Calibration Pad	No longer required for mission	C1
D22	2318	756 ft^2	1994	Rod and Gun Club	Scheduled for replacement	C1
Fiscal Year 2019						
D23	620	32,474 ft^2	1961	Deployment Processing Facility	Scheduled for replacement	C6
D24	130	16,615 ft^2	1960	Explosive Ordnance Disposal Facility	Scheduled for replacement	No
Fiscal Year 2020+						
D25	215	11,387 ft^2	1960	Defense Reutilization Marketing Office/ Honor Guard/ Lighthouse	No longer meets mission requirements because of age	C8
D26	1254	16,734 ft^2	1958	Airmen Leadership School	Scheduled for replacement	C2
D27	76	8,181 ft^2	1976	Thrift Shop	No longer meets mission requirements because of age	No
D28	1	14,815 ft^2	1960	Wing HQ	Scheduled for replacement	C9
D29	60	11,643 ft^2	1962	Law Center	Scheduled for replacement	C9
D30	335	9,620 ft^2	1955	Vehicle Maintenance Facility	Scheduled for replacement	C8
D31	375	9,058 ft^2	1968	Vehicle Maintenance Facility	Scheduled for replacement	C8
D32	379	13,426 ft^2	1965	Vehicle Maintenance Facility	Scheduled for replacement	C8
D33	438	5,848 ft^2	1990	Vehicle Operations Parking Shed	Scheduled for replacement	C8

Project ID	Building Number	Units	Year Built	Description	Reason for Disposal	Covered Under Construction Project
Fiscal Year 2020 (continued)						
D34	226	3,971 ft^2	1985	Base Engineer Warehouse	Scheduled for replacement	C8
D35	227	2,320 ft^2	1990	Base Engineer Storage Facility	Scheduled for replacement	C8
D36	198	27,580 ft^2	1991	20th SOF Squadron Operations Facility	Scheduled for replacement	C10
D37	202	1,124 ft^2	1953	Hazardous Materials Storage Facility	Scheduled for replacement	C10
D38	218	250 ft^2	1981	Liquid Oxygen Storage Facility	Scheduled for replacement	C10
D39	229	846 ft^2	1992	Aircraft Maintenance Shop	Scheduled for replacement	C10

Key: kg/m^3 = kilogram/cubic meter

2.4 Summary of Proposed Activities

Implementing the projects described in **Table 2-1** that total approximately 1,226,000 ft^2 of new facilities, site improvements, and new pavements would result in an anticipated increase of approximately 1,156,000 ft^2 of impervious surfaces that would be added over the next 5 to 10 years (2018 to 2028). Infrastructure upgrades and improvements could disturb as much as 550,000 ft^2 of area but would only increase impervious surfaces by 10,000 ft^2.

There would also be approximately 415,000 ft^2 of demolished buildings at Cannon AFB, resulting in a decrease of impervious surfaces of approximately 174,000 ft^2. Altogether, these projects would result in a total net increase of 991,500 ft^2 of impervious surfaces. **Table 2-2** summarizes the anticipated project areas and changes in impervious surfaces from the selected projects under the Proposed Action.

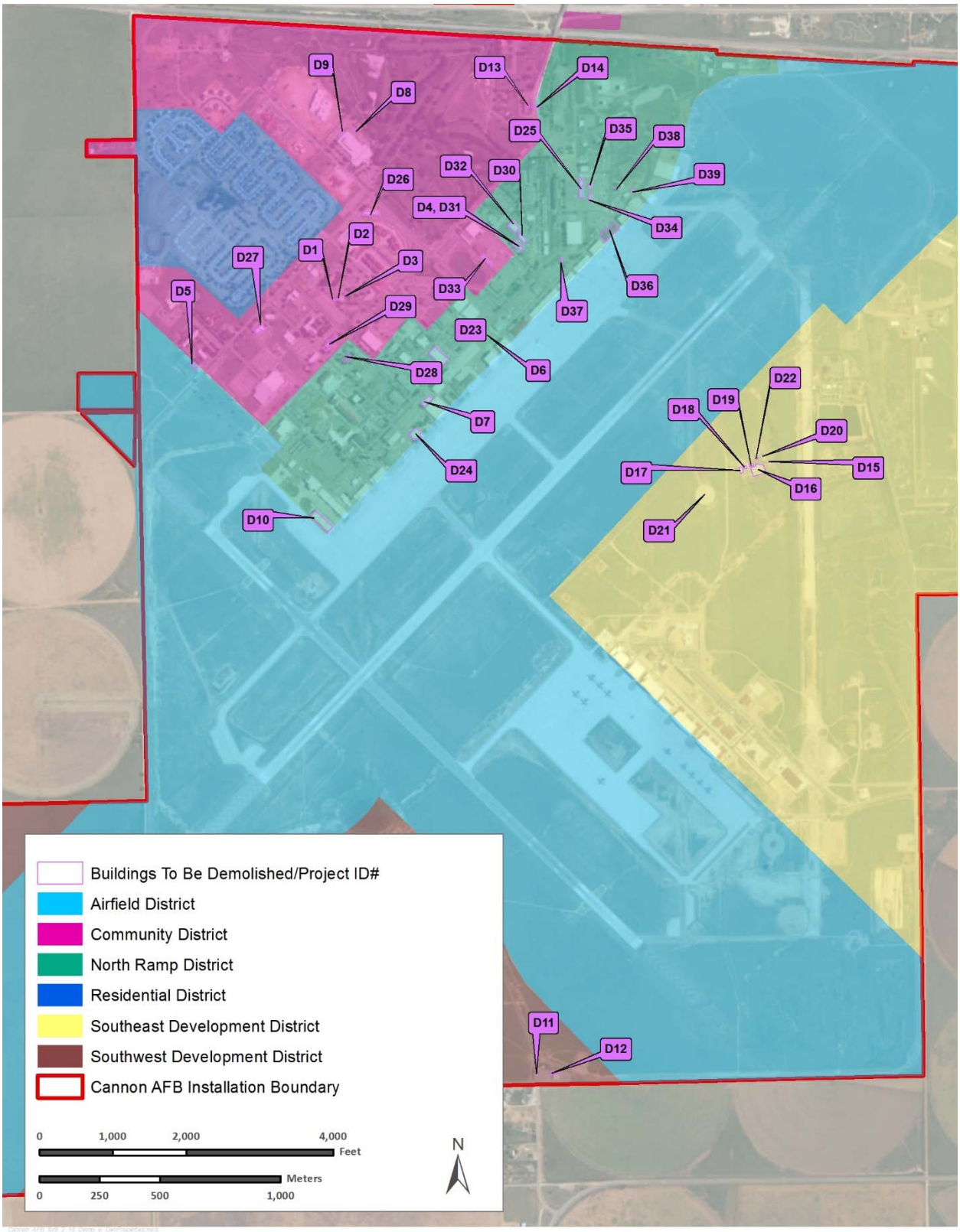
Table 2-2. Project Area and Change in Impervious Surfaces

Project Type	Total Project Area (ft^2)	Change in Impervious Surface (ft^2)
Construction	1,226,000	1,156,000
Infrastructure Improvements	550,000	10,000
Demolition	415,000	-174,500
Total	2,191,000	991,500

Note: Changes in impervious surfaces are not necessarily equivalent to the project area square footage because some facilities proposed for demolition are multiple stories, and many new facilities would be multiple stories. Furthermore, some infrastructure improvement projects would disturb an area but not add impervious surfaces. Additionally, not all demolition projects would result in a change in impervious surface because the sites of some would be redeveloped.

2.5 Identification of the Preferred Alternative

The Preferred Alternative is to implement each of the proposed installation development projects at their preferred site as identified in **Section 2.3**.



Data Source: Cannon AFB Aerial Imagery 2015

Figure 2-14. Proposed Demolition Projects

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3. Affected Environment

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

3.1 Noise

3.1.1 Definition of Resource

Noise is defined as any undesirable sound that interferes with communication, poses a threat to human health, or is irritating. Human response to noise is dependent upon the source, characteristics of the sound source, the distance between the source and the receptor, sensitivity of the receptor, and the time of day. A sensitive receptor could be a specific location (e.g., schools, churches, or hospitals) or an expansive area (e.g., nature preserves, historic preservation districts) in which occasional or persistent sensitivity to noise above ambient levels exists. Noise is often generated by activities essential to a community's quality of life, such as construction or vehicular traffic.

Noise Metrics. Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. Within the range of human hearing, a sound may vary in intensity by more than one million units. A logarithmic scale is used to compress the range of audible decibels into a more manageable form so that noise can be quantified. The dBA is used to characterize sound levels that can be sensed by the human ear. The lower threshold of audibility is generally within the range of 10 to 25 dBA for normal hearing. The upper threshold is 135 dBA and can be painfully loud (USEPA 1981). Some common noise sources and their dBA levels are presented in **Table 3-1**. Sound pressure level generally decreases by 6 dB for every doubling of distance. Therefore, a noise that is 80 dBA at 50 feet from the source is approximately 74 dBA at 100 feet and 68 dBA at 200 feet.

Table 3-1. Estimated Background Noise Levels

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

Source: Harris 1998

The sound pressure level noise metric describes steady noise levels, although very few noises are constant; therefore, additional noise metrics have been developed to describe noise. The DNL averages the sum of all noise-producing events over a 24-hour period with a 10 dBA penalty added to nighttime events (between 10:00 pm and 7:00 am) to account for the drop in community background noise during this period. DNL is a useful descriptor for noise because it averages ongoing yet intermittent noise, measures total sound energy over a 24-hour period, and correlates well with levels of community annoyance (HMMH 2009).

Most people are exposed to sound levels of 50 to 55 dBA or higher on a daily basis. Studies specifically conducted to determine noise effects on various human activities show that about 90 percent of the population is not significantly bothered by outdoor sound levels below a DNL of 65 dBA (FICON 1992). Studies of community annoyance in response to numerous types of environmental noise show that DNL correlates well with effect assessments and that there is a consistent relationship between DNL and the level of annoyance.

Regulatory Setting. The Noise Control Act of 1972 serves "to promote an environment for all Americans free from noise that jeopardizes their public health and welfare" (42 USC § 4901). Noise can have adverse effects on physical (hearing loss and other physiological responses), psychological (sleep disturbance and performance interference), and social (communication interference) relationships (USEPA 1981). According to Federal Aviation Administration and U.S. Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are "clearly unacceptable" in areas where the DNL noise exposure exceeds 75 dBA, and "normally acceptable" in areas exposed to noise of 65 dBA or less (24 CFR § 51). Areas that experience noise above 65 dBA and below 75 dBA are identified as "normally unacceptable."

USAF administers the AICUZ program to "promote compatible land development in areas subject to aircraft noise and accident potential". In Accordance with AFI 32-7063, *Air Installation Compatible Use Zone Program*, AICUZ studies are made available to local communities to assist them in preparing local land use plans. As part of AICUZ studies, USAF installations identify noise contours related to aircraft operations; generally, the contours are mapped at 5 dB intervals between 65 dBA and 80 dBA (CAFB 2005a). An AICUZ study is underway, which is updating modeling of aircraft types, flight times, and flight operations at the installation (CAFB 2017a).

Construction Noise. Noise levels caused by construction have potential to quickly surpass ambient sound levels. The type and intensity of the sound is dependent upon the type of construction or demolition activity taking place. The predicted noise levels for various construction equipment that could be used during the Proposed Action are presented in **Table 3-2**.

3.1.2 Affected Environment

Cannon AFB is located in rural west New Mexico near the Texas border, 7 miles west of Clovis, New Mexico. The ambient noise environment around Cannon AFB is affected mainly by military aircraft operations. Noise from these operations typically occurs beneath main approach and departure corridors and in areas immediately adjacent to runways, parking ramps, and aircraft

Table 3-2. Predicted Noise Levels for Typical Construction Equipment

Construction Equipment	Predicted Noise Level at 50 feet (dBA)	Predicted Noise Level at 500 feet (dBA)	Predicted Noise Level at 1,000 feet (dBA)
Clearing and Grading			
Bulldozer	80	60	54
Grader	80–93	60–73	54–67
Truck	83–94	63–74	57–68
Excavation			
Backhoe	72–93	52–73	46–67
Jackhammer	81–98	61–78	55–72
Building Construction			
Concrete mixer	74–88	54–68	48–62
Welding generator	71–82	51–62	45–56
Pile driver	91–101	71–85	65–78
Crane	75–87	55–67	49–61
Paver	86–88	66–68	60–62

Source: USEPA 1971

staging areas. As aircraft take off and gain altitude, their contribution to the noise environment drops to levels indistinguishable from the background.

Typical ambient sound levels on the installation have not been measured, but would be expected to be comparable to sound levels in other lightly populated areas in the western U.S. Natural sounds such as wind and birdcalls are the dominant source of sound in geographically remote settings such as the area surrounding Cannon AFB. Civilian and military aircraft overflights occur in designated flight corridors and training areas as well as outside of these designated locations.

The types of aircraft used on Cannon AFB over the last decade have changed, which has altered the noise contours since the last completed AICUZ Study in 2005. Noise modeling conducted in 2016 show that 3,775 acres of the installation are within the 65 dBA DNL noise contour (CAFB 2017a). Projects C2, C8, C9, C10, C11, C12, C13, I1, I2, all of the demolition projects, and a portion of Project C1 occur within the 65 dBA DNL noise contour. Projects C3, C4, C5, C6, C7, and a portion of project C1 occur outside the 65 dBA DNL noise contour (see **Figure 2-1**). Projects I2, C2, and C7 are within the Community District and are the closest projects to the adjacent to the Residential District (see **Figure 1-2**). There are also scattered rural residential areas outside the installation. These areas are likely to have greater impacts from increases in noise because they are noise-sensitive areas.

3.2 Air Quality

3.2.1 Definition of Resource

In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant

sources in an area, but also surface topography, the size of the topological "air basin," and the prevailing meteorological conditions.

Ambient Air Quality Standards. Under the CAA, the U.S. Environmental Protection Agency (USEPA) developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM_{10}] and particulate matter equal to or less than 2.5 microns in diameter [$PM_{2.5}$]), and lead (Pb) (40 CFR § 50). The CAA also gives the authority to states to establish air quality rules and regulations. The State of New Mexico has not adopted the NAAQS but has promulgated its own ambient air quality standards that are presented in **Table 3-3** along with the NAAQS.

Attainment Versus Nonattainment and General Conformity. USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either "attainment," "nonattainment," "maintenance," or "unclassified" for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and an unclassified air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment. USEPA has delegated the authority for ensuring compliance with the NAAQS in New Mexico to the New Mexico Environment Department (NMED), Air Quality Bureau. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS and state ambient air quality standards.

The General Conformity Rule applies only to significant actions in nonattainment or maintenance areas. This rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

Federal Prevention of Significant Deterioration. Federal Prevention of Significant Deterioration (PSD) regulations apply in attainment areas to a major stationary source, i.e., a source with the potential to emit 250 tons per year (tpy) of any criteria pollutant (or 100 tpy for certain types of facilities), and a significant modification to a major stationary source, i.e., a change that adds 0.6 to 40 tpy to the major stationary source's potential to emit depending on the pollutant. Additional PSD major source and significant modification thresholds apply for greenhouse gases (GHGs), as discussed in the *Greenhouse Gas Emissions* subsection below. PSD permitting can also apply to a proposed project if all three of the following conditions exist: (1) the proposed project is a modification with a net emissions increase to an existing PSD major source, (2) the proposed project is within 10 kilometers of national parks or wilderness

Table 3-3. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	Primary Standard		Secondary Standard	Form
		Federal	New Mexico		
CO	8-hour	9 ppm (10 mg/m^3)	8.7 ppm	None	Not to be exceeded more than once per year
	1-hour	35 ppm (40 mg/m^3)	13.1 ppm	None	Not to be exceeded more than once per year
Pb	Rolling 3-Month Average	0.15 µg/m^3	None	Same as Primary	Not to be exceeded
NO_2	Annual	53 ppb (1)	50 ppb	Same as Primary	Annual Mean
	1-hour	100 ppb	None	None	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	24-hour	None	0.10 ppm	None	24-hour mean
Total Suspended Particulate	Annual	None	60 µg/m^3	None	Annual geometric mean
	30-day	None	90 µg/m^3	None	30-day average
	7-day	None	110 µg/m^3	None	7-day average
	24-hour	None	150 µg/m^3	None	24-hour average
PM_{10}	24-hour	150 µg/m^3	None	Same as Primary	Not to be exceeded more than once per year on average over 3 years
$PM_{2.5}$	Annual	12 µg/m^3	None	15 µg/m^3	Annual Mean, averaged over 3 years
	24-hour	35 µg/m^3	None	Same as Primary	98th percentile, averaged over 3 years
O_3	8-hour	0.070 ppm (2)	None	None	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
SO_2	3-hour	None	None	0.5 ppm	Not to be exceeded more than once per year
	1-hour	75 ppb	None	None	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	24-hour	None	0.10 ppm	None	24-hour mean
	Annual	None	0.02 ppm	None	Annual Mean

Sources: USEPA 2014a, NMAC 20.2.3

(1) The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(2) Final rule signed October 1, 2015, and effective December 28, 2015; however, implementation of the 2015 standard is delayed. The previous (2008) O_3 standard (0.075 ppm) remains in effect. Key: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter.

areas (i.e., Class I Areas), and (3) regulated stationary source pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 milligram per cubic meter (mg/m^3) or more (40 CFR § 52.21[b][23][iii]). A Class I area includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments, limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's Class designation (40 CFR § 52.21[c]).

Title V Requirements. Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A Title V major source has the potential to emit

criteria air pollutants and hazardous air pollutants (HAP) at levels equal to or greater than Major Source Thresholds. Major Source Thresholds vary depending on the attainment status of an ACQR. In attainment areas, the Title V thresholds are 100 tpy for any criteria pollutant, i.e., nitrogen oxides (NO_x), CO, volatile organic compounds (VOCs), PM_{10}, $PM_{2.5}$, and SO_2, or 25 tpy for all HAP combined, or 10 tpy for any individual HAP. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality. Section 112 of the CAA lists HAPs and identifies source categories of HAPs that are required to have source specific requirements for limiting HAP emissions.

Greenhouse Gas Emissions. GHGs are gaseous emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The most common GHGs emitted from human activities include carbon dioxide (CO_2), methane, and nitrous oxide. GHGs are primarily produced by the burning of fossil fuels and through industrial and biological processes. Scientific evidence indicates a trend of increasing global temperature over the past century because of an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative environmental, economic and social consequences across the globe.

Guidance from the White House CEQ, dated August 1, 2016, recommends that agencies consider both the potential impacts of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental impacts of a proposed action. The guidance also emphasizes that agency analyses should be commensurate with projected GHG emissions and climate impacts, and should employ appropriate quantitative or qualitative analytical methods to ensure useful information is available to inform the public and the decision-making process in distinguishing between alternatives and mitigations. Although the final CEQ guidance does not include it, the draft CEQ guidance recommended that agencies consider an increase of 27,563 tons (25,000 metric tons) of CO_2e (carbon dioxide equivalent) emissions on an annual basis from a proposed action as a reference point below which a quantitative analysis of GHG is not recommended unless it is easily accomplished based on available tools and data (CEQ 2016). For this EA, a more appropriate level of 75,000 metric tons per year (mtpy) increase in CO_2e emissions has been used. This level is used under the USEPA PSD permitting program for assessing whether GHG best available control technology would be required to be implemented for modifications to stationary sources that also exceed the 250 tpy for criteria pollutants (USEPA 2014b). Although the 75,000 mtpy increase under the PSD regulatory program only applies to stationary sources, it is being applied to both stationary and mobile sources in this EA as a potential indicator of significance.

EO 13783, *Promoting Energy Independence and Economic Growth,* signed on March 28, 2017, required the CEQ to rescind its guidance regarding GHG emissions and climate change. On April 5, 2017, the CEQ rescinded this guidance; however, discussion of GHG emissions and climate change has been included in this EA because of ongoing and potential litigation and liability regarding this subject.

3.2.2 Affected Environment

Cannon AFB is located in Curry County, New Mexico, which is within the Pecos-Permian Basin Intrastate (PPBI) AQCR (AQCR 155). The PPBI AQCR also includes the New Mexico counties of Chaves, De Baca, Eddy, Lea, Quay, and Roosevelt (40 CFR § 81.242). Curry County has been designated as unclassified/attainment for all criteria pollutants (40 CFR § 81.332). According to the NMED map of New Mexico's Class I Areas, no Class I areas are within 6.2 miles of Cannon AFB (NMED 2017a).

The most recent emissions inventory for Curry County (2014) is shown in **Table 3-4** because no air emissions inventory data are currently available for the PPBI AQCR. O_3 is not a direct emission as it is generated from reactions of VOCs and NO_x, which are precursors to O_3. Therefore, for the purposes of this air quality analysis, VOCs and NO_x emissions are used to represent O_3 generation.

Table 3-4. CY2016 Cannon AFB and CY2014 Curry County Air Emissions Inventories (AEIs) and Cannon AFB Title V Permit Limits

Source Name/Type	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	CO_2e (tpy)
Cannon AFB							
Stationary Sources (CY2016 AEI)	15	16	8	0	1	1	8,652
Title V Permit Limits (Stationary Sources)	140.0	118.8	75.2	10.2	8.1	8.1	None
Curry County, New Mexico (2014)							
Stationary sources	269.20	227.49	458.85	17.19	65.55	56.64	Not Available
Area sources	1,001.73	8,000.30	2,525.96	0	9,184.38	1,112.19	Not Available
Mobile sources	2,721.85	601.34	5,219.83	23.79	125.75	93.29	293,656.21
Total	**3,992.78**	**8,829.13**	**8,204.64**	**40.99**	**9,375.68**	**1,262.12**	**293,656.21**[a]
Cannon AFB (CY2016 AEI) Percent of Curry County Total Inventory (CY2014)	***0.38%***	***0.18%***	***0.01%***	***0.0%***	***0.01%***	***0.08%***	***NA***

Sources: NMED 2017b, USEPA 2014c

[a] GHG emissions (CO_2e) from stationary and area sources are not available at a county level and total GHG emissions for Curry County are incomplete.

Cannon AFB has a Title V Air Operating Permit, No. P119, under New Mexico Administrative Code (NMAC) 20.2.70. This permit is based on the criteria pollutant emission limits for stationary sources shown in **Table 3-3**. Stationary sources regulated in this permit consist of fuel combustion sources for heating and emergency power generation and an aircraft paint booth (CAFB 2015a). **Table 3-4** summarizes Cannon AFB's actual air emissions in 2016 and provides a percent of total reported 2014 Curry County emissions.

3.3 Land Use

3.3.1 Definition of Resource

"Land use" refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in master planning and local zoning laws. Land use planning ensures orderly growth and compatible uses among adjacent property parcels or areas. However, no nationally recognized convention or uniform terminology for describing land use categories exists. As a result, the meanings of various land use descriptions, labels, and definitions vary among jurisdictions. Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. A wide variety of land use categories result from human activity. Descriptive terms for human activity land uses generally include commercial, industrial, military, residential, agricultural, institutional, transportation, communications and utilities, and recreational.

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

3.3.2 Affected Environment

Cannon AFB is in Curry County, New Mexico, which is one of the smallest counties in the state with a land area of approximately 1,406 square miles (Curry County 2017a). Municipalities located in Curry County are Clovis (the county seat; approximately 5 miles east of Cannon AFB), Melrose (approximately 20 miles west of Cannon AFB), and Texico (approximately 16 miles east of Cannon AFB).

On Installation. Land uses on the installation describe typical functional use that is consistent with aircraft operations, maintenance, and mission support. Generally, land use patterns have been grouped to collocate functional similarities and/or compatibilities that best serve the mission. **Table 3-5** lists the land designations and associated land uses on the installation.

Two runways (i.e., Primary Runway 04/22 and Alternate Runway 13/31) are the center of physical development on the installation (CAFB 2016a). Aircraft operations and maintenance functions are located adjacent to the flightline because of required direct interaction with airfield functions. Industrial functions that support both airfield and installation activities are appropriately segregated. All other land uses that support mission operations and the personnel who accomplish the mission are removed from primary imaginary surface areas (i.e., areas immediately underlying approach and departure areas along runways) and high noise levels generated by flightline operations. The Cannon AFB IDP identifies six planning districts and 12 land use categories on the installation (see **Figure 3-1**). The planning districts were formed based on established land-use patterns and relationships to existing transportation networks to help define future planning areas and, where appropriate, focus future analyses or

Table 3-5. Land Use Categories and Example Land Uses on Cannon AFB

Land Use Categories	Land Use(s)
Airfield	Runways; landing and takeoff operations
Aircraft Operations & Maintenance	Hangars; squad operations; control towers, air passenger terminal
Community (Commercial)	Installation exchange and commissary
Community (Service)	Fitness center, child development center, recreation and community center
Firing Range	Gunfire activities
Housing Area Accompanied	Family housing
Housing Area Unaccompanied	Multistory residential buildings, dormitories
Industrial Area	Warehouse; liquid fuel systems, maintenance, vehicle maintenance and storage
Medical Area	Installation hospital, clinic, dental services, flight medicine and pharmacy
Open Area	Undeveloped land that is available for development
Outdoor Recreation Area	Park spaces, trails, picnic areas
Water	Stream, pond, lake

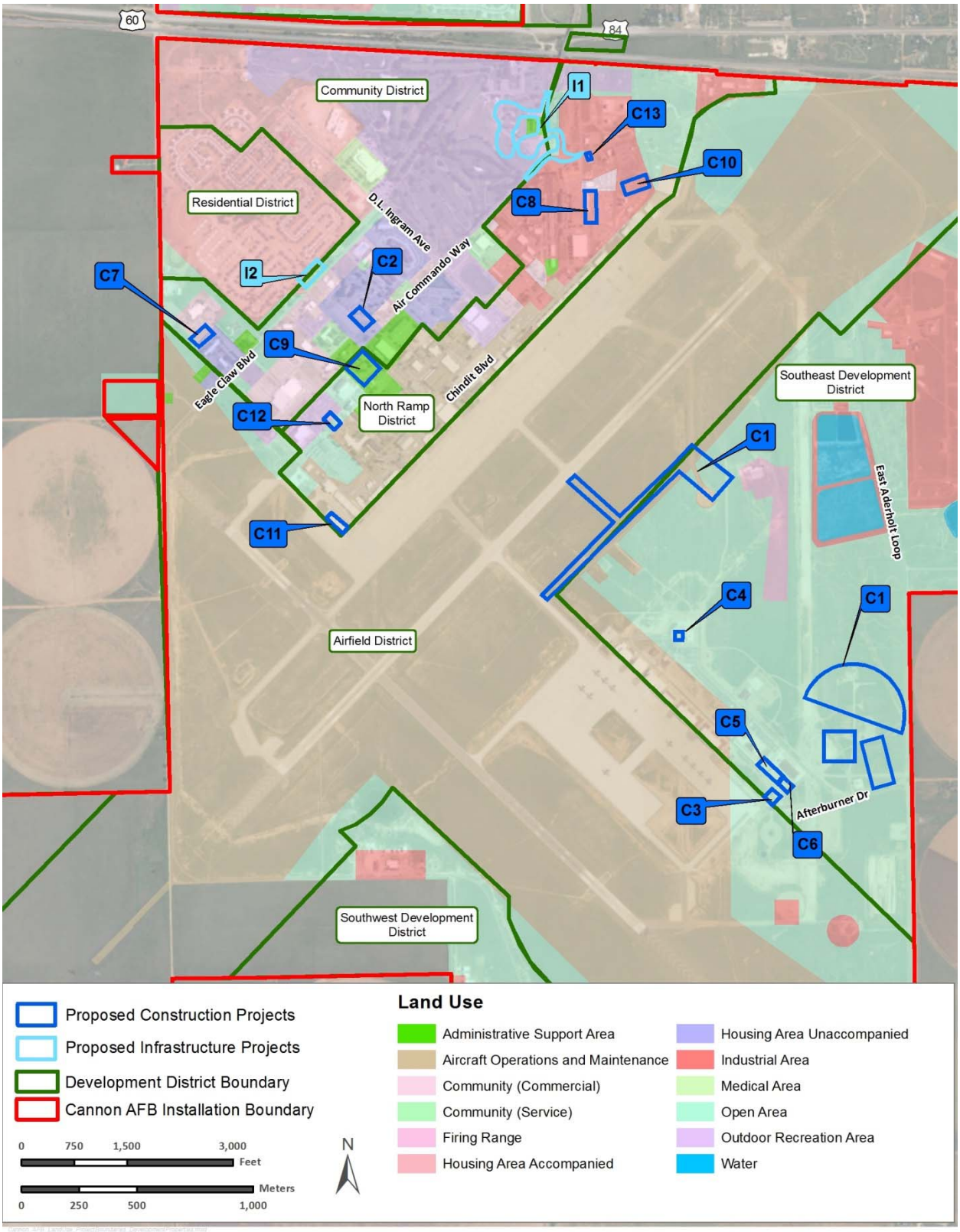
Source: CAFB 2016a

development studies. Existing land uses describe the typical functional use in generalized parcels.

Table 3-6 lists the existing land uses and land use constraints associated for each construction and infrastructure project. The proposed demolition projects are in the following planning districts and land use designations as also shown on **Figure 3-2**:

- **Community Development District**
  - Unaccompanied Housing Land Use: D1, D2, D3, D5, and D26
  - Medical Land Use: D8 and D9
  - Administrative Support Land Use: D13 and D14
  - Industrial Land Use: D25
  - Community (Commercial) Land Use: D27, D28, and D29
- **North Ramp Development District**
  - Industrial Land Use: D4, D30, D31, D32, D33, D34, D35, D36, D37, D38, D39
  - Aircraft Operations and Maintenance Land Use: D6, D7, D10, D23, and D24
- **Southeast Development District**
  - Firing Range Land Use: D15, D16, D17, D18, D19, D20, and D22.
  - Aircraft Operations and Maintenance Land Use: D21
- **Southwest Development District**
  - Administrative Support Area Land Use: D11 and D12

Off-Installation. Land uses around Cannon AFB primarily consist of agricultural lands, with the most development occurring in and around the municipalities within Curry County. There is little development around the main installation; however, the potential for incompatible land uses still exist. The greatest identified incompatible development is the sparsely populated residential/commercial area, which underlies the APZs near the northeast and southwest



Data Source: World Imagery, Cannon AFB GIS 2017

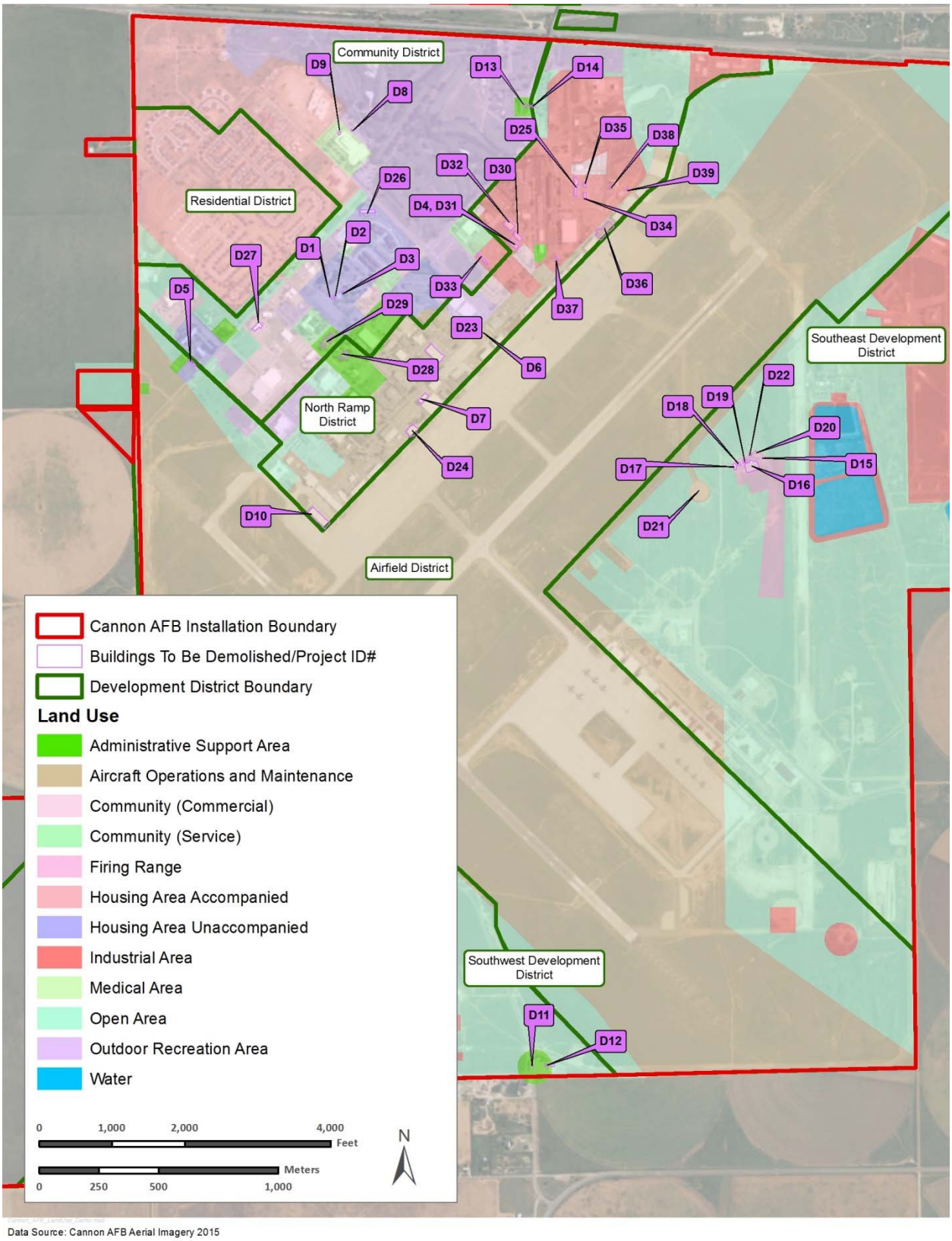
Figure 3-1. Land Use and Proposed Facility Construction and Infrastructure Improvement Projects on Cannon AFB

Table 3-6. Existing Planning District, Land Use Designation, and Land Use Constraints Associated with Proposed Facilities per Project Alternative

Project Alternative ID	Planning District *(see Figure 1-2)*	Land Use Designation	Land Use Constraint *(see Figure 2-1)*
C1-1*	Southeast Development District (western border)	Open Area	ESQD arc 65 dBA noise contour 100-year floodplain ERP Site: AOC E
C1-2*	Southeast Development District (southern portion)	Open Area	None
C2	Residential District (southeast portion)	Housing Area-Accompanied	65 dBA noise contour
C3*	Southeast Development District (southern portion)	Open Area	100-year floodplain.
C4*	Southeast Development District (southwest portion) of the	Open Area	None
C5*	Southeast Development District (southern portion)	Open Area	100-year floodplain
C6*	Southeast Development District (southern portion)	Open Area	100-year floodplain
C7	Community District (southwest portion)	Housing-Unaccompanied	None
C8-1	North Ramp District (north central portion)	Industrial	65 dBA noise contour 100-year floodplain
C8-2	North Ramp District (north central portion)	Industrial	65 dBA noise contour 100-year floodplain
C9-1	North Ramp District (southwest portion)	Administrative	65 dBA noise contour
C9-2	North Ramp District (southwest portion)	Administrative	65 dBA noise contour
C10-1	North Ramp District (northeast portion)	Industrial	65 dBA noise contour
C10-2*	North Ramp District (central portion)	Open Area	65 dBA noise contour
C11-1	North Ramp District Project (southwest corner)	Aircraft Operations and Maintenance Facilities	65 dBA noise contour
C11-2	North Ramp District (southwest portion)	Air Operations and Maintenance Facilities	65 dBA noise contour
C12*	North Ramp District (northwest corner)	Open Area	65 dBA noise contour
C13	North Ramp District (northwest portion)	Industrial	65 dBA noise contour
I1	Community District (north end)	Open Area	65 dBA noise contour
I2	Community District (southeastern border)	Industrial	65 dBA noise contour

Source: CAFB 2016a

Note: (*) indicates that the proposed functional land use would be incompatible or otherwise inconsistent with the existing land use designation of Open Area and the site would require a land use designation change.



Data Source: Cannon AFB Aerial Imagery 2015

Figure 3-2. Land Use and Proposed Demolition Projects on Cannon AFB

boundaries of the installation. The land immediately surrounding Cannon AFB is unincorporated land that is used for irrigated farmland and grassland (CAFB 2005a). Historically, other than farming and ranching, minimal development has occurred within this area. However, new land uses are emerging along highway frontages, including small acreages of residential ranchettes and commercial services (e.g., service stations, trailer parks, cafes, feedlot operations). Development along US Highway 60/84 is of particular interest for the installation because it is occurring in the proximity of the CZ, APZ I, and APZ II of Runway 04. Additionally, residences have been constructed within the APZs and Noise Zones for Runway 04, and are considered incompatible with the zones. There are currently no plans for additional development northeast of the installation; however there are no enforced regulations to prevent residential development from occurring within the APZ-I and APZ-II in this area. Further, there are no regulations to prevent residential development in the noise contour zones of 75 up to and greater than 90 dB DNL. To address encroachment concerns near Clovis, Cannon AFB has acquired the property contained by the CZs off the ends of Runways 04, 13 and 31 under the criteria established by the AICUZ, while much of the Runway 22 CZ is owned and controlled by the Burlington Northern & Santa Fe Railroad (CAFB 2005a).

The property surrounding the installation is managed and controlled by the Curry County Board of Commissioners (CAFB 2005a). Curry County updated its comprehensive plan in 2016, but does not currently have zoning restrictions. In an effort to address concerns about incompatible development and in support of the 2005 Cannon AFB AICUZ recommendations, Curry County adopted a zoning ordinance for the APZs in the early 1990s. However, the zoning ordinance was found to be invalid by a federal court because the County did not have a comprehensive plan at the time (CAFB 2005a). Thereafter, the County began purchasing or acquiring restrictive easements for the property contained within the APZs. The restrictive easements limit the use of the aforementioned property to compatible development as described in the 2005 AICUZ report. The restrictive easements also impose height restrictions on structures in accordance with the Airspace Control Surface Plan. Therefore, development in the areas surrounding the installation are expected to be planned and implemented in accordance with the 2005 AICUZ report and the installation's land use planning policies (CAFB 2005a). Subsequent Curry County planning documents include the *Curry County/City of Clovis Joint Action Guide* (2007), which supplemented the existing *Curry County Comprehensive Plan*, and the *Regional Growth Management Plan Guide* (2009) (Curry County 2016). These planning guides provided strategies for management of roads, land use, encroachment issues relating to Cannon AFB, water access, public services, and economic development within the county. Cannon AFB commissioned a Joint Land Use Study in 2011 to identify ways to prevent future encroachment of the military base while still protecting the rights of private landowners. The Curry County Board of Commissioners did not adopt the Joint Land Use Study. However, the County coordinates with the installation and surrounding landowners on emerging development issues (e.g., locations for new housing developments and wind farms).

Current land use regulations in the County are minimal and include the *Curry County Subdivision Ordinance*, joint use agreements with the City of Clovis and Cannon Air Force Base, and establishment of building construction standards, as authorized by the State of New Mexico. As a measure to protect private land ownership, the County maintains no zoning

restrictions that could limit development. Instead, the County remains committed to continued coordination with Cannon AFB and the surrounding municipalities to minimize encroachment concerns while meeting the needs for economic and community growth. The *Curry County Comprehensive Plan 2016* contains a land use element that identifies planning goals for management of water access, public utilities and services, infrastructure, recommendations for growth, and intentions to develop an official land use policy that would be focused on these needs. Curry County is currently conducting a land use study to identify land use planning and regulatory issues to be considered during development of its future land use policy (Curry County 2016).

3.4 Infrastructure and Transportation

3.4.1 Definition of Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as "urban" or developed. The availability of infrastructure and its capacity for expansion are generally regarded as essential to the economic growth of an area. The infrastructure components discussed in this section include airfield, transportation, utilities, and solid waste management.

The airfield includes all pavements, runways, overruns, aprons, ramps, and arm/disarm pads that are associated with aircraft maintenance and aircraft operations. Transportation includes major and minor roadways that feed into the installation and the security gates, and roadways and parking areas on the installation. Public transit, rail, and pedestrian networks are also elements of transportation. Utilities include electrical supply, liquid fuel supply, natural gas supply, water supply, sanitary sewer and wastewater systems, stormwater drainage, and communications systems. Solid waste management primarily relates to the availability of systems and landfills to support a population's residential, commercial, and industrial needs. The infrastructure information contained in this section provides a brief overview of each infrastructure component and comments on its existing general condition at the installation.

3.4.2 Affected Environment

3.4.2.1 UTILITIES

Electrical System. Cannon AFB receives electrical power from Xcel Energy. A 115-kilovolt transmission circuit terminates in the installation substation on Arcadia Street. This transmission line can be energized from either of two Xcel substations: the Clovis substation located east of the installation or the Blackwater Draw substation located south of the installation. The Blackwater Draw substation is the primary source. There are two connected circuits, one of which was designed to solely feed the Southeast Development District and another designed as a loop feed for the rest of the installation.

The primary installation distribution system consists of underground and above ground lines. Underground lines constitute 97 percent of the system and are in excellent condition. Projects are in place to convert the remaining 3 percent from overhead to underground lines (CAFB 2016a).

The current electrical system at Cannon AFB is operating at 68 percent of overall capacity. Peak electrical demand occurs during the summer and averages around 12.5 megawatts. The electrical system is adequate, with planned improvements including removing as many of the 12.4 to 4.1-kilovolt distribution substations as possible, maintaining two substations to meet the demand of the new southeast development and current installation operations, and continuing to retain growth potential and minimizing negative impacts on the mission through replacement of aging electrical system components (CAFB 2016a).

Water Supply. Cannon AFB currently relies entirely on their own sources of water. The water supply is groundwater withdrawn from the Southern High Plains Aquifer of the Ogallala Formation underlying the installation via nine production wells. Six of the production wells (PW-02, PW-03, PW-05, PW-07, PW-09, and PW-12) are exclusively dedicated to providing potable water to the water distribution system (Trinity 2012). PW-04 is exclusively a non-potable well for a pond along Air Commando Way. PW-04A is primarily a non-potable well used to replenish the golf course irrigation pond, but can be used for potable purposes. PW-08 is primarily used to provide potable water to the water distribution system, but can also be used to replenish the golf course pond as required (CAFB 2016a, Rebman 2018). The permitted annual diversion (withdrawal) for each production well is summarized in **Table 3-7**.

Table 3-7. Cannon AFB Water Production Well Summary

Well ID	Well Depth (feet bgs)	Well Casing Diameter (inches)	Permitted Diversion (AFY)	Average Production 2005–2011 (AFY)	Capacity (gpm)
PW-02	383	16	280.42	20.58	450
PW-03	402	16	315.11	67.16	425
PW-04	389	14	265.17	0.21	220
PW-04A	420	16	338.21	193.47	650
PW-05	400	12.75	265.17	207.3	425
PW-07	378	16	265.24	0.83	325
PW-08	415	16	388.55	258.33	650
PW-09	385	6.62	272.52	6.34	140
PW-12	410	16	324.95	231.8	700

Source: Trinity 2012
bgs = below ground surface; AFY = acre-feet per year; gpm = gallons per minute

Water pumped from PW-02, PW-03, PW-08, PW-12, and PW-04A (when used in the potable system) is treated at the installation's main water treatment plant (WTP) and stored in a 272,000-gallon aboveground tank. Four high service pumps at the plant can deliver water to the main distribution system at a rate of 5,300 gallons per minute. PW-07 delivers water to WTP 2, separate from the main WTP, where it is chlorinated and stored in a 50,000-gallon underground tank and the three water towers (totaling 550,000 gallons) on the installation. Two high service pumps at this location deliver water to the distribution system. Water from PW-05 and PW-09 is treated with sodium hypochlorite at WTP 2 at the wellheads and delivered directly to the distribution system. Normal pump operation uses two wells out of the existing six operating wells on a rotated basis (Trinity 2012, CAFB 2016a).

The water distribution system consists of primarily cast iron piping, ranging in diameter from 3 to 24 inches, and a series of booster pumps associated with the water storage tanks. **Table 3-8** list the seven water storage reservoirs in the Cannon AFB potable water distribution system.

Table 3-8. Cannon AFB Potable Storage Tank Inventory

Storage Tank	Location	Capacity (gallons)	Type of Tank
4336	Main WTP	272,000	Ground-level
1899	WTP @ PW-07	50,000	Underground
1895	WTP @ PW-07	250,000	Elevated
1896	WTP @ PW-07	150,000	Elevated
1897	WTP @ PW-07	150,000	Elevated
9772	Northwestern part of installation	170,000	Ground-level
2324	Southwestern part of installation	25,000	Ground-level

Source: Trinity 2012

An average of 571,600 gallons per day (gpd) of water is used at Cannon AFB, and an average of 4,802,400 gallons of water is stored and available at any time at the installation. In 2016, 182.8 million gallons of water, or 501,000 gpd, were used on the installation. The groundwater supply in the source aquifer is diminishing primarily because of drawdown from irrigated agriculture and municipal consumption and cannot be replenished through recharge and remaining storage (CAFB 2016a, Rebman 2018). Projected lifetimes for the Ogallala (High Plains) Aquifer have been estimated at a few decades or less (Rawling and Rinehart 2017). Current individual well depths vary from approximately 357 to 415 feet and are expected to be adequate through 2020, when the new regional Ute water supply pipeline is estimated to be available (CAFB 2016a).

The long-term sustainable water resource for the installation and the surrounding region is the Ute Reservoir (CAFB 2016a). The Ute Reservoir, in northeastern New Mexico on the Canadian River, is a water right granted to New Mexico in an agreement with Texas and Oklahoma. The Eastern New Mexico Rural Water System is currently developing the Ute Pipeline Project to provide potable water from the Ute Reservoir to eight city and county member agencies and Cannon AFB for municipal, commercial, and industrial use. The Ute Pipeline Project is designed to address future water supply shortage caused by the steady decline in water level in the Ogallala Aquifer and includes a completed raw water intake at Ute Reservoir, proposed 28 million gallons per day (mgd) water treatment facility, and approximately 150 miles of water conveyance pipelines in the design/land acquisition phase to serve finished water to Cannon AFB and other regional communities (ENMWUA 2018). **Section 5.1.1.4** provides a more detailed description of the Ute Reservoir Project.

Sanitary Sewer. Cannon AFB owns and operates its own sanitary sewer system and WWTP. Domestic and Industrial wastewater are delivered to the WWTP via a gravity sewer system comprised of 13 lift stations, 584 sewer manhole covers, and 58 miles of pipeline. The WWTP, which was constructed in 1998 and upgraded in 2012, has an average daily flow capacity of 1.13 mgd, current average demand of approximately 0.277 mgd (although demand between January and October 2017 was 0.268 mgd), and a peak daily design flow of 1.50 mgd.

Reclaimed water from the WWTP is managed in accordance with the NMED *Above Ground Use of Reclaimed Domestic Wastewater* guidance (NMED 2007). Wastewater National Pollutant Discharge Elimination System (NPDES) Permit Number NM0030236 regulates the quality of wastewater discharged from the WWTP to Cannon AFB's two permitted outfalls: North Playa Lake and the golf course pond. The wastewater discharge system is in adequate condition (CAFB 2016a, Rebman 2018).

There are 13 metered septic tank/leach field systems that support 15 facilities on the installation. Up to 7,500 gpd of domestic wastewater is authorized to be discharged to the septic systems and holding tanks, and the 2016 average was 3,005 gpd (CAFB 2016a, Rebman 2018).

Stormwater System. Stormwater flows are generally to the south and east across the installation. Stormwater runoff is contained on-installation where it either evaporates, infiltrates into the ground, or is collected by a drainage system of culverts, storm sewers, and ditches into the North and South Playa Lakes, golf course ponds, and a detention basin near the Southeast Development District (CAFB 2017d). An insignificant amount of stormwater may migrate off the installation at isolated areas, such as the extreme northeast and northwest corners. The North Playa Lake is in the eastern portion of Cannon AFB and collects stormwater runoff from the northeastern corner of the installation and a portion of the treated effluent from the WWTP. The South Playa Lake is in the southwestern portion of the installation and collects stormwater runoff from the central and southwest portions. Southeast Development District runoff drains into the detention basin at that location. The playas and basin have no surface outlet, and any volume of stormwater collected evaporates or infiltrates and is not discharged off Cannon AFB (CAFB 2016b, CAFB 2017d).

Flightline runoff is conveyed through storm sewers on the southwest and northeast and enters natural stormwater watercourses. Most runoff from along the flightline is conveyed to the South Playa Lake. Stormwater at the southwest end of the flightline flows through four storm sewers ranging in size from 27 to 48 inches and outlets to the playa. In the event of back-to-back high rainfall events (e.g., over 25-year events within three days of each other), it is possible for the South Playa to exceed its banks, and the collected stormwater would be dispersed overland in an unconcentrated flow condition (CAFB 2016a).

At the northeast end of the flightline, stormwater is routed through a pair of storm sewers before outlet to an overland flow between an abandoned (gravel) runway and the CATM facility. There is no defined swale, and the unconcentrated flow travels in a southerly direction along the main runway in a grassy area (CAFB 2016a).

Runoff also collects in several golf course ponds and wetlands. During large rainfall events, stormwater on the golf course creates flooding because of lack of management capacity. Pumping is required to relieve overflows at the pond and discharge it to the storm system. Ground Water Discharge Permit (DP-873) issued by NMED requires Cannon AFB to report when pumping is required to maintain at least two feet of freeboard on the golf course pond. Because water in the pond normally comingles with other water on the golf course when flooding occurs, a total volume of water removed from the golf course is usually reported (CAFB 2016a).

Developed areas on the base have underground storm drainage piping with associated catch basins, drain inlets, manholes and similar drainage appurtenances. The storm drainage system carries the collected stormwater to ditches and streams that remove it from the installation. Drainage issues are addressed prior to any new construction to prevent ponding or standing water on a case by-case basis. The stormwater system is adequate but would require upgrade to support future development (CAFB 2016a).

Natural Gas. Natural gas is delivered to the installation through a Public Service Company of New Mexico (PNM) transmission/distribution pipeline system. Within the installation, an extensive network of natural gas lines is on the west side of the flightline. This network is made up of 1- to 6-inch pipes. In most instances, the piping material is polyethylene pipe. PNM delivers the natural gas to the installation master meter at an approximate pressure of 55-60 pounds per square inch. The gas line enters the installation on the north perimeter near the Main Gate and there are three natural gas storage facilities located to the east of the golf course. In general, existing alignments of distribution mains, which are 6 inches diameter or greater, follow the roadway network (CAFB 2016a).

The current daily average demand at Cannon AFB is 44.4 thousand cubic feet (mcf), with a yearly average of 16,000 mcf and a peak monthly demand of 10,800 mcf in January. Although the capacity provided by PNM is not readily known, they are generally able to provide the required demand. The natural gas infrastructure provides adequate supply and distribution to meet the gas energy needs of existing and planned future facilities. Current natural gas system upgrades include installation of trace wires on gas distributions lines, developing a gas model to accurately gather data to ensure the installation has enough gas available for future missions, installing a telemetry system to help eliminate manual meter readings, and continuing to monitor and prioritize natural gas repair and replacement projects to better serve future mission requirements, including replacing aging infrastructure and detecting system leaks (CAFB 2016a).

Liquid Fuel. The Cannon AFB fuel storage complex of aboveground storage tanks (ASTs) is located immediately east of the Main Gate. Storage includes two 840,000-gallon Jet A Aviation fuel (Jet A) tanks, one 420,000-gallon Jet A tank, one 12,000-gallon motor gasoline tank, one 12,000-gallon ethanol gasoline (E85) and two 12,000-gallon ultra-low-sulfur diesel (DS2) tanks. Defense Logistics Agency-Energy procures all fuel for Cannon AFB. Fuel delivery to the installation by commercial tank truck is the only option under the Defense Logistics Agency-Energy contract (CAFB 2016a).

The 27th Special Operations Logistics Readiness Squadron Fuels Flight delivers Jet A to the flightline using 6,000-gallon R-11 refuelers and a modified Type 4 hydrant system. The hydrant system is equipped with two 25,000-gallon Jet A tanks. Use of the system reduces the requirement for trucks to fill at the fuel storage complex, which reduces the turnaround time for truck fills during aircraft surge operations (CAFB 2016a).

The military service station dispenses gasoline, DS2, and E85, and 1,200-gallon C-300 refuelers dispense gasoline and DS2. Fill stands for DS2 and E85 products are also located inside the fuel storage complex (CAFB 2016a).

Diesel fuel associated with emergency generators is stored in 54 ASTs and diesel fuel for the fire suppression deluge pumps is located in 18 ASTs throughout the installation, ranging in capacity from 58 to 3,445 gallons with a variety of different configurations (CAFB 2017d).

The Cannon AFB installation fuel distribution system has insufficient capacity to accommodate additional consumption and operations, with 2.12 million gallons of storage capacity and a demand of 5.5 million gallons. Current fuels system upgrades include refurbishing of fuel tanks, hydrants, and fuel pits to maintain long-term functionality (CAFB 2016a). See **Section 5.1.1.2** for a description of recently completed and proposed near-term fuel infrastructure projects.

Communications. The existing communications infrastructure at Cannon AFB consists of telephone, unclassified network, classified network, and defense messaging systems. Data Center equipment was recently relocated to a modern Data Center facility. Recent commercial connectivity upgrades provide the installation with diverse paths for critical voice and data circuits. A wireless/wired network was established for all dorms and is hosted through the installation. Expansion of the wireless/wired network is expected in the coming years for other installation facilities. The existing communications infrastructure is in acceptable condition and continues to be upgraded with the growth of the installation (CAFB 2016a).

Solid Waste. Solid waste management at Cannon AFB primarily consists of contract collection and disposal performed by Perry Management Corporation. Solid waste is transported to the Clovis Regional Solid Waste Facility, an off-installation solid waste landfill, for disposal (CAFB 2016b).

EO 13693 has goals to divert at least 50 percent of nonhazardous solid waste, including food and compostable material (but not construction and demolition materials and debris) annually; divert at least 50 percent of nonhazardous construction and demolition debris annually; and reduce or minimize the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of. Cannon AFB is currently at a 37.5 percent reduction rate for non-hazardous waste and a 92 percent diversion rate for construction debris (CAFB 2016a).

3.4.2.2 TRANSPORTATION NETWORK

Airfield. Cannon AFB operates two runways. Primary Runway 04/22 is a precision instrument approach runway that is 10,000 × 150 feet. Secondary Runway 13/31 is a precision instrument approach runway that is 8,200 × 150 feet (Global Aviation Navigator 2017, CAFB 2016a). In addition to 2,900,000 ft^2 of runways, the flightline area includes 4,517,000 ft^2 of aprons, 594,000 ft^2 of overruns, and 2,117,000 ft^2 of taxiways. These areas include the Northwest Ramp, Southeast Ramp, and 80 aircraft parking positions. The Northwest Ramp is the main apron at Cannon AFB. The airfield pavement system is 84.8 percent Portland cement concrete and the remaining 15.2 percent is asphalt concrete (CAFB 2016a).

Airfield conditions at Cannon AFB have been rated from degraded (Runway 13/31) to adequate (04/22). The 25-foot width shoulder requirement is currently not met, because the southern portion of Runway 13/31 is missing shoulders, and shoulders are only 10 feet wide on each side on other runways. Shoulder construction projects are planned to increase shoulder widths accordingly. Other planned airfield improvements include runway overrun improvements and pavement replacement and rehabilitation. While two runways and two main apron areas provide

ample flexibility, there is limited capability to receive additional aircraft without ramp expansion or new ramp development (CAFB 2016a).

Air Transportation. The nearest civilian airports are in Clovis, New Mexico; Lubbock, Texas; and Amarillo, Texas. Passenger service into the Clovis Municipal Airport is limited to a few daily flights by Boutique Air, connecting in Dallas/Fort Worth International Airport. The Clovis Municipal Airport has two paved runways and an auxiliary turf runway (CAFB 2016a).

Rail Transportation System. The major east-west transcontinental BNSF Railroad is directly adjacent to the north boundary of Cannon AFB. Rail service does not currently serve Cannon AFB. There is no passenger service to Clovis; Amtrak is only available out of Lamy, New Mexico (CAFB 2016a).

Off-installation Roadways. The local road network near Cannon AFB consists of U.S. Highway 60/84, U.S. Highway 70, and New Mexico State Highways 311 and 467. State Highway 467 connects Portales with Clovis and skirts the east side of Cannon AFB. The closest interstate highway is I-40, which is approximately 85 miles north of Cannon AFB (CAFB 2016a).

Gates. Vehicular traffic enters and exits Cannon AFB through two control points – the Main Gate and the Portales Gate. The Main Gate is immediately south of U.S. Highway 60/84 on the north side of the installation. The gate connects U.S. Highway 60/84 traffic and the Cannon AFB housing area north of the highway with the installation via an overpass. The visitor control center and personal vehicle inspection area are at the Main Gate. The Portales Gate is located on the south side of Cannon AFB and is the designated commercial gate. It has a commercial/contractor access vehicle inspection location and provides personnel who reside in Portales with access to the installation. A third gate (West Gate) is currently closed to all traffic (CAFB 2016a).

Gate access times vary during the day, with peak hours hindered by insufficient lane capacity. Neither gate meets the UFC 4-022-01, *Security Engineering: Entry Control Facilities/Access Control Points* (CAFB 2016a).

On-installation Roadways. The road network on Cannon AFB consists of arterials, collectors, and local streets. Air Commando Way is the primary east/west transportation route in the cantonment area. Transportation routes around the edge of the community cantonment area include Eagle Claw Boulevard, Chindit Boulevard, North Perimeter Road, Eastern Perimeter Road, South Perimeter Road, and South Gunship Road. Major arterials through Cannon AFB are D.L. Ingram Boulevard, Casablanca Avenue, and Olympic Boulevard.

Currently, there are approximately 38.4 miles of paved roads at Cannon AFB (consisting of 12.5 miles of primary roads, 25.9 miles of secondary roads), and 7.5 miles of unpaved access roads. The current road networks on the installation have a rating of fair (APT 2015). The existing installation road system is currently functional because the land use pattern, mission, and population of Cannon AFB have remained fairly constant since the 27 SOW assumed command (CAFB 2016a).

Parking. Parking is one of the most space-consuming land uses at Cannon AFB, and it dominates the landscape surrounding many existing facilities. Parking is currently adequate, but the need for consolidation of parking areas, more efficient access to surface parking areas from facilities, additional on-street parallel parking, and parking structures along with other parking improvements has been identified for future action (CAFB 2016a).

Pedestrian Access. Pedestrian circulation throughout the Cannon AFB is generally limited to sidewalks. Sidewalks and crosswalks are scattered and not well connected throughout the Installation. Some sidewalks are very narrow (3 feet in width). Crosswalks with curbed ramps are not prevalent across the installation. The need for improved pedestrian circulation and corridor connectivity has been identified, especially in the areas of community and residential districts (CAFB 2016a).

3.5 Geological Resources

3.5.1 Definition of Resource

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

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

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

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

Geologic hazards are defined as a natural geologic event that can endanger human lives and threaten property. Examples of geologic hazards include earthquakes, landslides, rock falls, ground subsidence, and avalanches. Paleontology is the study of fossils to determine ecologies of the past, evolution, and interactions between organisms and their environments.

3.5.2 Affected Environment

Topography. Cannon AFB lies in the northwestern part of the Southern High Plains region, a subdivision of the Great Plains physiographic province. The region is characterized by the Llano Estacado, a broad plateau that encompasses approximately 37,500 square miles in Texas and New Mexico and represents one of the largest mesas in North America. This vast, high flatland slopes gently and uniformly downward to the southeast at an imperceptible 10 feet per mile from altitudes of more than 5,000 feet above mean sea level (MSL) just west Cannon

AFB, to less than 3,000 feet above MSL in western Texas. The plateau is bounded to the north by the Canadian River (approximately 65 miles from Cannon AFB), to the east by the Caprock Escarpment (120 miles from the installation), and to the west by the Mescalero Escarpment (55 miles from the installation). The plateau has no southern boundary as it merges with the Edwards Plateau approximately 180 miles southeast of Cannon AFB (USGS 2004).

The topography of Cannon AFB and vicinity generally replicates the pattern of the regional plateau. Land surface slopes downward to the southeast at an approximate grade of 20 to 25 feet per mile. Land surface is highest (4,340 feet above MSL) in the northwestern corner of the installation and lowest (4,265 feet above MSL) in the southeastern corner (USGS 1985).

The landscape of the Southern High Plains region, although generally flat and nearly featureless with respect to significant topographic relief, is dotted with playa lakes or basins. Near Cannon AFB, numerous enclosed depressions interpreted to be playa basins are evident in the local U.S. Geological Survey (USGS) topographic map (USGS 1985). Many of these basins collectively form northwest-southeast oriented lineaments. A few miles south of the installation, modest topographic relief occurs in the form of erosional drainages (arroyos). Except for the arroyos and ephemeral playas, the countryside is mostly level, dry, and void of natural surface water bodies.

Geology. Regional geology of the Southern High Plains is the result of the deposition of thousands of feet of sediments, most recently those eroded from uplifted southern Rocky Mountain ranges to the west. Deep beneath more recent deposits lie Paleozoic sediments consisting of brine-pool salts, anhydrite, red beds, and carbonates, remnants of an ancient shallow sea. Across much of the High Plains, the sediments of the Dewey Lake, Alibates, and Salado Formations (in descending order) form an evaporative aquitard at the base of the locally present Dockum Aquifer (Blanford et al. 2003). Later Mesozoic formations consist of sand and gravel, marine sandstones, limestones, and shales, which represent the last occurrence of marine waters in the area, most of which were subsequently eroded away (NMSHD 1971). Overlying these sediments is the Ogallala Formation and its hydrogeologic equivalent, the Ogallala Aquifer, regionally referred to as the Southern High Plains Aquifer.

The Ogallala Formation consists of fluvial sediments carried down eastwardly from higher elevations to the west. Ogallala Formation sediments tend to have been deposited in paleochannels incised into the surface of the underlying Chinle Formation, a massive shale unit with interbedded sandstone. Greater quantities of Ogallala sediments were deposited in more deeply incised channels resulting in variable bottom elevations of the Ogallala Formation and areas of comparatively thinner and thicker sequences of deposits (Dugan 1992). As infilling of lower elevations progressed, sediment-laden streams became less energized, carrying and depositing lighter sediments because of a leveling of the landscape. This progression culminated with a flat, arid plain comparable to current conditions. The Ogallala Formation, which in eastern New Mexico and west Texas ranges from 30 to 600 feet thick, consists of eolian sand and silt, fluvial and lacustrine sand, silt, clay, and gravel (Gustavson 1996, Langman 2006, McLemore 2001).

Significant caliche deposits (calcium carbonate cemented rock) formed across the Southern High Plains region, demarcating the top of the Ogallala Formation. Caliche is a major feature of

the Ogallala Formation, occurring in nearly continuous to discontinuous layers throughout. The uppermost caliche, termed the "climax caliche," crops out around playas and the bounding escarpments of the Ogallala Formation, and is locally termed "caprock." Caliches that occur lower in the Ogallala Formation are platy and harder. Caliche is likely to either be thin or absent below playas. Eolian sand deposits of the Blackwater Draw Formation blankets a significant portion of the region (Trinity 2012).

Soils. Soils of the Southern High Plains consist generally of medium-low and low permeability silt and clay in the northern third of the region and medium to high permeability sand and loam across the southern two-thirds of the region. Soils at the installation are representative of the southern portion and primarily Amarillo fine sandy loam with 0 to 1 percent slopes. The Amarillo series consists of very deep, well-drained, moderately permeable soils derived from loamy eolian sediments. These soils are common to the nearly level and gently sloping terrain of the Llano Estacada (NRCS 2017, USDA 2007).

These soils are highly susceptible to erosion from persistent winds and infrequent rain events in the region. The semi-arid climate contributes to the development of thin topsoil with low organic content underlain at relatively shallow depths by a leached clay-carbonate hardpan or caliche. Heavy rain events, particularly summer thunderstorms, can cause erosion on unstable embankments and denuded soils.

Geologic Hazards. Local terrain is geologically and seismically stable, lacking structural geologic elements such as faults, folding, and crustal deformation. Rock units in the vicinity of the installation exhibit no moderate to large scale folds or faults. No earthquakes above a 4.5 magnitude in the area have been recorded since 1869 (Sanford 2002, Sanford 2004, USDOI 2011).

3.6 Water Resources

3.6.1 Definition of Resource

Water resources are natural and man-made sources of water that are available for use by and for the benefit of humans and the environment. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes. Hydrology concerns the distribution of water to water resources through the processes of evapotranspiration, atmospheric transport, precipitation, surface runoff and flow, and subsurface flow. Hydrology results primarily from temperature and total precipitation that determine evapotranspiration rates, topography that determines rate and direction of surface flow, and soil and geologic properties that determine rate of subsurface flow and recharge to the groundwater reservoir.

Groundwater consists of subsurface hydrologic resources and includes underground streams and aquifers. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes. Groundwater features include depth from land surface, aquifer or well capacity, quality, recharge rate, and surrounding geologic formations. Groundwater quality and quantity are regulated under several different programs, including the federal Underground Injection Control regulations, authorized under the Safe Drinking Water Act.

Surface water resources generally consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Waters of the United States are defined within the Clean Water Act (CWA), as amended, and jurisdiction is addressed by USEPA and the U.S. Army Corps of Engineers (USACE). Encroachment into waters of the United States requires a permit from the state and the Federal government.

The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The CWA establishes federal limits, through the NPDES program, for the allowable amounts of specific pollutants that can be discharged to surface waters, to restore and maintain the chemical, physical, and biological integrity of the water. A water body can be deemed impaired if water quality analyses conclude that exceedances of CWA water quality standards occur.

The NPDES stormwater permitting program in New Mexico is regulated by USEPA Region 6. The NMED Surface Water Quality Bureau's, Point Source Regulation Section assists USEPA with implementation of the NPDES permit program by performing inspections and providing information to local permitted entities (NMED 2018).

In general, the NPDES stormwater permitting program requires permits for discharges from construction sites that disturb 1 or more acres, and discharges from smaller sites that are part of a larger common plan of development or sale. Because no waters of the United States have been documented on Cannon AFB, the installation has determined it is not regulated by the NPDES program. Cannon AFB does not require construction contractors to obtain individual construction NPDES permit coverage (Rebman 2016). However, any soil disturbance requires an Erosion and Sediment Control Plan (ESCP). Additionally, all contractors on Cannon AFB are required to use the *Cannon AFB and Melrose AFR Civilian Contractor Environmental Guide* for any contract or project. USACE requires that their contractors performing construction projects on the installation obtain NPDES permit coverage and implement a Storm Water Pollution Prevention Plan (CAFB 2015b, Rebman 2018).

In addition, construction site owners and operators that disturb 1 or more acres of land are required to use BMPs to ensure that soil disturbed during construction activities does not pollute nearby water bodies. Construction activities disturbing 20 or more acres must comply with the numeric effluent limitation for turbidity in addition to the non-numeric effluent limitations. Additionally, as of February 2, 2014, construction site owners and operators that disturb 10 or more acres of land are required to monitor discharges to ensure compliance with effluent limitations as specified by the permitting authority.

Under Section 438 of the Energy Independence and Security Act (EISA) of 2007, Federal agencies have requirements to reduce stormwater runoff from Federal development and redevelopment projects to protect water resources. Federal agencies can comply using a variety of stormwater management practices often referred to as "green infrastructure" or "low-impact development" practices, including, for example, reducing impervious surfaces, using vegetative practices, porous pavements, cisterns, and green roofs to maintain or restore predevelopment site hydrology to the maximum extent technically feasible.

Wetlands are identified as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. The USACE regulates the discharge of dredged or fill material into waters and wetlands of the United States pursuant to Section 404 of the CWA. Section 401 of the CWA requires that any applicant for a Federal license or permit to conduct an activity that could result in a discharge into waters of the United States provide the permitting agency a certification from the state in which the discharge originates certifying that the license or permit complies with CWA requirements, including applicable state water quality standards.

It is USAF policy to avoid construction of new facilities within areas containing wetlands where possible per AFI 32-7064*, Integrated Natural Resources Management,* and EO 11990. A FONPA must be prepared and approved by HQ AFSOC for all projects impacting wetland areas.

Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, nutrient cycling, water quality maintenance, and diversification of plants and animals. Floodplain storage reduces flood peaks and velocities and the potential for erosion. Floodplains are subject to periodic or infrequent inundation because of rain or melting snow. The risk of flooding typically depends on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency, which defines the 100-year floodplain. The 100-year floodplain is an area that has a 1 percent chance of inundation by a flood event in each year. Certain facilities inherently pose too great a risk to be in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses such as recreational and preservation activities to reduce the risks to human health and safety.

It is USAF policy to avoid construction of new facilities within the 100-year floodplain if possible per AFI 32-7064 and EO 11988. A FONPA must be prepared and approved by HQ AFSOC for all projects impacting floodplain areas.

3.6.2 Affected Environment

Groundwater. The unconfined Ogallala Formation is bounded at its base by the impermeable Chinle Formation, and is the main water-yielding unit of the Southern High Plains Aquifer (Dutton 2001, Langman 2006). The Southern High Plains Aquifer underneath Cannon AFB is part of the larger High Plains Aquifer System commonly referred to as the Ogallala Aquifer. The Ogallala Aquifer covers an area of approximately 174,000 square miles, spanning eight states: South Dakota, Wyoming, Nebraska, Kansas, Colorado, Oklahoma, Texas, and New Mexico (USGS 2004). Approximately 90 percent of the water drawn from the aquifer near Cannon AFB is used for agricultural irrigation (USDOI 2011). Recharge of the Ogallala Aquifer is primarily through precipitation. Estimated recharge rates are very low, less than one inch per year (Langman 2006, Musharrafieh 1999).

The Ogallala Aquifer is essentially being mined because groundwater removed from the aquifer for agricultural use far exceeds any recharge that occurs. As water is removed from the aquifer, groundwater migrates from higher elevations to lower elevations and wells on the fringes become dry, or, the saturated thickness of the aquifer becomes so thin that it is no longer feasible to use (Langman 2006).

At Cannon AFB, groundwater mining has been observed through historical water level measurements recorded at numerous wells both on installation and in the surrounding area. Recent annualized declines in water levels (reduced saturated thickness) of approximately two feet were reported in 2012 (Trinity 2012). The estimated saturated thickness of the aquifer beneath Cannon AFB circa 1940 was 100 to 170 feet. As a result of groundwater mining, the general thickness of the saturated section was reduced to approximately 50 feet by 2011. This reduction is unsustainable without alternative water supply systems.

Regional groundwater flow direction of the Southern High Plains Aquifer is generally to the east and southeast (Langman 2006, Hart 1985) with average hydraulic gradients across eastern New Mexico and western Texas of about 0.0018 feet per foot in early 2000. Locally, groundwater flow is influenced by the presence of paleochannels containing more highly transmissive sediments and the occurrence of springs (Blanford et al. 2003). Numerous cones of depression created by 50 years of groundwater pumping have modified and in some cases reversed groundwater flow gradients around heavily irrigated areas (Musharrafieh 1999).

Surface Water. There are no naturally occurring surface water bodies, major drainage ways, perennial streams, or jurisdictional waters on the installation (CAFB 2016b). Four man-made water bodies are present: North Playa Lake in the east-central part of the installation and three ponds at the golf course (see **Figure 3-3**). North Playa Lake receives treated effluent from the WWTP and is unlined. Much of this water evaporates, while some infiltrates into the subsurface. The golf course ponds also receive treated effluent from the WWTP. Water from all of the golf course ponds is applied to the golf course for irrigation (CAFB 2016a).

Wetlands. Wetlands on Cannon AFB are primarily associated with playa wetland communities in basins that have been impacted at varying degrees by past agricultural and USAF activities. Fringe wetlands occur below ordinary high-water marks on gradually sloping areas along the shoreline of the North Playa basin along East Aderholt Loop because of natural and anthropogenic water level drawdowns during the growing season. The South Playa basin to the southwest of the flightline (airfield runway area) was excavated to handle additional stormwater runoff from growth of the Southeast Development District. Drainage from the surrounding uplands supports a wetland plant community when the area is temporarily flooded. A 3.2-acre palustrine emergent wetland (South Playa Lake) is located between the southern ends of the two runways. The wetland hydrology is largely supplied by surface water runoff from the impervious surfaces associated with the runways. During precipitation events, large amounts of surface water drain to the wetland forming a temporary lake. The wetland is unlined so standing water evaporates or infiltrates into the subsurface. There are no jurisdictional waters of the United States located on Cannon AFB (CAFB 2005b, CAFB 2016a, USFWS 2017a).

Floodplains. Although there are no major drainage ways on the installation, potential flooding areas and conceptual solutions to address flooding problems around the installation were

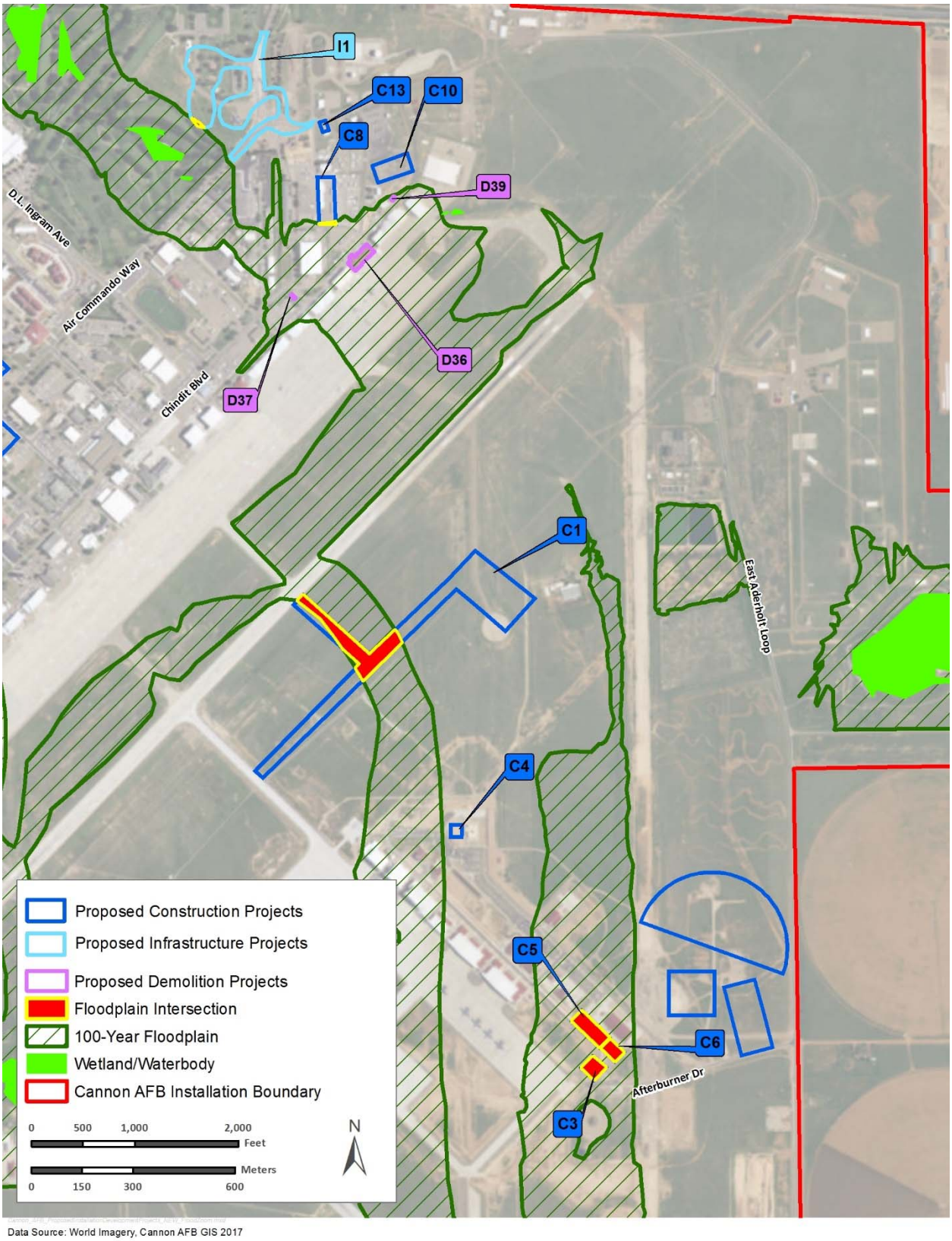


Figure 3-3. Water Resources and Proposed Facility Construction, Infrastructure Improvement, and Demolition Projects on Cannon AFB

identified in a 2009 drainage study for the installation (CAFB 2016a). Significant flow of surface drainage from the north of Cannon AFB across the cantonment area and flightline toward the southeast occurs during heavy rain events. This flow area is identified as the 100-year floodplain for Cannon AFB. There are two floodplain areas off of the installation; however, there are no Federal Emergency Management Agency floodplains identified in the vicinity of Cannon AFB (FEMA 2017).

3.7 Biological Resources

3.7.1 Definition of Resource

Biological resources include native or naturalized plants and animals and the habitats (e.g., wetlands, forests, grasslands) in which they exist. Protected and sensitive biological resources include federally listed (endangered or threatened) species, designated or proposed critical habitat, species of concern managed under conservation agreements or management plans, and state listed species.

Under the ESA, an endangered species is defined as any species in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species likely to become endangered in the foreseeable future. Section 7 of the ESA requires federal agencies, in consultation with USFWS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. Species of concern are not protected under the ESA, but have been identified as important to monitor (USFWS 2012).

The ESA also generally prohibits any action that causes a "take" of any listed species. "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." Not all take is prohibited. Where appropriate, incidental take statements can be provided that allow take of threatened or endangered species that are incidental to an otherwise legal activity. Air Force Policy Directive 32-70, *Environmental Quality* directs the implementation of the ESA.

The New Mexico Department of Game and Fish (NMDGF) maintains a list of species designated endangered, threatened, of greatest conservation need, or sensitive within the state per the New Mexico Wildlife Conservation Act (NMWCA) (NMDGF 2016). AFI 32-7064, *Integrated Natural Resources Management*, calls for the protection and conservation of state listed species when not in direct conflict with the military mission. Species of Greatest Conservation Need (SGCN) are not protected under the NMWCA, but are associated with key habitats; have low or declining populations; or have high recreational, economic, or charismatic value. Sensitive species are also not protected under the NMWCA. The sensitive designation exists to establish the need for caution during land management activities in areas where these species could be present (NMDGF 2017a).

The MBTA is the primary legislation in the U.S. conservation of migratory birds. The MBTA prohibits the intentional and unintentional taking, killing, or possessing of migratory birds unless permitted by regulation. EO 13186, *Responsibilities of Federal Agencies to Protect Birds*,

provides a specific framework for the federal government's compliance with its MBTA obligations and aids in incorporating national planning for bird conservation into agency programs. A Memorandum of Understanding exists between DoD and USFWS to promote the conservation of migratory birds in compliance with EO 13186.

Bald and golden eagles receive additional federal protection under the Bald and Golden Eagle Protection Act (16 USC § 668–668d). This act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald and golden eagles, including their parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb."

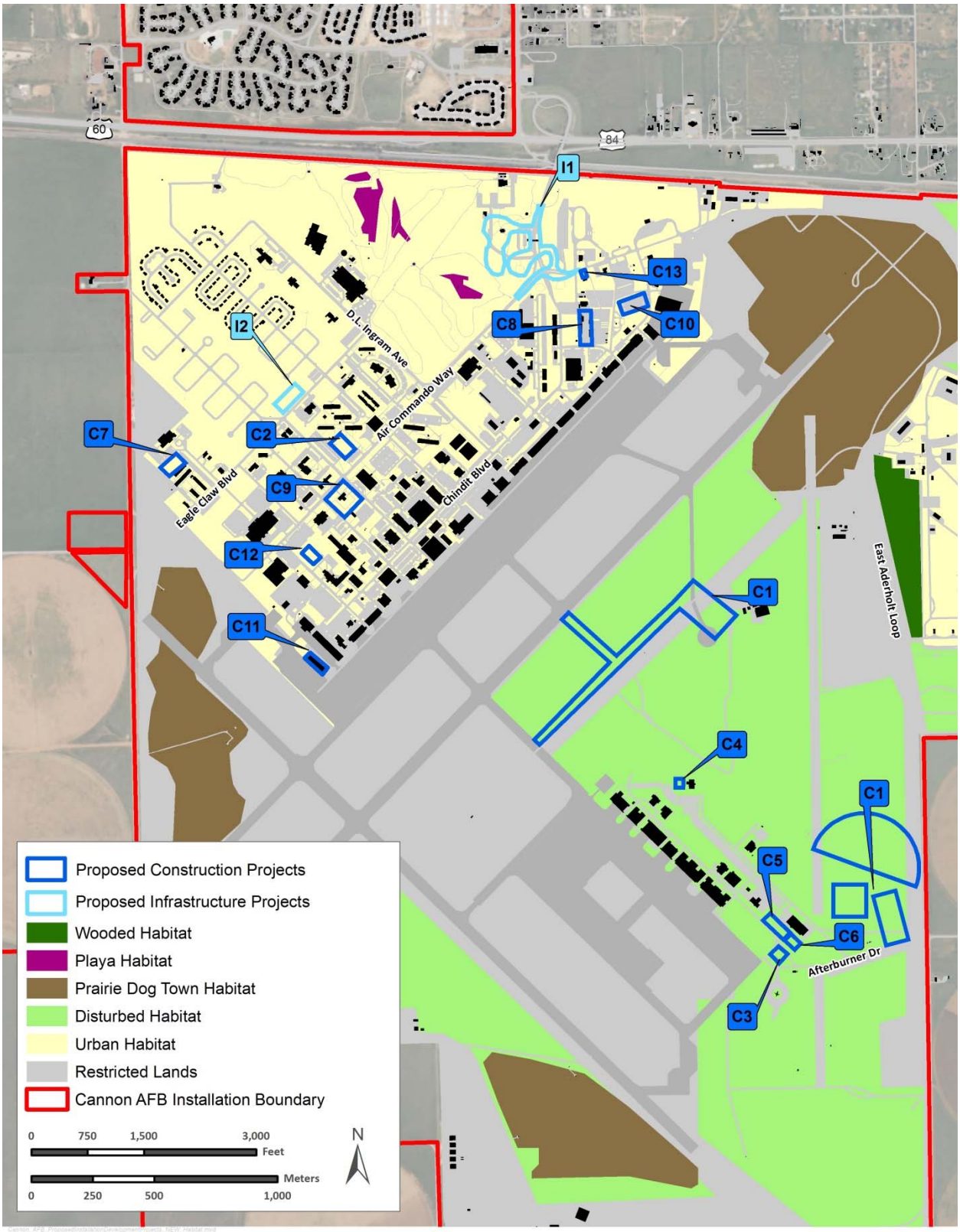
3.7.2 Affected Environment

Vegetation. Cannon AFB is within the Llano Estacado, a subregion of the High Plains Ecoregion. This ecoregion is characterized by smooth to slightly irregular plains with a high percentage of irrigated cropland and thousands of playa lakes. Little native vegetation associated with the shortgrass prairie ecosystem remains because of the cultivation of the area. Shortgrass prairies are dominated by grasses such as blue grama (*Bouteloua gracilis*), black grama (*Bouteloua eriopoda*), and buffalograss (*Munroa squarrosa*) with lesser amounts of forbs and shrubs (CAFB 2016b).

The project locations under Proposed Action occur throughout developed portions of Cannon AFB and are classified as urban or disturbed grassland habitat as identified in the Cannon AFB Integrated Natural Resources Management Plan (CAFB 2016b). Surrounding habitat types include wooded habitat, playa, and prairie dog towns (see **Figures 3-4** and **3-5**). The urban areas, airfield and safety zones, disturbed grassland, and prairie dog town areas are maintained with mowers, trimmers, and other standard vegetation management equipment (CAFB 2016b, CAFB 2005b).

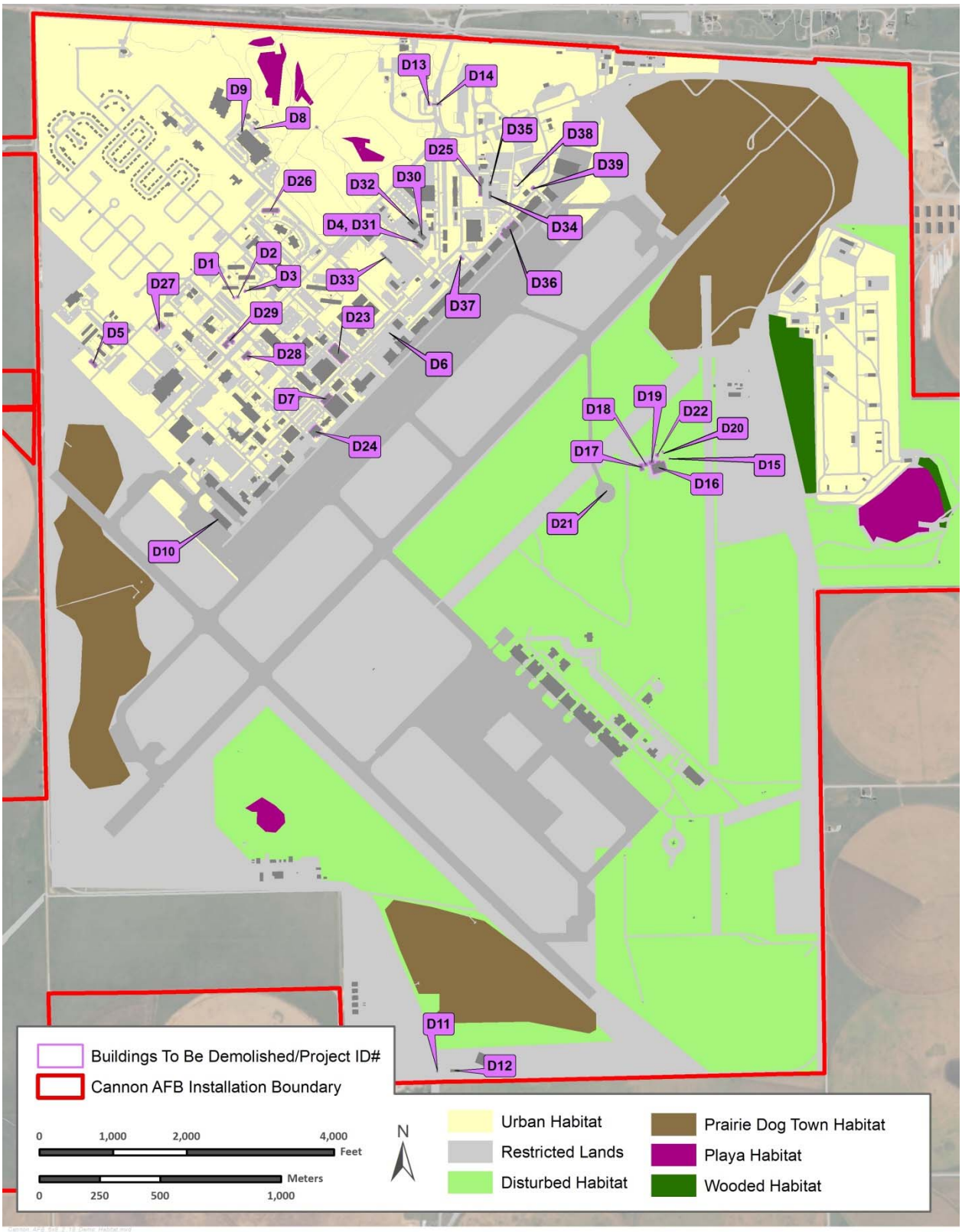
Urban habitat is primarily associated with the golf course and landscape vegetation north of the airfield. This vegetation is highly maintained and primarily composed of ornamental and non-native grasses, shrubs, and trees. Common grass species are Bermuda grass (*Cynodon dactylon*), Johnson grass (*Sorghum halapense*), buffalograss, tumble windmillgrass (*Chloris verticillata* Nutt.), and blue grama. Various vacant lots within the area are overgrown with forb species such as sandbur (*Cenchrus spinifex*), Russian thistle (*Salsola targus*), pigweed (*Amaranthus* spp.), and kochia (*Kocia scoparia*). Siberian elms (*Ulmus pumila*) as well as other various ornamental trees and shrubs are present throughout the urban habitat, but are most abundant within the housing area. The disturbed grassland habitat within and surrounding the airfield is primarily composed of the common grass species listed above and dispersed forbs.

Wetlands on Cannon AFB are primarily associated with playa habitats and their ephemeral channels or ditches. The presence of vegetation in these habitats is dependent upon seasonal variations in precipitation. Vegetation in playa depressions mainly consists of grasses, while sparse forbs and shrubs sometimes grow around the margins of the playas. South Playa Lake, which is 3,600 feet southwest of Project C1, has natural wet and dry periods of a typical playa system. This results in a wetland plant community on the floor of the playa. Outside of the forbs and shrubs that are seasonally present along the margins of the playa, vegetation



Data Source: World Imagery, Cannon AFB GIS 2017

Figure 3-4. Habitats and Proposed Facility Construction and Infrastructure Improvement Projects on Cannon AFB



Data Source: Cannon AFB Aerial Imagery 2015

Figure 3-5. Habitats and Proposed Demolition Projects on Cannon AFB

surrounding the South Playa Lake is maintained. The North Playa Lake, which is located 2,100 feet east of Project C1, is permanently inundated because it receives effluent from the WWTP. Vegetation surrounding North Playa Lake is maintained outside of shoreline vegetation. Wetlands are present around the golf course ponds (the closest pond is 275 feet west of Project I1); however, vegetation within the golf course is heavily maintained (CAFB 2016b).

Prairie dog town habitat vegetation is similar to that of shortgrass prairies, but contains a higher concentration of forbs. There are three distinct prairie dog town habitat sites in the northeastern, western, and southern portions of Cannon AFB (see **Figure 3-4**). The wooded habitat on Cannon AFB is made up of an approximately 5,460-ft^2 wooded area east of the airfield and an area along the eastern shore of North Playa Lake (CAFB 2016b).

Wildlife. A variety of resident, transitory, and migrant wildlife species are present within the highly modified habitats on Cannon AFB. The abundance of large trees and shrubs within the landscaped areas of the urban habitat provide habitat for common avian species such as mourning dove (*Zenaida macroura*), Eurasian collared dove (*Streptopelia decaocto*), great-tailed grackle (*Quiscalus mexicanus*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and American robin (*Turdus migratorius*). Canada goose (*Branta canadensis*) and Mississippi kite (*Ictinia mississippiensis*) are often seen around the golf course ponds. The only known fish populations in these ponds are the stocked grass carp (*Ctenopharyngodon idella*). Common wildlife found in the disturbed grassland habitat include the harvest mouse (*Micromys minutus*), coyote (*Canis latrans*), raccoon (*Procyron lotor*), thirteen-lined ground squirrel (*Ictidomys tridecemlineatus*), burrowing owl (*Athene cunicularia*), long-billed curlew (*Numenius americanus*), and various other small mammals (CAFB 2016b).

North Playa Lake is the most significant playa for wildlife habitat. Amphibians commonly found include the barred tiger salamander (*Ambystoma tigrinum*) and plains leopard frog (*Rana blairi*), which is a SGCN (CAFB 2016b, NMDGF 2017b). The most common reptile is yellow mud turtle (*Kinosternon flavescens*). Ducks, waders, and shorebirds are also often present. Common bird species observed during the summer include double-crested cormorant (*Phalacrocorax auritus*), American avocet (*Recurvistra americana*), great blue heron (*Ardea herodias*), and black-crowned night heron (*Nycticorax nycticorax*). Common species observed during migration and winter seasons include mallard *(Anas platyrhynchos*), blue-winged teal (*Anas discors*), green-winged teal (*Anas crecca*), northern shoveler (*Anas clypeata*), and ruddy duck (*Oxyura jamaicensis*). Various mammals use the playa lakes as a source of drinking water. Additionally, coyote, desert cottontail (*Sylvilagus audubonii*), striped skunk (*Mephitis mephitis*), deer mouse (*Peromyscus* sp.), hispid cotton rat (*Sigmodon hispidus*), and southern plains woodrat (*Neotoma micropus*) have been found using concrete structures in the center of North Playa Lake. Black-tailed prairie dogs (*Cynomys ludovicianus*) inhabit the prairie dog town and disturbed grassland habitat. Their abandoned burrows are used by burrowing owls, desert cottontail rabbits, snakes, lizards and other wildlife. Predators such as American badger (*Taxidea taxus*), coyote, swift fox (*Vulpes velox*), ferruginous hawk (*Buteo regalis*), and red-tailed hawk (*Buteo jamaicensis*) are attracted to prairie dog towns because of the abundance of prey (CAFB 2016b).

Protected Species. No federal or state-listed species permanently reside on Cannon AFB; however, some of these species have been observed in a transitory state. During a 2015-2016 survey for listed species, no federally or state-listed species were observed on the installation, but five USFWS species of concern were observed. These species were the burrowing owl, prairie falcon (*Falco mexicanus*), Cassin's sparrow (*Aimophilia cassinii*), lark bunting (*Calamospiza melanocorys*), and black-tailed prairie dog. There is no critical habitat on Cannon AFB (CAFB 2016b, USFWS 2017b).

The only federally listed species with the potential to occur on the installation is the least tern (*Sternula antillarum*), although they are unlikely to occur (see **Table 3-9**). There are also 13 USFWS species of concern and one candidate species that could occur on Cannon AFB. The lesser prairie-chicken (*Tympanuchus pallidicinctus*) is under review for federal listing and considered for analysis while its status is being determined; however, habitat for the species does not occur on the installation. Species with a potential to occur at the installation are listed in **Table 3-9** and described further below. Based on habitat requirements for the species listed, the golf course ponds and the North Playa Lake provide the most important potential habitat. While the urban, disturbed grassland, and prairie dog town habitats could provide potentially suitable habitat, these areas have been previously disturbed and are regularly maintained.

The least tern is the only federally-listed endangered species that could occur on Cannon AFB (NMDGF 2017c, USFWS 2017c). The least tern is uncommon in the region, but is present in the summer months during breeding and migration to its wintering habitat (Audubon 2017a, USFWS 2017b). The closest known breeding location is Bitter Lake National Wildlife Refuge, approximately 95 miles southwest of Cannon AFB near Roswell, New Mexico (USAF 2007). On Cannon AFB, the least tern could use the golf course ponds and playa lakes for foraging and could potentially nest along North Playa Lake. However, the least tern has not been observed on Cannon AFB to date and their occurrence is unlikely (USAF 2007, CAFB 2016b).

The lesser prairie-chicken is under review for federal listing and is both a NMDGF sensitive species and SGCN (NMDGF 2017b, NMDGF 2017c, USFWS 2017c). The lesser prairie-chicken prefers natural grasslands, which are not found on Cannon AFB. This species was not observed during the 2015–2016 surveys and is not expected to occur because no preferred habitat is present on Cannon AFB. As a result, its occurrence on Cannon AFB is unlikely (CAFB 2016b). Similarly, Sprague's pipit (*Anthus spragueii*), Arctic peregrine falcon (*Falco peregrinus tundrius)*, peregrine falcon (*Falco peregrinus*), Baird's sparrow (*Ammodramus bairdii*), bald eagle (*Haliaeetus leucocephalus*), ferruginous hawk, northern harrier, yellow-billed cuckoo, were not observed on Cannon AFB during the 2015–2016 surveys. These species are generally uncommon in the region and their occurrence is unlikely (CAFB 2016b, Audubon 2017g, Audubon 2017h, NMDGF 2017b, NMDGF 2017c, and USAF 2007).

Sprague's pipit is a candidate for federal listing and a NMDGF SGCN that could occur on Cannon AFB during its migration in the fall (USFWS 2010, NMDGF 2017b, NMDGF 2017c). Sprague's pipit prefers natural grasslands, which are not present on Cannon AFB, but they could use prairie dog town or disturbed grassland habitats on the installation (USFWS 2010, CAFB 2016b). However, it was not observed on Cannon AFB during the 2015–2016 surveys

Table 3-9. State and Federally-listed Species in Curry County, New Mexico

Common Name *Scientific Name*	Status		Habitat Preference	Potential for Occurrence	Habitat Present on Cannon AFB	Seasonal Presence
	USFWS (Federal)	FWC (State)				
Birds						
Arctic Peregrine Falcon *Falco peregrinus tundrius*	SC	T	Forested areas with cliffs and areas with abundant prey; hunt near croplands, meadows, marshes, and lakes	Unlikely	Yes	Winter
Baird's Sparrow *Ammodramus bairdii*	SC	T	Desert to upland grasslands	Unlikely	Yes	Winter
Bald Eagle *Haliaeetus leucocephalus*	-	T	Large trees near or along rivers and lakes; hunt in plains and grasslands searching for carrion and/or prairie dog towns and near rivers, lakes, ponds, and reservoirs	Unlikely	Yes	Winter
Burrowing Owl *Athene cunicularia*	SC	-	Treeless areas with short vegetation within and adjacent to prairie dog colonies; nests only in prairie dog, badger, or fox burrows	Known to occur	Yes	Year-round
Cassin's Sparrow *Aimophilia cassinii*	SC	-	Shortgrass prairie with scattered shrubs, sometimes in shrublands with grassy openings	Known to occur	Yes	Summer
Ferruginous Hawk *Buteo regalis*	SC	-	Grasslands, deserts, open areas with isolated trees and shrubs; areas with less than 50% cultivation; prairie dog towns in grasslands; nests in trees between 6 and 50 feet tall; cliffs	Unlikely	Yes	Winter
Lark Bunting *Calamospiza melanocorys*	SC	-	Grasslands, short grass prairie, cultivated areas	Known to occur	Yes	Summer
Least Tern (interior population) *Sternula antillarum*	E	E	River sand bars and islands, ponds, lakes with gravel and/or sand bars, often surrounded by water	Unlikely	Yes	Summer
Lesser Prairie-Chicken *Tympanuchus pallidicinctus*	UR	-	Arid natural grasslands with interspersed shrubs; normally found in habitat with shinnery oak	Unlikely	No	Year-round
Long-billed curlew *Numerius americanus*	SC	-	Shortgrass and mixed grass prairie, often within 0.25 miles of water; can be found in open fields and shores of freshwater lakes during migration	Known to occur	Yes	Summer
Northern Harrier *Circus cyaneus*	SC	-	Open areas such as prairies, plains, and meadows with herb or low woody vegetation for nest concealment	Unlikely	Yes	Winter

Common Name *Scientific Name*	Status USFWS (Federal)	 FWC (State)	Habitat Preference	Potential for Occurrence	Habitat Present on Cannon AFB	Seasonal Presence
Birds (continued)						
Peregrine Falcon *Falco peregrinus*	SC	T	Cliffs in forested areas; hunt in areas near croplands, meadows, marshes, lakes and along building ledges with nearby abundant prey	Unlikely	Yes	Year-round
Prairie Falcon *Falco mexicanus*	SC	-	Low rock outcrops; vertical cliffs with sheltered ledges and loose debris or gravel for a nest scrape; old raptor nests; hunts in prairies, deserts, riverine escarpments, canyons, foothills, and mountains	Known to occur	Yes	Winter
Sprague's Pipit *Anthus spragueii*	C	-	Natural grasslands, grasslands at lower elevations; shortgrass prairies	Unlikely	Yes	Fall
Yellow-billed Cuckoo (eastern population) *Coccyzus americanus occidentalis*	SC	-	Open to dense stands of shrubs and low trees; nests in dense thickets near water and second growth woodlands	Unlikely	Yes	Summer
Mammals						
Black-tailed Prairie Dog *Cynomys ludovicianus ludovicianus*	SC	-	Grassy plains and prairie ecosystems	Known to occur	Yes	Year-round
Swift Fox *Vulpes velox*	SC	-	Short to mid-grass prairie with sufficient prey availability	Known to occur	Yes	Year-round

Sources: USFWS 2010, Cornell 2015a, Cornell 2015b, CAFB 2016b, Audubon 2017b, NMDGF 2017c, USFWS 2017b, USFWS 2017c
Key: E = Endangered; T = Threatened; C = Candidate Species; SC = Species of Concern (federal); C= Candidate; UR = Under Review
Unlikely = Little or no suitable habitat and no documented element occurrence between 2015 and 2016
Likely = Potential suitable habitat exists and/or species observed on installation between 2015 and 2016.

and is uncommon in the region; therefore, its occurrence is unlikely (CAFB 2016b, Audubon 2017g).

The burrowing owl is a USFWS species of concern that occurs on Cannon AFB (NMDGF 2017c). Burrowing owls are common in the disturbed grassland habitat. The burrowing owl population is largely dependent upon the black-tailed prairie dog population because they use their burrows for nesting; however, they can also nest in badger and fox burrows. Cannon AFB follows USFWS guidance for protecting burrowing owls by marking burrows and protecting them from destruction.

Cassin's sparrow and lark bunting are USFWS species of concern that could be present during the summer in the disturbed grassland or prairie dog town habitats. These species were observed during the 2015–2016 surveys (CAFB 2016b).

The prairie falcon is a USFWS species of concern that could use the disturbed grassland and prairie dog town habitats to hunt during the winter; however, there is no prairie falcon nesting habitat on Cannon AFB. The prairie falcon was observed during the 2015–2016 surveys (CAFB 2016b, NMDGF 2017c).

The long-billed curlew is a USFWS species of concern and a NMDGF SGCN that could use the urban, disturbed grassland, prairie dog town, and playa habitats on Cannon AFB during the summer (CAFB 2016b, NMDGF 2017b, NMDGF 2017c). The long-billed curlew was not observed during the 2015–2016 surveys, but is known to occur on the installation (CAFB 2016b).

The black-tailed prairie dog is a USFWS species of concern, NMDGF sensitive species, and SGCN that is present on the installation. As of 2015, three active prairie dog towns were known to exist on Cannon AFB. Populations on Cannon AFB vary drastically from year to year with births, deaths, disease, and precipitation. They are considered a keystone species (i.e., a species that has a strong influence on an ecosystem) because many other animals use their burrows to escape extreme conditions. The swift fox is a USFWS species of concern and a NMGDF sensitive species that is known to occur in the disturbed grassland and prairie dog town habitats on Cannon AFB. Although it was not observed during the 2015-2016 surveys, it is known to hunt in these areas (CAFB 2016b).

Migratory Birds. Various migratory birds protected under the MBTA have the potential to use Cannon AFB as a stopover on their migratory route or could occur year round (see **Table 3-10**) (USFWS 2017b). The golf course ponds and playa lakes provide important habitat for migratory birds because they attract waterfowl during migration and in winter and provide transient or seasonal habitat (CAFB 2016b, USAF 2007).

3.8 Cultural Resources

3.8.1 Definition of Resource

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

Table 3-10. Migratory Birds with Potential to Occur on Cannon AFB

Common Name	Scientific Name	Seasonal Occurrence
American Golden-Plover	*Pluvialis dominica*	Migrating
Bald eagle	*Haliaeetus leucocephalus*	Wintering
Burrowing owl	*Athene cunicularia*	Year-round
Cassin's Sparrow	*Aimophilia cassinii*	Breeding
Chestnut-collared Longspur	*Calcarius ornatus*	Wintering
Ferruginous hawk	*Buteo regalis*	Wintering
Golden Eagle	*Aquila chrysaetos*	Wintering
Lark Bunting	*Calamospiza melanocorys*	Breeding
Lewis woodpecker	*Melanerpes lewis*	Wintering
Loggerhead Shrike	*Lanius ludovicianus*	Year-round
Long-billed Curlew	*Numenius americanus*	Breeding
Mccown's Longspur	*Calcarius mccownii*	Wintering
Mississippi Kite	*Ictinia mississippiensis*	Breeding
Mountain Plover	*Charadrius montanus*	Breeding
Northern Harrier	*Circus cyaneus*	Wintering
Peregrine falcon	*Falco peregrinus*	Year-round
Prairie Falcon	*Falco mexicanus*	Wintering
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Breeding
Rufous Hummingbird	*Selasphorus rufus*	Migrating
Short-eared owl	*Asio flammeus*	Wintering
Snowy plover	*Charadrius alexandrius*	Breeding
Solitary sandpiper	*Tringa solitaria*	Migrating
Swainson's Hawk	*Buteo swainsoni*	Breeding
Western Grebe	*Aechmophorus occidentalis*	Breeding
Williamson's Sapsucker	*Sphyrapicus thyroideus*	Wintering

Sources: Cornell 2015c, Cornell 2015d, CAFB 2016b, Audubon 2017c, Audubon 2017d, Audubon 2017e, USFWS 2017b

resources, and traditional resources. Depending on the condition and historic use, such resources might provide insight into the cultural practices of previous civilizations, or they might retain cultural and religious significance to modern groups.

Several federal laws and regulations govern protection of cultural resources, including the NHPA of 1966, the Archeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (NAGPRA) (1990). Cannon AFB is required to comply with USAF regulations and instructions regarding cultural resources, including AFI 32-7065, Cultural Resources Management and Cannon AFB's Integrated Cultural Resources Management Plan (ICRMP) (CAFB 2009). Cannon AFB consults with federally recognized tribes in accordance the laws listed previously, as well as EO 13175, Consultation and Coordination with Indian Tribal Governments; DoD Instruction 4710.02, *Interactions with Federally-Recognized Tribes*; and AFI 90-2002, *Air Force Interactions with Federally Recognized Tribes*.

The NHPA establishes criteria for assessing the significance of cultural resources. Resources that are listed or eligible for listing in the National Register of Historic Places (NRHP) are termed

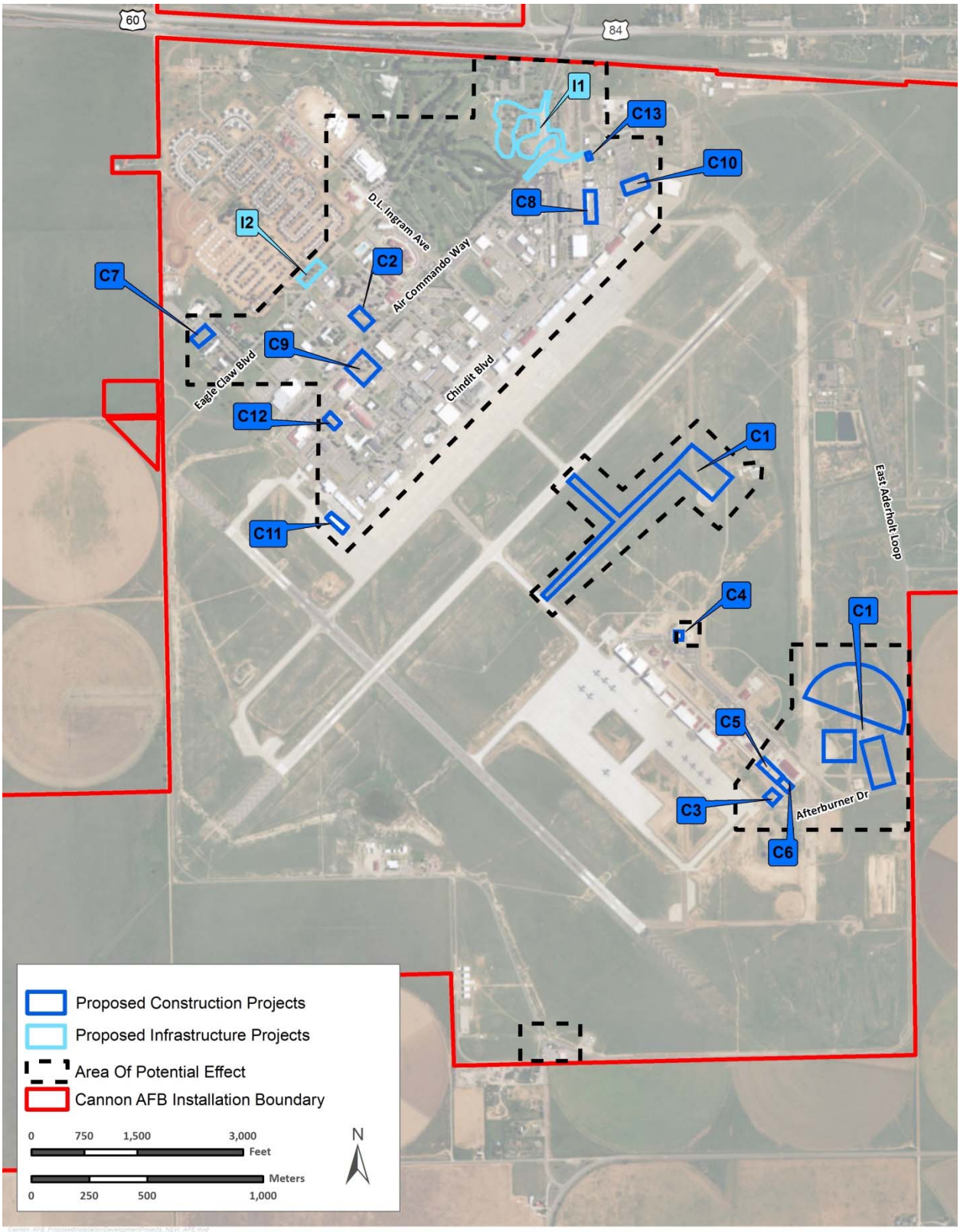
"historic properties." Section 106 of the NHPA requires federal agencies to assess the potential impact of their undertakings on historic properties in the area of potential effect (APE). Cannon AFB will consult under Section 106 of the NHPA with the New Mexico SHPO and appropriate federally recognized tribes. As a part of the Section 106 process, Cannon AFB has defined the Undertaking as the Proposed Action and defined the APE as five noncontiguous areas that encompass all of the proposed construction, infrastructure, and demolition projects (see **Figures 3-6** and **3-7**).

Typically, cultural resources are subdivided into archaeological resources, architectural resources, or resources of traditional or religious significance. Archaeological resources comprise areas where human activity has measurably altered the earth or deposits of physical remains are found (e.g., projectile points and bottles), but standing structures do not remain. Architectural resources include standing buildings, bridges, dams, other structures, and designed landscapes of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to warrant consideration for the NRHP. More recent structures might warrant protection if they are of exceptional importance or if they have the potential to gain significance in the future. Resources of traditional, religious, or cultural significance can include archaeological resources, sacred sites, structures, districts, prominent topographic features, habitat, plants, animals, or minerals considered essential for the preservation of traditional culture.

3.8.2 Affected Environment

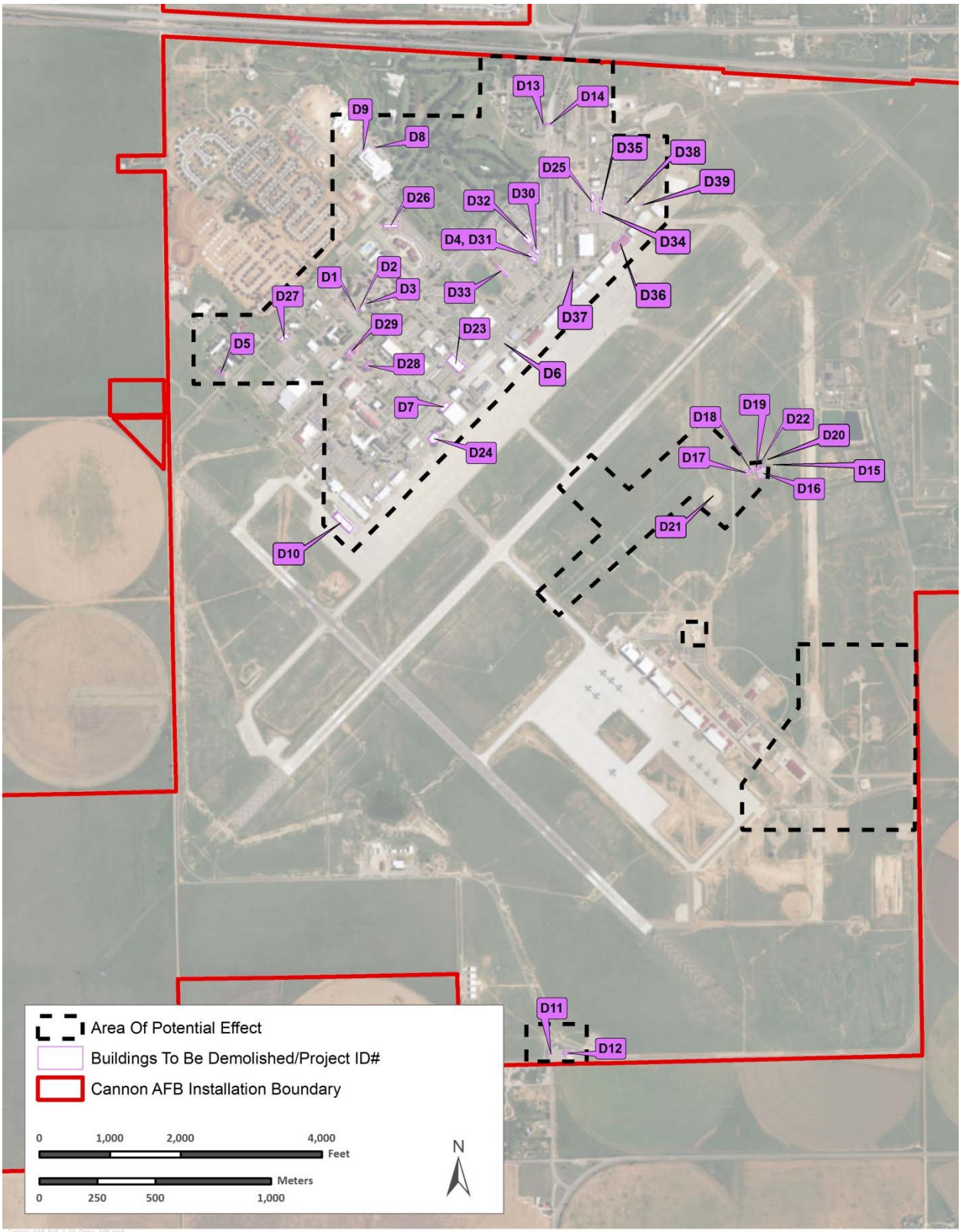
Cannon AFB is on the western edge of the Llano Estacado in eastern New Mexico. The earliest evidence for humans living in the Llano Estacado is from the Paleo-Indian period (10550 B.C. to 5500 B.C.) and more specifically from the Clovis complex, named for the first identified archaeological evidence for this complex found at the Blackwater Draw site near Clovis, New Mexico (CAFB 2017b). People of the Paleo-Indian period relied heavily on the hunting of megafauna such as mammoth and ancient bison at the end of the Pleistocene and sites from this period are often identified by the presence of large, well-crafted projectile points and other stone tools. Following the Paleo-Indian period was the Archaic period, from 5500 B.C. to A.D. 900. Archaic-period archaeological sites demonstrate a transition from big game hunting to a more generalized hunting and foraging strategy. Technological change marks the transition to the Ceramic period (600/900 A.D. to 1550 A.D.), including the transition from atlatls (spear throwers) to the bow-and-arrow and the introduction of ceramic technology. The Ceramic period is also marked by changes in agriculture and the development of formal architecture (CAFB 2017b).

Spanish exploration of the Llano Estacado and the region around Cannon AFB began with the expedition of Francisco Vasquez de Coronado in 1541 and sanctioned colonization began in the 1590s. Although these efforts focused primarily among the pueblos, Governor Juan de Onate sent occasional parties into the plains to acquire buffalo meat and other provisions. At the time of Coronado's expedition in 1541, the area around Cannon AFB was primarily home to Apache groups, as well as a group Coronado referred to as the Teyas, possibly the Jumanos (Sebastian and Levine 1989 in CAFB 2017b). In the 1700s, the Comanche began to establish themselves in northern and eastern New Mexico, eventually driving out the Apache. The Comanche also clashed with the Spanish and Puebloans until a series of campaigns against the Comanche that resulted in peace in 1786 and increased trade. Trade between the plains and the pueblos



Data Source: World Imagery, Cannon AFB GIS 2017

Figure 3-6. Cultural Resources APE with Proposed Facility Construction and Infrastructure Improvement Projects



Data Source: Cannon AFB Aerial Imagery 2015

Figure 3-7. Cultural Resources APE with Proposed Demolition Projects

continued under the Spanish and intensified under the Mexican administration, especially upon the opening of the Santa Fe Trail in 1821.

Traffic along the Santa Fe Trail eventually led to increased conflict, and upon taking control of New Mexico in 1848, the United States constructed a series of forts along the route. Cattle ranching became an important economic activity in the plains of eastern New Mexico in the 1860s and 1870s, and both cattle ranching and homesteading increased after construction of the railroad in the 1890s. Construction of the Belen Cutoff, which connected the Texas Panhandle and eastern New Mexico, in 1903 stimulated settlement in the area around Cannon AFB and a number of small towns and railroad sidings established in the following decades, including Riley Switch in 1906, which eventually became the town of Clovis.

In 1929, the Transcontinental Air Transport dedicated Portair Field at Clovis that offered train-plane service linking New York City and Los Angeles. After 15 months, advances in aircraft technology reduced the demand for the railroad component of the service, and service was suspended to Clovis. The airfield was renamed the Clovis Municipal Airport and in 1942, the facility became Army Air Base, Clovis, New Mexico, and provided tactical training for bombardment aircrews. The airfield was redesignated Clovis Army Air Field upon the arrival of the first B-29s in February 1945. Activity slowed after World War II and the airfield experienced periods of inactivity and changing management until 1957 when it was designated a permanent installation and renamed Cannon AFB. The 27th Tactical Fighter Wing activated at Cannon AFB in 1957. During the Cold War, the 27th Tactical Fighter Wing participated in the Cuban Missile Crisis, Berlin Wall Crisis, and participated in a number of operations during the Vietnam War.

Archaeological surveys of Cannon AFB were completed in 1987, 1994, 2012, 2014, and 2015 (CAFB 2017b, Graves et al. 2015). The 1987 survey, conducted by Mariah Associates Inc., covered 388 acres and focused on six noncontiguous parcels considered to be less disturbed than other areas of the main base. The New Mexico SHPO has since determined the 1987 survey does not meet modern standards. In 1994, the New Mexico Department of Transportation conducted a survey of 16 acres near the main gate. A 9-acre area around the main gate was also surveyed in 2012 and a 10-acre area in the southeast part of the installation was surveyed in 2014. In 2015, Cannon AFB surveyed 100 acres in the southwest and northeast portions of the installation. The remainder of the installation is typically heavily disturbed areas within the airfield and cantonment area and is not likely to contain archaeological sites. Cannon AFB contains two prehistoric archaeological sites and four historic archaeological sites (CAFB 2017b, Condon et al. 2014, Graves et al. 2015, DeCunzo et al. 2017). Two historic sites are recommended eligible for NRHP listing and the remaining four sites are recommended not eligible. The SHPO has concurred with the NRHP evaluation for the two eligible sites and one ineligible historic site (Condon et al. 2014, Graves et al. 2015).

Architectural inventories of Cannon AFB were completed in 1994, 2004, 2005, and 2006 that, taken together, evaluated all buildings on the installation constructed from pre-World War II through the Cold War (pre-1991). In 2006, a base-wide architectural inventory evaluated or reevaluated all buildings constructed before 1991 for their eligibility for listing in the NRHP. The inventory recommended only one architectural resource on the installation as eligible for NRHP

listing, a flagpole designated as Building 2 located in front of Building 1 (Wing HQ) (CAFB 2017b). NRHP evaluations for all buildings constructed prior to the end of the Cold War (pre-1991) were presented in Cannon AFB's 2009 ICRMP (CAFB 2009), which received concurrence from the SHPO.

Five federally recognized tribes have an expressed or potential interest in Cannon AFB cultural resources: the Comanche Tribe of Oklahoma, the Apache Tribe of Oklahoma, the Jicarilla Apache Tribe, the Mescalero Apache Tribe, and the Kiowa Tribe of Oklahoma. Cannon AFB consults with these tribes on issues related to cultural resource management, the unanticipated discovery of human remains and cultural items under NAGPRA, and on project-specific effects under Section 106 of the NHPA. To date, these tribes have not identified any sacred sites or traditional cultural properties on the main base. Cannon AFB has invited these tribes to consult on the Proposed Action.

3.9 Hazardous Materials and Wastes

3.9.1 Definition of Resource

Hazardous materials are defined by 49 CFR § 171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR § 172.101), and materials that meet the defining criteria for hazard classes and divisions" in 49 CFR § 173. Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA) at 42 USC § 6903(5), as amended by the Hazardous and Solid Waste Amendments, as: "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in, mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed".

AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the USAF to be in compliance with the Emergency Planning and Community Right-to-Know Act, and applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who manage, monitor, or track any of those activities. Under AFI 32-7086, USAF has established roles, responsibilities, and requirements for a hazardous materials management program. The purpose of the hazardous materials management program is to control the procurement and use of hazardous materials to support USAF missions, ensure the safety and health of personnel and surrounding communities, and minimize USAF dependence on hazardous materials. The Cannon AFB Hazardous Materials Program Manager (27 Special Operations Civil Engineer Squadron [SOCES]/CEIE) is responsible for the overall management of the hazardous materials program on Canon AFB.

Hazardous substances that might pose a risk to human health are addressed separately from other hazardous substances and are referred to as special hazards. Special hazards include asbestos-containing materials (ACMs), PCBs, and lead-based paint (LBP). The potential presence, location, quantity, and condition of special hazards assists the USAF in determining

the significance of a proposed action. USEPA regulates these special hazard substances under the authority of the Toxic Substances Control Act (15 USC § 53). USEPA has established regulations regarding asbestos abatement and worker safety (40 CFR § 763), with additional emissions regulations (40 CFR § 61). Whether from LBP abatement or other activities, depending on the quantity or concentration, the disposal of the LBP waste is regulated by the RCRA at 40 CFR § 260. The disposal of PCBs is addressed in 40 CFR §§ 750 and 761.

The Defense Environmental Restoration Program was established by Section 211 of the Superfund Amendments and Reauthorization Act of 1986 (10 USC §§ 2701–2707). The ERP was developed to facilitate thorough investigation and cleanup of contaminated sites on military installations (i.e., active installations, installations subject to Base Realignment and Closure, and Formerly Used Defense Sites). The Installation Restoration Program (IRP) and Military Munitions Response Program (MMRP) are components of the ERP. The IRP requires each DoD installation to identify, investigate, and clean up hazardous waste disposal or release sites. The MMRP addresses non-operational rangelands that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituent contamination.

For the USAF, the management of hazardous materials, hazardous wastes, and special hazards is covered in Air Force Policy Directive 32-70, *Environmental Quality*, and Air Force Regulation 32-7000 series, which incorporates the requirements of all federal regulations and other AFIs and DoD Directives.

3.9.2 Affected Environment

Hazardous Materials and Petroleum Products. There are 95 ASTs at Cannon AFB. The ASTs range in size and function from a 60-gallon diesel fuel AST to 840,000-gallon ASTs for jet petroleum. All ASTs are provided with secondary containment and most fuel transfers occur on paved surfaces to minimize the potential for impacts to natural resources should a spill occur. Three gasoline underground storage tanks are located at the fuel service station on the installation. Spill prevention and cleanup are actively practiced in accordance with the Cannon AFB Spill Prevention and Response (SPR) Plan (CAFB 2017d), which addresses storage locations and proper handling procedures of all hazardous materials to minimize potential spills and releases. This plan further outlines activities to be undertaken to minimize the adverse effects of a spill, including notification, containment, decontamination, and cleanup of spilled materials.

Hazardous and Petroleum Wastes. Cannon AFB maintains a Hazardous Waste Management Plan (CAFB 2017e) as directed by AFI 32-7042, *Waste Management*. The Plan describes the roles and responsibilities of all entities at Cannon AFB with regard to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention and establishes the procedures to comply with federal, state, local, and USAF hazardous waste management requirements. Cannon AFB is classified as a RCRA large-quantity generator of hazardous waste and operates under USEPA ID number NM7572124454.

Environmental Restoration Program. Cannon AFB initiated its ERP in 1983, and in 1987 applied for a RCRA Part B Permit (NM7572124454) to store hazardous waste which triggered a

RCRA Facility Assessment. A total of 179 SWMUs and AOCs were identified as a result of the assessment (CAFB 2016b). Cannon AFB is no longer a designated Treatment, Storage, and Disposal facility for hazardous wastes and the RCRA Part B permit is classified as "Corrective Action Only" for the investigation and potential remediation of the identified SWMUs and AOCs. The permit is divided into three Tables that serve to classify the SWMU and AOC sites in terms of remediation status: Table 1 – sites requiring corrective action, Table 2 – sites that are closed to Response Complete (closed with controls), and Table 3 – sites that are closed to Site Closure (unrestricted use/unrestricted exposure). Subject to NMED approval, 9 sites are on Table 1 (3 of which are in "deferred" status until the sites are no longer in use and can be investigated and remediated accordingly), 141 sites are on Table 2, and 29 sites are on Table 3. Further, there are seven landfills at Cannon AFB (Landfills 1, 2, 3, 4, 5, 25, and SWMU 101) that are closed with Response Complete and undergo yearly inspections and maintenance as required. As part of the permit requirements, Cannon AFB conducts a biennial groundwater monitoring program consisting of a total of 18 groundwater monitoring wells. Results from the sampling efforts are reported to NMED on a biennial basis. The remaining six SWMUs that are not in deferred status will undergo investigation and remediation as required to bring the sites to closure through the "Permit Modification Process" as stipulated in 40 CFR § 270.42 (CAFB 2016b, Kottkamp 2018).

Figure 2-1 shows the ERP sites proximate to the proposed construction projects. All of the ERP sites near the proposed construction and demolition sites are closed except for SWMU 77 (Civil Engineering container storage area site) and SWMU 108 (Active Explosive Ordnance Disposal Training Area), both of which are currently in deferred status. No active ERP Sites are located within the boundaries of any ground-disturbing activities associated with the proposed construction and demolition projects. However, the surface danger zone for the CATM (Project C1) is proposed to extend into AOC E, which is a closed site, and the Alternative C8-2 footprint overlaps AOC M, but that site is also closed. There is one MMRP site (TS-835) at Cannon AFB which is not near the proposed construction and demolition sites.

Special Hazards. There is the potential for buildings proposed for demolition to contain ACM, LBP, and PCBs. Based on the age of each building and facility proposed for demolition, **Table 3-11** identifies the special hazards that could potentially occur at each demolition project.

Radon. Radon gas is typically found in underground or enclosed spaces. Cannon AFB is within an area with moderate predicted average indoor radar screening (between 2 and 4 picocuries per liter) (USEPA 2017).

3.10 Health and Safety

3.10.1 Definition of Resource

A safe environment is one in which the potential for death, serious bodily injury, illness, or property damage is reduced to the greatest extent practicable. Human health and safety addresses health and safety for the public and workers during construction, demolition, and operations and training activities. Site safety is achieved by following regulatory requirements imposed for the benefit of employees and the public. Site safety includes implementation of engineering and administrative practices that aim to reduce risks of illness, injury, death, and

Table 3-11. Special Hazards that could be Present at Demolition Projects

Project ID	Building Number	Size	Year Built	Description	Special Hazards Concern
Fiscal Year 2018					
D1	1162	250 ft^2	1974	Support Storage for Building 1156 (Dormitory)	ACM, LBP, PCBs
D2	1154	514 ft^2	1991	Support Storage for Building 1156	None
D3	1163	231 ft^2	1974	Support Storage for Buildings 1158/1160 (Dormitories)	ACM, LBP, PCBs
D4	375	1 kg/m^3	1968	Oil/water separator (OWS) at Vehicle Maintenance Facility	None
D5	1801	3,780 ft^2	1968	Lodging Support	ACM, LBP, PCBs
D6	4029	2,847 linear feet	1943	Steam Heat Mains	ACM
D7	150	9,900 ft^2	1967	Squadron Operations Facility	ACM, LBP, PCBs
D8	1399	288 ft^2	1984	Medical Warehouse	ACM
D9	1397	950 ft^2	1987	Ambulance Shelter	ACM
D10	133	32,754 ft^2	1993	Maintenance Hangar	None
D11	2304	240 ft^2	1993	Traffic Check House	None
D12	2311	5,200 ft^2	2010	Traffic Check House	None
D13	2209	678 ft^2	1987	Visitor Control Center	ACM
D14	2220	250 ft^2	2004	Traffic Check House	None
D15	2310	256 ft^2	2012	CATM Dust Control Maintenance Building	None
D16	2312	3,350 ft^2	1961	General Purpose Small Arms Range	ACM, LBP, PCBs
D17	2313	3,315 ft^2	2005	Pad for Purchased Storage Building	None
D18	2314	1,677 ft^2	2005	CATM Auxiliary Building	None
D19	2315	2,667 ft^2	1986	CATM Maintenance Building	ACM
D20	2317	70,000 ft^2	1986	Skeet Range	ACM
D21	6012	59,400 ft^2	1956	Compass Calibration Pad	ACM, LBP, PCBs
D22	2318	756 ft^2	1994	Rod and Gun Club	None
Fiscal Year 2019					
D23	620	32,474 ft^2	1961	Deployment Processing Facility	ACM, LBP, PCBs
D24	130	16,615 ft^2	1960	Explosive Ordnance Disposal Facility	ACM, LBP, PCBs
Fiscal Year 2020+					
D25	215	11,387 ft^2	1960	Defense Reutilization Marketing Office/ Honor Guard/ Lighthouse	ACM, LBP, PCBs
D26	1254	16,734 ft^2	1958	Airmen Leadership School	ACM, LBP, PCBs
D27	76	8,181 ft^2	1976	Thrift Shop	ACM, LBP, PCBs
D28	1	14,815 ft^2	1960	Wing HQ	ACM, LBP, PCBs
D29	60	11,643 ft^2	1962	Law Center	ACM, LBP, PCBs
D30	335	9,620 ft^2	1955	Vehicle Maintenance Facility	ACM, LBP, PCBs
D31	375	9,058 ft^2	1968	Vehicle Maintenance Facility	ACM, LBP, PCBs
D32	379	13,426 ft^2	1965	Vehicle Maintenance Facility	ACM, LBP, PCBs
D33	438	5,848 ft^2	1990	Vehicle Operations Parking Shed	ACM, LBP

Project ID	Building Number	Size	Year Built	Description	Special Hazards Concern
Fiscal Year 2020+ (continued)					
D34	226	3,971 ft^2	1985	Base Engineer Warehouse	ACM
D35	227	2,320 ft^2	1990	Base Engineer Storage Facility	ACM
D36	198	27,580 ft^2	1991	SOF Squadron Operations Facility	None
D37	202	1,124 ft^2	1953	Hazardous Materials Storage Facility	ACM, LBP, PCBs
D38	218	250 ft^2	1981	Liquid Oxygen Storage Facility	ACM
D39	229	846 ft^2	1992	Aircraft Maintenance Shop	None

property damage. The Occupational Safety and Health Administration (OSHA), through the Occupational Safety and Health Act and other relevant laws, ensures safe and healthful working conditions by setting and enforcing standards and by providing health and safety training, outreach, education, and assistance. The health and safety of on-site military and civilian workers are also safeguarded by numerous DoD and USAF regulations designed to comply with the standards issued by OSHA and USEPA. These include the amount and type of safety training required for workers, the use of personal protective equipment (PPE), administrative controls, engineering controls, and permissible exposure limits for workplace stressors.

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

3.10.2 Affected Environment

Construction Safety. All personnel involved with USAF activities on Cannon AFB are responsible for following ground safety regulations. Contractors are responsible for following workers' compensation programs and are required to conduct construction activities in a manner that does not pose any risk to workers or personnel. Construction contractors are responsible for reviewing potentially hazardous workplace operation, monitoring exposure to workplace chemicals such as ACM and LBP, and mitigating for physical hazards such as noise exposure and biological agents. Construction contractors are required to recommend and evaluate controls such as PPEs to ensure personnel are properly protected and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures.

Operations Safety. The USAF host and tenant safety offices are responsible for implementing AFI 91-202. The Wing Safety Office implements mishap prevention programs and processes for all 27 SOW programs on Cannon AFB. Safety staff at all levels assist with implementation and integration of operational risk management in all USAF operations and missions. Detailed standard operating procedures fulfill many health and safety requirements, and personnel

involved with different test equipment are instructed on the proper use of equipment and PPE. Surface danger zones are delineated for all small arms and explosives ranges to protect personnel operating inside and outside those ranges while they are active.

Explosive safety clearance zones are established around facilities used for storage, handling, or maintenance of munitions to safeguard military and civilian communities. Air Force Manual 91-201, *Explosives Safety Standards*, establishes the size of clearance zones based on quantity-distance criteria or the category and weight of the explosives contained within the facility. ESQD arcs have been established at Cannon AFB to ensure that minimum safety distance is present where explosions could occur. ESQD arcs cover 1,131 acres of Cannon AFB (approximately 26 percent of the Cannon AFB land area). Cannon AFB Equipment Maintenance Squadron's Munitions Flight controls, maintains, and stores all ordnance and munitions required for mission performance. Ordnance is handled and stored in accordance with USAF explosive safety directives and all munitions maintenance is carried out by trained, qualified personnel using USAF-approved technical data.

USAF has designated AICUZs around Cannon AFB to recommend compatible uses in areas subject to noise and accident hazards. The designation of AICUZs ensures compatible development around the airfield and provides for the health, safety, and welfare of personnel from noise and airfield hazards.

3.11 Socioeconomics

3.11.1 Definition of Resource

Socioeconomic Resources. Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly characteristics of population and economic activity. Regional birth and death rates and immigration and emigration affect population levels. Economic activity typically encompasses employment, personal income, and industrial or commercial growth. Changes in these fundamental socioeconomic indicators typically result in changes to additional socioeconomic indicators, such as housing availability and the provision of public services. Socioeconomic data at local, county, regional, and state levels permit characterization of baseline conditions in the context of regional and state trends.

Demographics, employment characteristics, and housing occupancy status data provide key insights into socioeconomic conditions that might be affected by a proposed action. Demographics identify the population levels and the changes in population levels of a region over time. Demographics data might also be obtained to identify a region's characteristics in terms of race, ethnicity, poverty status, and other broad indicators. Data on employment characteristics identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on personal income in a region can be used to compare the "before" and "after" effects of any jobs created or lost as a result of a proposed action. Data on industrial or commercial growth or growth in other sectors of the economy provide baseline and trend line information about the economic health of a region. Housing statistics provide baseline information about the local housing stock, the percentage of houses that are occupied, and the ratio of renters to homeowners. Housing statistics allow for baseline information to evaluate the impacts a proposed action might have upon housing in the region.

In appropriate cases, data on an installation's expenditures in the regional economy help to identify the relative importance of an installation in terms of its purchasing power and influence in the job market.

Socioeconomic data shown in this section are presented at census tract, county, and state levels to characterize baseline socioeconomic conditions in the context of regional and state trends.

Environmental Justice. EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of a proposed action. Such information aids in evaluating whether a proposed action would render vulnerable any of the groups targeted for protection in the EO.

The Proposed Action and Alternatives would occur entirely within an existing USAF installation. There would be short- and long-term beneficial effects on socioeconomic resources in the surrounding community because of expenditures from the implementation of the proposed construction, demolition, and infrastructure improvements as described further in **Section 4.11.3**. There would be no measureable adverse impact, disproportionate or otherwise, on low income or minority communities inside or outside of the installation. Therefore no analysis of Environmental Justice populations is included in this report.

3.11.2 Affected Environment

Cannon AFB is located in rural west New Mexico 7 miles southwest of Clovis near the Texas border. For the purposes of this socioeconomic analysis, three different spatial levels are used:

1. Census Tract 9 which encompasses only the installation
2. Curry County, New Mexico
3. State of New Mexico.

Census Tract 9 best illustrates socioeconomic characteristics for Cannon AFB and where most impacts from the Proposed Action would be expected because it fully encompasses the installation and all the proposed construction and demolition projects would occur on the installation. Curry County is considered the region of influence (ROI) because most of the construction workers and supplies for the Proposed Action would likely come from the nearest residential and developed areas which are within the county. The state data is provided for comparison.

Demographics. All of the spatial levels have trended toward an increase in population between 2010 and 2015 as presented in **Table 3-12**. The greatest population increase trend occurred in Census Tract 9.

Table 3-12. Population Data for Spatial Levels in 2010 and 2015

Area Analyzed	Population	
	2010	2015
Census Tract 9	2,245	2,575
Curry County (ROI)	48,376	50,497
New Mexico	2,059,179	2,084,117

Sources: USCB 2010, USCB 2015

Note: Numbers presented in the 2015 Population column are based on estimates from the American Community Survey. The 2015 data represent 5-year estimates from 2011 to 2015 and are intended to provide a more precise estimate of current conditions.

Employment Characteristics. As of 2015, Census Tract 9 had 33 percent of the workforce (more than 16 years old and in the labor force) employed in the armed forces. This is considerably more than the other spatial levels, but expected because of the presence of Cannon AFB. In contrast, 4 percent of the labor force in Curry County and 0.4 percent in New Mexico were employed in the armed forces. The industry that employed the highest percentage of the population for Census Tract 9 was public administration. The educational, health, and social services industry was the most common employer for Curry County and New Mexico (USCB 2015). See **Table 3-13** for complete information regarding employment by industry.

The unemployment rate is 4.6 percent in Census Tract 9 and 5.4 percent in both Curry County and the state (USCB 2015). The employment rates by area and type is also presented in **Table 3-13**.

Economic growth in the county is heavily reliant on Cannon AFB, which has historically been the largest employer. According to the Curry County Comprehensive Plan, 26 percent of available jobs in Curry County would be projected to be lost if the installation closed. Prior to the change of mission in 2006, approximately 3,846 military personnel and 1,039 civilian personnel were employed by the installation. Cannon AFB was estimated at that time to have an economic impact of almost $300 million per year (Curry County 2011). By 2015, Cannon AFB's total impact on the local economy reached approximately $666.5 million. Cannon AFB is the largest employer in Curry County and created 1,888 indirect jobs valued at $73.4 million in 2015 (MyBaseGuide 2017).

Housing Characteristics. In 2015, the U.S. Census Bureau reported that there were 818 housing units in Census Tract 9. Of these, 32 were vacant, resulting in a 3.9 percent vacancy rate. There were only 3 owner-occupied units in Census Tract 9, or 1.1 percent of all occupied units, while the remaining 98.9 percent were renter-occupied units such as those owned by Cannon AFB for USAF personnel residing on the installation. In 2015, the U.S. Census Bureau reported that there were 20,574 housing units in Curry County. Of these units, 2,412 were vacant, resulting in an 11.7 percent vacancy rate. Owner-occupied units in Curry County totaled 10,601 units, or 58 percent of all occupied units, while the remaining 42 percent were renter-occupied units (USCB 2010).

Table 3-13. Employment Characteristics Percentages by Industry for 2011 to 2015

Employment Type	Census Tract 9	Curry County (ROI)	New Mexico
Population 16 Years and Over in the Labor Force[1]	620	20,599	876,035
Percent of population 16 years and over in labor force employed within the armed forces	32.7	4.0	0.4
Percent Employed Persons 16 years old and over in Civilian Labor Force (by industry)			
Agriculture, forestry, fishing and hunting, and mining	0	7.2	4.5
Construction	1.1	7.0	6.8
Manufacturing	1.0	4.6	4.7
Wholesale trade	4.5	2.4	2.2
Retail trade	1.5	10.8	11.3
Transportation and warehousing, and utilities	5.2	9.3	4.5
Information	0.0	1.4	1.6
Finance, insurance, real estate, and rental and leasing	1.8	3.9	4.5
Professional, scientific, and management, and administrative and waste management services	7.9	6.2	11.2
Educational, health, and social services	15.2	23.2	25.1
Arts, entertainment, recreation, accommodation, and food services	9.5	8.4	11.1
Other services (except public administration)	3.7	5.1	4.8
Public administration	48.7	10.7	7.7

Source: USCB 2015

[1]Labor force includes persons that are employed or unemployed civilians and members of the armed forces.
Note: Numbers present in this table are percentages based on estimates from the 2011-2015 ACS 5-year Estimates.

4. Environmental Consequences

4.1 Introduction

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

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

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

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

4.1.1 Noise

The impacts associated with noise were evaluated based on the changes to the ambient noise environment that would be caused by the implementation of a proposed action. An action could have a significant effect with respect to noise if sensitive noise receptors were exposed to noise in excess of applicable standards, or if noise levels created appreciable areas of incompatible land use.

4.1.2 Air Quality

The environmental consequences to local and regional air quality conditions near a proposed federal action are determined based upon the increases or decreases in regulated air pollutant emissions, and upon existing conditions and ambient air quality. The evaluation criteria are dependent on whether a proposed action is located in an attainment, nonattainment, or maintenance area for criteria pollutants. Other evaluation criteria include whether Major New Source Review (NSR) air quality construction permitting is triggered or Title V operating permitting is triggered. Major NSR air quality permitting is divided into Nonattainment Major NSR for nonattainment pollutants and PSD permitting for attainment pollutants. All of these evaluation criteria are discussed as follows.

Attainment Area Pollutants. The attainment area pollutants for the location of this Proposed Action are CO, NO_2 (measured as NO_x), SO_2, Pb, PM_{10}, $PM_{2.5}$ and O_3 (measured as NO_x and VOCs). The impact in NAAQS “attainment” areas would be considered significant if the net increases in these pollutant emissions from a federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard.
- Expose sensitive receptors to substantially increased pollutant concentrations.
- Exceed any Evaluation Criteria established by a SIP.
- Increase stationary plus mobile source emissions of 250 tpy for any attainment criteria pollutant (NO_x, VOCs, CO, PM_{10}, $PM_{2.5}$, SO_2).

Although the 250 tpy stationary plus mobile source threshold is not a regulatory driven threshold, it is being applied as a conservative measure of significance in attainment areas. The rationale for this conservative threshold is that it is consistent with the threshold for a PSD major source in attainment areas.

Stationary emissions sources subject to NSR air permitting, including minor NSR, are not required to be counted towards the General Conformity *de minimis* thresholds. The reasoning for this exclusion is that by meeting the criteria and going through the approval process with the appropriate Federal, state, or local air quality permitting authority, these emissions sources are demonstrating that they are in conformity with the SIP. The following text is a discussion of the levels of stationary source emissions that would have significant air permitting impacts.

For GHG, the evaluation criteria of 75,000 mtpy is used as discussed in **Section 3.2.1**.

4.1.3 Land Use

A comparative methodology is used to determine potential impacts on land use. Construction, demolition, operations are examined and compared to existing land use conditions. Impacts are evaluated as they relate to the following:

- Compatibility of the proposed activities with existing and future land use and land use designations at the proposed project sites and in the surrounding areas
- Availability of sufficient land within the appropriate land use designation for the proposed activities.

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

4.1.4 Infrastructure and Transportation

Impacts on infrastructure are evaluated based on their potential for disruption or improvement of existing levels of service and additional needs for energy and water consumption, sanitary sewer and wastewater systems, and transportation patterns and circulation. Impacts might arise from physical changes to circulation, construction activities, introduction and use of construction-related traffic on local roads or changes in daily or peak-hour traffic volumes, and

energy needs created by either direct or indirect workforce and population changes related to installation activities. An effect might be considered adverse if a proposed action exceeded capacity of a utility. A proposed action could have a significant effect with respect to infrastructure if the following were to occur:

- Exceedance of a utility's capacity
- Long-term interruption of a utility
- Violation of a permit condition
- Violation of an approved plan for that utility.

4.1.5 Geological Resources

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

- destruction and loss of prime and unique farmlands
- destabilization of soils
- changes affecting local and regional geology
- removal of unique geologic features.

4.1.6 Water Resources

Evaluation criteria for effects on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. A proposed action could have significant effects with respect to water resources if any of the following were to occur:

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

4.1.7 Biological Resources

Potential effects on biological resources are evaluated based on the following criteria:

- Importance (e.g., legal, commercial, recreational, ecological, scientific) of the resource

- Proportion of the resource that would be affected relative to its occurrence in the region
- Sensitivity of the resource to proposed activities
- Duration of ecological impacts
- Potential for "taking" of federally listed species
- Effect on ESA-protected species habitat.

Effects on biological resources would be considered significant if species or habitats of concern based on legal status or ecological importance were adversely affected over large areas. Effects would also be considered significant if disturbances cause reductions in population size or distribution that would jeopardize the continued existence of a species.

Construction, demolition, operations, and associated noise could potentially result in direct adverse effects on biological resources. Direct effects are evaluated by identifying the types and locations of potential ground-disturbing activities relative to important biological resources. To evaluate the effects of noise, considerations were given to the number of individuals or critical species involved, type of stressors involved, and magnitude of the effects.

4.1.8 Cultural Resources

Impacts on cultural resources include potential effects on buildings, sites, structures, districts, and objects eligible for or included in the NRHP; cultural items as defined in the NAGPRA; archaeological resources as defined by the Archaeological Resources Protection Act of 1979; and archaeological artifact collections and associated records as defined by 36 CFR § 79.

Under Section 106 of the NHPA, a proposed action might have no effect (i.e., no historic properties affected), no adverse effect, or an adverse effect on historic properties. An adverse effect occurs "when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" (36 CFR § 800.5(a)(1)). Specifically, adverse effects on historic properties can include any of the following:

- Physically altering, damaging, or destroying all or part of a resource
- Altering characteristics of the surrounding environment that contribute to the resource's significance
- Introducing visual or audible elements that are out of character with the property or that alter its setting
- Neglecting the resource to the extent that it deteriorates or is destroyed
- Selling, transferring, or leasing the property out of agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance.

An adverse effect under the NHPA could be a less than significant impact under NEPA, depending on the context and intensity of the impact.

4.1.9 Hazardous Materials and Wastes

Impacts on hazardous materials and wastes could be considered significant if a proposed action could:

- Result in noncompliance with applicable federal and state regulations.
- Cause disturbance or creation of contaminated sites resulting in adverse effects on human health or the environment.
- Increase the amount of hazardous waste generated at Cannon AFB beyond established management policies, procedures, permits, and handling capacities.
- Make it substantially more difficult or costly to remediate existing contaminated sites.

4.1.10 Health and Safety

A proposed action could have a significant effect on health and safety if it interferes with the ability for emergency responders to attend to an emergency, introduces a new health and safety risk for which there is not a planned response, or substantially increases risks associated with the health and safety of construction personnel, contractors, or the local community.

4.1.11 Socioeconomics

Impacts associated with socioeconomic resources are evaluated based on the changes to demographics, employment, or housing caused by the implementation of a proposed action. An action could have a significant effect with respect to socioeconomic resources if it greatly increased or decreased population, employment type, or housing availability when compared to the larger areas of study such as the census tract compared to the county.

4.2 General Environmental Consequences of the Proposed Action by Resource Area

4.2.1 Noise

Noise from demolition and construction under the Proposed Action would result in short-term, negligible to minor, adverse effects on the ambient noise environment at Cannon AFB. Increases in noise levels would occur intermittently during demolition and construction. Noise from these activities would vary depending on the type of equipment being used, the area in which the action would occur, and the distance of the receptor from the noise source. Heavy construction equipment would be used periodically during construction; therefore, noise levels would fluctuate. Most equipment used would be expected to produce noise levels between 70 and 95 dBA at a distance of 50 feet (see **Table 3-2**). Noise levels at the upper end of this range would be associated with equipment such as pile drivers and limited to intermittent spurts. Sound levels on the lower end of the range would be more constant during construction activities. These noise levels would decrease with distance from the project areas. Noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between approximately 500 and 4,000 feet from the source, depending on the equipment in use. As depicted in **Figure 2-1**, the Proposed Action would occur within developed areas where ambient noise such as traffic and aircraft could regularly exceed 65 dBA. During construction,

trucks would travel to and from the project area. Because of the existing ambient noise environment of the project area and surrounding areas, negligible effects would be expected from the increase in truck noise, as those sounds would not incrementally increase existing ambient noise levels.

Demolition and construction usually require several pieces of equipment to be used simultaneously. In general, the addition of a piece of equipment with identical noise levels to another piece of equipment would add approximately 3 dB to the overall noise environment (TRS Audio Undated). Additive noise associated with multiple pieces of construction equipment operating simultaneously would increase the overall noise environment by a few dB over the noisiest equipment, depending on the noise levels; therefore, impacts would be negligible to minor. In addition, noise generation would only occur for the duration of construction and would be confined to normal workdays and working hours (i.e., 7 a.m. to 5 p.m.). All applicable noise laws and guidelines would be followed to reduce effects from noise produced by construction activities. Workers would be required to use proper personal hearing protection in accordance with Air Force Occupational Safety and Health (AFOSH) Standard 48-20, *Operational Noise and Hearing Conservation Program*, to limit exposure. Appropriate noise attenuation equipment would also be used where applicable.

4.2.2 Air Quality

Emissions Estimates. Short-term, minor to moderate, adverse effects on air quality would be expected from the implementation of the Proposed Action. Demolition and construction would generate air pollutant emissions from site-disturbing activities such as grading, excavating, filling, compacting, and trenching; and the operation of construction equipment and haul trucks transporting construction supplies and demolition debris. Construction activities would also generate particulate emissions as fugitive dust from ground-disturbing activities and from the combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the work phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of activity. Construction activities would incorporate environmental protection and control measures (e.g., frequent use of water for dust-generating activities) to minimize fugitive particulate matter emissions. Additionally, the work vehicles are assumed to be well-maintained and could use diesel particulate filters to reduce emissions. Construction workers commuting daily to and from the job site in their personal vehicles would also result in criteria pollutant air emissions.

Long-term, minor, beneficial effects on air quality would be expected from a reduction of emissions under the Proposed Action. The use of new boilers, furnaces, and an emergency generator at the buildings proposed for construction would, by themselves, increase air emissions from Cannon AFB. Overall, the Proposed Action results in the construction of more heated building space, in terms of square feet, than the amount of demolition that has heated space. However, the demolition of older and less energy-efficient buildings would remove older and more emissions-intensive boilers, furnaces, and emergency generators/fire pump engines at the installation and decrease air emissions. Therefore, there would be an expected overall net decrease in stationary fuel combustion source emissions at the installation.

As shown in **Table 4-1**, the overall estimated annual emissions from all of the Proposed Action projects combined, for demolition, construction, and operational activities, would be well below the air quality impacts significance criteria (250 tpy for criteria pollutants and 75,000 mtpy for GHG). This table shows annual emissions from the starting year for the Proposed Action through the first steady-state year in 2029, which is when all demolition and construction projects would be complete and operational emissions under the Proposed Action would begin to remain the same from that year forward. Therefore, it is expected that ambient air quality standards would not be exceeded and no significant impacts on air quality would occur under the Proposed Action. Instead, there would be an overall net long-term benefit on air quality because operational emissions would slightly decrease after completion of all construction and demolition projects, particularly with to the removal of the water tower booster pumps. The USAF Air Conformity Applicability Model (ACAM) calculated the overall summary of emissions report by year. The ACAM summary report (provided in **Appendix B**) uses 100 tpy as the air quality significance indicator; however, that significance threshold is not used for this EA. If the 100 tpy were to be used instead of the 250 tpy threshold being used, the overall conclusion of no significant air quality impacts would remain the same because annual criteria pollutant emissions from the Proposed Action would also be below 100 tpy. Further information and details on the individual air quality effects from the selected projects are included in **Section 4.3**.

Table 4-1. Estimated Annual Air Emissions Increases/Decreases Resulting from the Proposed Action

Calendar Year	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2e mtpy
2018	10.456	1.621	8.769	0.019	30.278	0.541	1,653.28
2019	11.745	2.159	10.801	0.024	8.77	0.580	2,085.92
2020	9.528	2.423	10.026	-0.487	32.177	0.000	2,128.82
2021	2.437	0.197	4.259	-0.864	17.587	-0.653	1,058.56
2022	6.079	1.17	9.133	-0.855	11.155	-0.475	1,850.73
2023	0.601	1.25	3.163	-0.869	-0.240	-0.721	616.49
2024	-4.135	-1.010	-2.686	-0.869	-0.922	-0.922	-423.12
2025	-1.148	-0.428	1.845	-0.858	4.536	-0.819	597.17
2026	1.917	0.463	6.110	-0.848	26.448	-0.702	1,445.40
2027	0.469	-0.172	4.054	-0.854	1.222	-0.758	925.41
2028	-2.823	0.273	-0.718	-0.865	-0.324	-0.875	-52.33
2029 (1st Steady-State Year)	-4.255	-1.032	-2.841	-0.869	-0.929	-0.929	-446.33
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

General Conformity. The federal General Conformity rule does not apply to the Proposed Action because Cannon AFB is located in Curry County, which is in attainment for all criteria pollutants. Therefore, a comparison of emissions to General Conformity *de minimis* thresholds is not necessary and a General Conformity determination is not required.

***State-Level Construction Permits*.** Cannon AFB would obtain all necessary air quality construction permits for the Proposed Action as required by NMAC 20.2.72. A New Mexico air quality minor source construction permit would be obtained for all boilers, furnaces, and emergency generators where their potential to emit exceeds the construction permit or approval thresholds provided in NMAC 20.2.72. Cannon AFB could be required to obtain an approval to construct from NMED if a new source is subject to New Source Performance Standards in 40 CFR § 60 or National Emissions Standards for Hazardous Air Pollutants in 40 CFR § 63 or any other New Mexico Air Quality Control Regulation that contains emission limitations for any regulated air contaminant. Unless specifically exempted, a minor source permit is also required for facilities that emit New Mexico Toxic Air Pollutants above certain pounds per hour levels.

Nonattainment NSR, PSD and Title V Air Permitting. Cannon AFB is not located in a nonattainment area for any pollutant; therefore, nonattainment NSR permitting does not apply. Proposed Action emissions increases because of constructing new stationary sources are expected to be offset by the removal of similar sources. Therefore, PSD permitting is not expected to be triggered for the Proposed Action because potential emissions are not expected to be greater than 250 tpy for any criteria pollutant. Only operational emissions increases are evaluated for PSD permitting impacts because construction activity emissions are not subject to the air quality significance criteria for these permit programs. The existing Title V permit is not expected to be impacted other than ensuring the substantial new sources and any associated new applicable requirements are added and the demolished sources are removed from the permit.

Greenhouse Gas Emissions and Climate Change. The annual estimated GHG emissions from the Proposed Action presented in **Table 4-1**, in terms of CO_2e emissions, would be well below the potential indicator of significance of 75,000 mtpy. Over the long-term, there would be a slight decrease in annual GHG emissions, which would have a slight beneficial impact on climate change. The annual increases in GHG emissions during construction activities could contribute some small portion to climate change, but it would only be a very small percentage of regional CO_2e emissions and a miniscule percentage of global CO_2e emissions. USAF has a sustainability program in place for reducing CO_2e emissions through increases in energy/fuel efficiency and using renewable sources where possible. These programs would counteract increases in CO_2e emissions over time but the extent and timetable for these impacts are unknown.

In addition to presenting estimates of GHG emissions that would result from construction and operations at Cannon AFB, climate change could impact the Proposed Action at Cannon AFB through increased temperatures, more severe droughts, and increased severity and frequency of wildfires. The region surrounding Cannon AFB could experience increased summer droughts and wildfires and reduced springtime snow packs, summer stream flows, and water supplies (NOAA 2014). While operations at Cannon AFB are adapting to droughts and scarce water supplies, exacerbation of these conditions in the future could increase the cost of proposed operations and maintenance and could impede operations during extreme events. Additional measures could be needed to mitigate such impacts.

The air permitting and climate change analysis applies to all individual projects and is not discussed further.

4.2.3 Land Use

On Installation. The proposed development projects would result in short-term, negligible to minor, adverse long-term, minor, beneficial impacts on land use. General impacts for all proposed projects and their associated alternatives would be as follows:

- Construction and operation of the proposed projects would be generally consistent with the existing land use designations and operational support functions where they would be constructed and operated. Projects would be implemented in accordance with the Cannon AFB IDP goals for consolidating functional land uses within the installation's planning districts for optimized land use efficiency.
- Short-term, negligible, adverse impacts would occur for several project alternatives sited in areas with existing land use controls, waiver requirements, permitting requirements, development or other use restrictions, and/or land use incompatibilities with surrounding use designations.
- In conformance to the Cannon AFB IDP future planning goals for land use efficiency, land use designations for several project areas would likely be changed to reflect the newly consolidated or relocated functional uses without altering the intent of the original land use designation. This would result in long-term, minor benefits on land use and operational efficiency for the installation
- Short-term, minor, adverse impacts on land use would be expected because of increased construction-related noise. However, these impacts would be temporary, lasting only the duration of construction or demolition for each project, and only during work hours.

Off-Installation. The Proposed Action would result in negligible to minor impacts on land use in the areas surrounding the installation. The physical development of facilities and infrastructure needed to accommodate the proposed projects would not require lands outside of the installation boundaries. Although, in the short term, the noise from construction vehicles, equipment operation, and construction and demolition actions occurring on the installation could be perceptible to off-installation receptors, impacts on surrounding land uses would be negligible and temporary. In the long term, the off-installation land area that would continue to be exposed to noise at or greater than 65 dBA from operations on the installation would remain unchanged following implementation of the proposed projects. Additionally, noise annoyance from activities conducted at the skeet range may be perceptible to off-installation receptors. However, no off-installation land use designations or uses would require changes as a result of the proposed projects.

4.2.4 Infrastructure and Transportation

The Proposed Action would not result in significant adverse impacts on the installation's infrastructure. The following subsections describe the adverse impacts on infrastructure that would result from implementation of the Proposed Action. Long-term, beneficial impacts would

be realized from implementing improved infrastructure projects replacing older substandard facilities with new, more efficient, buildings, utilities upgrades, facility upgrades, and the consolidation of functions. In addition, the Proposed Action would not exceed the installation's utilities capacities, and all new construction would be designed to minimize buildings' electricity/energy and water consumption and optimize construction waste management and stormwater management techniques to the maximum extent practicable.

Utilities

Electrical System. Short-term, negligible, adverse impacts on the electrical system would be expected during demolition and construction associated with the Proposed Action. Short-term electrical interruptions could be experienced when buildings are disconnected from or connected to the Cannon AFB electrical distribution system. However, the discontinuation of electrical services would be temporary and coordinated with area users prior to disconnection.

Long-term, minor, beneficial impacts on electrical systems would be expected from the Proposed Action by demolishing old buildings with outdated electrical systems and constructing new buildings with updated electrical systems.

Water Supply. Short-term, negligible, adverse impacts on the water supply systems would be expected from the Proposed Action. Short-term interruptions could be experienced when buildings are disconnected from or connected to the Cannon AFB water supply system. Any potential disruption of components of the water supply system would be temporary and coordinated with area users prior to starting the work. Construction water needs would be limited and have a negligible effect on the installation's water supply system. Water necessary for construction would be obtained from the existing water supply system.

Long-term, minor, beneficial impacts on the water supply would be expected from the Proposed Action by demolishing old buildings with outdated, inefficient water fixtures. The Proposed Action does not include an increase in personnel; therefore, no long-term increase in water consumption would be expected.

Sanitary Sewer. Short-term, negligible, adverse impacts on the sanitary sewer and wastewater systems would be expected from the Proposed Action. Short-term interruptions could be experienced when buildings are disconnected from or connected to the sanitary sewer and wastewater systems. However, disruption of components of the sanitary sewer and wastewater system would be temporary and coordinated with area users prior to starting the work.

Long-term negligible beneficial impacts on the sanitary sewer and wastewater system are expected because of the increase in water use efficiency associated with construction of new modern facilities.

Stormwater System. Short-term, negligible, adverse impacts would be expected from implementation of the Proposed Action because of temporary disturbance of stormwater systems during construction activities. BMPs associated with construction activities would help minimize adverse effect to the stormwater system by minimizing volume and velocity of stormwater, which would minimize erosion.

Adverse impacts on stormwater runoff would be minimized through the use of federally required design practices (UFC 1-200-02, *High Performance and Sustainable Building Requirements*; UFC 3-210-10, *Low Impact Development*; and 2007 EISA Section 438, *Leadership in Energy and Environment Design*) that require project sites maintain or restore predevelopment site hydrology to the maximum extent technically feasible by using low impact development techniques that infiltrate, store, and evaporate runoff close to its source of origin.

Long-term, minor, adverse impacts on the Cannon AFB stormwater system would be expected as a result of a net increase in impervious surfaces associated with the Proposed Action (see **Section 4.2.6**).

Natural Gas. Short-term, negligible, adverse impacts on the natural gas infrastructure would be expected during demolition and construction associated with the Proposed Action. Short-term interruptions could be experienced when buildings are disconnected from or connected to the Cannon AFB natural gas infrastructure. The discontinuation of natural gas services would be temporary and coordinated with area users prior to disconnection.

Long-term, minor, adverse impacts would be expected from an increase in building space that requires heating and associated increase in natural gas demands. The increased demand would be partially offset by increased efficiency gained through installation of new natural gas systems and by more energy efficient construction.

Liquid Fuels. Long-term, minor, adverse impacts would occur through the consumption of fuels during construction and operation of facilities. Long-term, negligible, beneficial impacts on the liquid fuel supply would be expected as a result of the Proposed Action because of the construction of Project C13 (Refueler Maintenance Facility). The new facility would allow for greater levels of service for the R-11 special purpose refueling vehicle fleet. Additional long-term, negligible, beneficial impacts would be realized through removal of several fuel tanks currently in place to support emergency backup generators and booster pumps associated with buildings and other infrastructure slated for demolition, where generators wouldn't be used in similar proposed new facilities, such as for Project I2 (Water Tower Replacement).

Communications. Short-term, negligible, adverse impacts on the communications systems at Cannon AFB would be expected from the Proposed Action. Short-term interruptions could be experienced when buildings are disconnected from and connected to the communications systems during construction activities. However, work on the communications systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term minor beneficial effect on the communication system would be expected because of implementation of the Preferred Alternative because of removal of outdated communications systems associated with demolition and the installation of upgraded communications systems associated with construction.

Solid Waste. Short-term, minor, adverse impacts would result from increased demolition and construction debris production associated with the Proposed Action. Solid waste generated from the proposed activities would consist of building materials such as solid pieces of concrete, metals (e.g., conduit, piping, and wiring), and lumber. Contractors would be required to recycle

debris to the maximum extent practicable in accordance with applicable USAF and installation policies, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity.

The proposed demolition, construction, and infrastructure improvement projects would result in short-term, minor, and long-term negligible adverse impacts as a result of increased solid waste generation. As indicated in **Table 4-2**, approximately 35,476 tons of solid waste would be generated over the next 10+ years from implementing the selected projects of the Proposed Action. Clean demolition and construction debris (e.g., concrete, asphalt) would be ground, recycled, and used for fill and roadwork rather than disposed of in a landfill, whenever possible.

Table 4-2. Estimated Generation of Construction and Demolition Debris

Proposed Projects	Project Size (ft^2)	Total Debris Generated	
		Pounds	Tons
Demolition	415,000	65,570,000	32,785
Construction	1, 226,000	5,382,140	2,691
		TOTAL	**35,476**

Demolition debris multiplier = 158 pounds/ ft^2
Construction debris multiplier = 4.39 pounds/ ft^2
Source: USEPA 2009

Transportation Network

Short-term, minor, adverse impacts on the transportation network would be expected from implementing the Proposed Action because of increased traffic and parking lot use associated with construction equipment and contractor vehicles. The construction and demolition phases of the Proposed Action would require delivery of materials to, and removal of debris from, construction sites. Construction traffic would compose a small percentage of the total existing traffic on the installation. Many of the heavy construction vehicles would be driven to the site and kept on site for the duration of construction and demolition activities, resulting in relatively few additional trips. The proposed installation development activities would occur at various times and locations on Cannon AFB over a10+-year period, which would further reduce construction traffic. Any potential increases in traffic volume associated with the proposed demolition and construction would be temporary, and installation-wide traffic changes because of intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and memos.

Project I1-1 (Main Gate) and actions with airfield improvements (C1, C3-C6, C11) would have short-term, minor, adverse impacts during construction but would provide long-term minor beneficial impacts on the installation's infrastructure system.

4.2.5 Geological Resources

The Proposed Action would not result in significant effects on geological resources. The following subsections describe the non-significant effects on geological resources that would result from implementation of the Proposed Action. To reduce adverse effects as a result of soil

erosion and sedimentation, an ESCP would be prepared and implemented. No effects on geology would be expected from implementation of the Proposed Action.

Topography. Short-term, negligible, adverse effects would be expected on the natural topography as a result of demolition, site preparation (i.e., grading, excavating, and recontouring), and construction activities under the Proposed Action. The topography of Cannon AFB varies little and only minor grading and excavation would be anticipated to occur. Post-construction topography would not be expected to vary significantly from pre-construction topography. Wind erosion and dust generated from the construction sites could affect the flightline and air traffic, requiring soil stabilization such as watering. Impacts would primarily be limited to occur from demolition (resulting in bare areas that would be re-vegetated) and land grading activities during construction. No long-term effects on topography would be expected as a result of operations of facilities under the Proposed Action.

Geology. Some larger construction projects would likely include foundations or supports installed into the subsurface. However, impacts on geologic resources would be negligible from implementing the Proposed Action because no geologic formations would be substantially altered. Heavy rain events could potentially cause erosion of unstable embankments and denuded soil resulting from excavation and grading activities. Geotechnical analysis should be undertaken for each project site so that site development precautions can be applied during the planning stage. No long-term effects on geology would be expected as a result of operations of facilities under the Proposed Action.

Soils. Short-term, minor to moderate, adverse effects on soils would be expected from implementation of the Proposed Action. The primary effects would be soil compaction, disturbance, and erosion. Compaction of soils would result in disturbance and modification of soil structure. Environmental protection measures described in **Section 5.2** would be implemented as appropriate to minimize erosion and could include installing silt fencing and sediment traps, applying water to disturbed soil to prevent wind erosion, and re-vegetating disturbed areas as soon as possible.

Construction activities would require the use of fuels, oils, lubricants, and chemicals. In the event of a petroleum or chemical spill, the installation's SPR Plan would be followed to quickly contain and remediate a spill. Implementation of environmental protection measures identified in the SPR Plan would minimize the potential impacts on soils. No significant adverse impacts on soils or prime farmlands would be anticipated as a result of implementation of the Proposed Action. No long-term effects on soils would be expected as a result of operations of facilities under the Proposed Action.

Geologic Hazards. Although Cannon AFB is in a geologically and seismically stable location, potential adverse effects on humans and property could occur in the event of earthquake activity. Any new construction under the Proposed Action should be designed consistent with requirements established in UFC 3-310-03, *Seismic Design for Buildings*, and EO 13717, *Establishing a Federal Earthquake Risk Management Standard*, as appropriate to reduce the potential for adverse effects from a seismic event. During implementation of the Proposed Action, no geologic hazards would be created or exacerbated. No long-term effects prompting

increased geologic hazards would be expected as a result of operations of facilities under the Proposed Action.

4.2.6 Water Resources

Short- and long-term, minor, adverse effects on water resources would be expected to result from implementation of the Proposed Action. The net amount of impervious surfaces at Cannon AFB would increase, minor alteration of the natural drainage flows would occur during construction, and the potential removal of groundcover and vegetation could increase soil erosion and sedimentation. Adverse effects would be minimized by implementing BMPs and following an approved ESCP. Projects that would disturb more than 1 acre of land and subject to NPDES permitting by USACE are required to use BMPs to ensure that soil disturbed during construction activities does not impact nearby water bodies, which applies to nearly all the facility construction projects under the Proposed Action. Projects that disturb 10 or more acres (e.g., Project I1) would be required to monitor discharges to ensure compliance with effluent limitations as specified by the permitting authority.

Projects C1, C3, C5, C6, C8, and I1 would occur fully or partially in the 100-year floodplain. Construction activities in the floodplain would increase stormwater runoff and the potential for storm-related damage to infrastructure, facilities, and possibly human safety, resulting in long-term, minor, adverse impacts on the floodplain. Implementation of all selected projects will result in an increase of approximately 991,500 ft^2 (see **Table 1-1**) of impervious surfaces. Impacts would be minimized through design, siting, and proper implementation of environmental protection measures described in **Section 5.2**. Additionally, an approved ESCP would be followed during construction, and construction BMPs in accordance with the CWA Final Rule would be implemented to retain runoff and promote recharge of groundwater.

Groundwater. No short-term adverse effects on groundwater resources would occur as a result of the Proposed Action. Demolition and construction associated with the Proposed Action (i.e., minor grading, excavation, and foundation preparations for proposed building, road, and utility systems) would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Additionally, the implementation of stormwater management controls would minimize potential sedimentation concerns.

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

Surface water runoff would be controlled by drainage control measures, with no direct pathways to groundwater recharge points. Through the use of BMPs and following the installation's SPR Plan, there would be no impacts on groundwater from proposed construction.

Cannon AFB's recent mission growth necessitates additional space for training, education, and other installation development requirements. Long-term, negligible, adverse impacts on

groundwater resources would occur as a result of the Proposed Action because of the increased water requirements for facilities personnel and visitors. It is expected that the increase in operations and facilities would increase water demand; therefore, there is a long-term, minor risk on groundwater resources because of contribution to continued drawdown of the regional groundwater aquifer.

Surface Water. No adverse effects on surface water would occur as a result of the Proposed Action. Construction associated with the Proposed Action (i.e., minor grading, excavation, and foundation preparations for proposed building, road, tarmac, and utility systems) would result in temporary soil disturbance. However, no impacts would be anticipated because of the lack of drainage ways, perennial streams, naturally-occurring surface water bodies, or jurisdictional waters, but use of BMPs and following an approved ESCP remain a requirement for construction purposes to minimize sedimentation in overland flow runoff.

Construction projects at Cannon AFB that result in soil disturbance require an ESCP. The ESCP would include BMPs (e.g., silt fences, straw bales) that would be implemented to manage stormwater flow, minimize sedimentation, and protect surface water quality. Construction projects performed at Cannon AFB by USACE contractors that meet the requirements for federal NPDES permit coverage would also be required to implement a SWPPP. All construction contractors on Cannon AFB are required to follow the *Cannon AFB and Melrose AFR Civilian Contractor Environmental Guide* for any project (CAFB 2015b, Rebman 2016, Rebman 2018). BMPs identified in the SPR Plan would be implemented, as necessary, to minimize potential impacts from incidental construction equipment spills (i.e., fuels, lubricants, coolants). Ensuring onsite stormwater infiltration during construction activities, as required by EISA Section 438, would sustain groundwater recharge and minimize stormwater runoff. As a result, no impacts on surface water would be expected and project-specific impacts on surface water are not discussed further under individual projects.

Floodplains. Long-term, minor, adverse impacts on the 100-year floodplain would occur as a result of the Proposed Action. Construction of Projects C1, C3, C5, C6, C8, and I1 would result in an increase of obstructions and impervious surfaces within the 100-year floodplain. Because of the required use of BMPs during construction, short-term sediment and surface runoff around the construction site would be limited. Long-term, minor, adverse impacts on the floodplains would occur from operation of facilities because of the continued total increase of impervious surfaces within the 100-year floodplain.

Wetlands. No impacts on wetlands would be anticipated from implementation of the Proposed Action because no structures would be sited in or adjacent to wetland areas. Fringe wetlands occur along the shoreline of the North Playa basin (along East Aderholt Loop); and the South Playa basin supports a wetland plant community when the area is temporarily flooded. The closest wetland to any of the proposed actions is associated with Project C1-1 and is approximately 2,500 feet southwest of the North Playa basin wetland. In addition, wetland features at Cannon AFB are not considered waters of the United States and are not under USACE jurisdiction. Therefore, no impacts on wetlands would be expected and project-specific impacts on wetlands are not discussed further.

4.2.7 Biological Resources

Vegetation. The Proposed Action would result in short- and long-term, minor, adverse effects on vegetation because several of the proposed projects would occur in vegetated areas that are regularly maintained. Short-term, minor, indirect adverse effects could occur if disturbance associated with construction and demolition activities results in the spread of nonnative and/or invasive species in vegetated areas. Soil disturbances could provide opportunities for nonnative and invasive species to establish or spread; however, the proposed project areas would generally be covered by impervious surfaces and surrounded by maintained areas. As a result, invasive species or nonnative plants would have very few opportunities to become established. The following BMPs could be implemented during and after construction and demolition to further prevent the establishment and spread of nonnative species:

- Inspect and clean construction equipment to remove soil, plants, and seeds.
- Ensure all fill is as free of nonnative plant propagules as is practicable.
- Re-vegetate disturbed areas with native plant species (USAF 2016).

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

Long-term, minor, direct adverse impacts on vegetation would be expected from the conversion of vegetated areas to impervious surfaces. The proposed projects would generally occur in previously disturbed and maintained areas. Additionally, vegetation within the playa, prairie dog town, and wooded habitats would not be affected under the Proposed Action (see **Figures 3-4** and **3-5**). Operations would not involve ground disturbing activities or vegetation removal and would not affect vegetation.

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

Long-term, negligible, adverse effects would result from the removal of urban and disturbed grassland habitat. Similar habitat areas are sufficiently available on and surrounding Cannon AFB. Under the Proposed Action, the golf course ponds, prairie dog town, playa, and wooded habitats would remain as described in **Section 3.7.2**. Operation of the proposed facilities would

not result in long-term adverse effects on wildlife because similar activities occur elsewhere on the installation and would not significantly increase baseline noise levels (see **Section 4.2.1**).

Protected Species. Effects on threatened and endangered species or USFWS species of concern could be similar to those described for wildlife if they are present within the project areas. However, the occurrence of any federally- or state-listed threatened or endangered species on Cannon AFB is unlikely. This includes the federally endangered least tern; the Sprague's pipit, a federal candidate species for listing; and the state threatened Arctic peregrine falcon, Baird's Sparrow, bald eagle, and peregrine falcon. Additionally, the most suitable habitat areas for protected species (the golf course ponds and North Playa Lake) would not be affected under the Proposed Action. Therefore, no effects on listed species or the specific USFWS species of concern discussed above would be expected and they are not discussed further. Should any endangered or threatened species or these USFWS species of concern be sighted, personnel should cease activities, report the sighting to the Cannon AFB Natural Resources Program Manager, and allow the species sufficient time to move away from the project area on its own before resuming activities.

USFWS species of concern that could occur within the project areas include the burrowing owl, Cassin's sparrow, lark bunting, long-billed curlew, prairie falcon, black-tailed prairie dog, and swift fox (see **Table 3-9**). Burrowing owls would be protected in accordance with the USFWS guidance followed by Cannon AFB (CAFB 2016b). If encountered, burrowing owls would be relocated to suitable habitat available on the installation. Cassin's sparrow, lark bunting, and long-billed curlew nests would be avoided if discovered during construction or demolition. If construction or demolition would occur in the summer, surveys for these species should be completed prior to starting these activities as appropriate. If present, these species, except for the prairie falcon, prefer disturbed grassland habitat and would likely be transient within the urban habitat or urban areas on the installation because of the degree of vegetation maintenance. The prairie falcon would be transient if present within the project areas because of the lack of suitable nesting habitat on Cannon AFB. Surveys for black-tailed prairie dog and swift fox burrows would be conducted throughout the project areas as appropriate prior to construction and demolition, and if any burrows are found, the species inhabiting them would be relocated if required.

Migratory Birds. Effects on migratory birds would be similar to those described for wildlife if these species are present within the project area. Long-term, negligible, direct adverse effects would be expected on migratory birds because of an expected loss of habitat from construction. Nesting habitat could be present in both the urban and disturbed grassland habitats; however, the most important habitats for migratory birds (the golf course ponds and North Playa Lake) would not be impacted under the Proposed Action. Migratory birds would be expected to relocate to similar adjacent habitats readily available on and surrounding Cannon AFB. Additionally, the following BMPs would be implemented to avoid effects on migratory birds that could be present on Cannon AFB:

- If construction is scheduled to start during the period when migratory birds are present, a site-specific survey for nesting migratory birds should be performed starting at least two weeks prior to site clearing.

- If nesting birds are found during the survey, buffer areas should be established around nests. Construction should be deferred in buffer areas until birds have left the nest. Confirmation that all young have fledged should be made by a qualified biologist.
- Steps should also be taken to prevent migratory birds from establishing nests in the project area. These could include covering equipment and structures and use of various excluders (e.g., noise).

4.2.8 Cultural Resources

Long-term, negligible, adverse impacts on cultural resources would occur under the Proposed Action. Direct impacts on architectural resources are not expected, as none of the buildings or facilities involved in proposed construction, infrastructure, and demolition projects are eligible for NRHP listing. Demolition and construction under Project C9 would occur near the NRHP-eligible flagpole (Building 2) adjacent to the Wing HQ (Building 1). However, a 20-foot protective buffer would be installed around Building 2 during project activities that would avoid direct impacts on the flagpole. Long-term, negligible, indirect, adverse impacts on the flagpole would result from changes to the visual environment resulting from the demolition of the adjacent Building 1. New construction would occur within the context of an active, changing airfield and new buildings would be similar to existing architecture. Cannon AFB is consulting with the New Mexico SHPO under Section 106 of the NHPA and has proposed a finding of no adverse effect on Building 2.

No impact on archaeological resources would be expected under the Proposed Action. Cannon AFB contains two NRHP-eligible archaeological sites, LA 172689 and LA 173359, both of which are outside proposed project footprints and would not be impacted. All the proposed construction areas have been previously disturbed and archaeological resources are unlikely. Prior to and during construction, each project site would be evaluated for cultural resources and, if appropriate, consultation with the New Mexico SHPO would commence. In the event of an unanticipated discovery of archaeological materials during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed to address the discovery.

4.2.9 Hazardous Materials and Wastes

Hazardous Materials and Petroleum Products. Short-term, negligible, adverse impacts on hazardous materials and petroleum products would occur under the Proposed Action because products containing hazardous materials would be used during proposed construction. However, quantities of products containing hazardous materials would be negligible and their use would be temporary. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with federal, state, and local regulations. The quantities, storage, locations, and uses of hazardous materials during construction activities would be reported to the 27 SOCES/CEAN and each report would include a copy of each hazardous material's Safety Data Sheet. All construction contractors would follow the *Cannon AFB and Melrose AFR Civilian Contractor Environmental Guide* for management of hazardous materials and wastes and special hazards for any project (CAFB 2015b).

Hazardous and Petroleum Wastes. Short-term, negligible, adverse impacts on hazardous and petroleum wastes would occur under the Proposed Action because small quantities of

hazardous wastes would be generated from proposed construction projects. Any equipment used in construction could result in spilled petroleum, oils, or fuel; however, such spills would be immediately contained and remediated in accordance with the Hazardous Waste Management Plan (CAFB 2017e) and SPR Plan (CAFB 2017d) so that no substantial contamination could occur. Disposal of all hazardous wastes would be in accordance with federal, state, and local laws and regulations, and the Cannon AFB *Hazardous Waste Management Plan*. This increase in generation of hazardous waste would not be expected to affect the management plans or capacities for handling this waste. Therefore, the Proposed Action would contribute negligibly to the installation's hazardous waste management program and result in no adverse impacts.

Asbestos-Containing Materials. USAF regulations prohibit the use of ACM for new construction. Therefore, there would be no adverse impacts from ACM during proposed construction activities. Of the demolition projects analyzed as part of the Proposed Action, the buildings in 26 of the 39 projects are of an age in which ACM could be present. All buildings proposed for demolition would be surveyed for ACM prior to commencing demolition activities. The removal of friable ACM would be performed by a licensed asbestos abatement contractor and all notification and abatement would be done according to federal, state, and USAF regulations.

Lead-Based Paint. USAF regulations prohibit the use of LBP for new construction. Therefore, there would be no adverse impacts from LPB from construction activities. Of the buildings proposed for demolition, 17 of the 39 are of an age in which LBP could be present. Therefore, these buildings would need to be surveyed for LBP prior to starting demolition activities. All LBP abatement would be performed according to federal, state, and USAF regulations.

PCBs. PCBs are not used during construction activities according to USAF regulations. Therefore, there would be no adverse impacts from PCBs from the proposed construction activities. PCBs are found in electrical equipment such as transformers and capacitors, hydraulic systems, and fluorescent light ballasts. There is the potential to encounter PCBs in 17 of the 39 buildings proposed for demolition because they are of an age where PCBs could be present. Surveys of these buildings for PCBs would occur prior to any demolition activities and the removal and disposal of PCBs would be conducted according to all federal, state, and USAF regulations.

Radon. Cannon AFB is within an area with moderate predicted average indoor radon screening (between 2 and 4 picocuries per liter) (USEPA 2017). To reduce the potential impacts of radon, proper ventilation and monitoring of the proposed projects that involve underground or enclosed spaces would be conducted. Proper ventilation as well as monitoring of radon levels would ensure that there would be no significant adverse impacts associated with radon gas.

Environmental Restoration Program. During the development of the Proposed Action, Cannon AFB recognized that ERP sites are a land use and mission-related constraint to future development projects. As such, Cannon AFB has coordinated the location of all ground-disturbing components of proposed projects to avoid impacts on established ERP sites; therefore, the remediation of ERP sites would not be compromised by any projects under the Proposed Action. Only the surface danger zone fan for the CATM (Project C-1) is proposed to include portions of an ERP Site, AOC E. However, AOC E is closed and no ground-disturbing

activities would occur in the surface danger zone fan. Therefore, there would be no adverse impacts on ERP sites at Cannon AFB from the Proposed Action.

4.2.10 Health and Safety

The Proposed Action would have short-term minor adverse impacts on health and safety during demolition and construction activities. Construction of new facilities designed to specifically support the needed mission-related activities and demolition and removal of older buildings that were not specifically designed for the activity or function they are being used for and that could contain LBP, ACM, or PCBs, would provide a long-term, minor beneficial impact on health and safety. Although construction activities pose an increased risk of construction-related accidents, construction contractors would comply with all appropriate USAF regulations and policies and wear appropriate PPE. Health and safety during construction for non-construction-related personnel or dependents that might be in the area would be maintained through administrative controls and engineering controls, such as construction barriers and warning posters and signs.

There are no anticipated adverse impacts on health and safety from continued operations in proposed buildings. Under the Proposed Action, future operations would remain similar to current operations. ESQD arcs would be maintained and safety requirements described in Air Force Manual 91-201 would be followed. New buildings such as the Satellite Fire Station would further enhance the working conditions for all USAF military, civilian, and contractor personnel at Cannon AFB. Therefore, there would be long-term, minor, beneficial impacts on health and safety from operations from the Proposed Action.

4.2.11 Socioeconomics

Short-term, moderate, beneficial effects on the local economy would be expected under the Proposed Action because of expenditures from the implementation of the selected construction, demolition, and infrastructure improvements. According to the 2015 American Community Survey, Curry County contains approximately 1,451 construction workers, which collectively should be adequate to meet the demands of the Proposed Actions as the projects are built non-simultaneously over the next five to ten years (USCB 2015). If needed, any additional construction workers would come from outside the region. Short-term increases in local business volume and employment within the county would be expected under the Proposed Action. The use of local construction workers would produce increases in local sales volumes, payroll taxes, and the purchases of goods and services resulting in short-term, indirect, minor, and beneficial increases in the local economy.

Substantial short-term population increases during construction would not be expected to occur because construction workers would likely be existing local residents, although given the relatively rural nature of the county, a few construction workers may come from outside the region. Therefore, negligible, beneficial effects on social conditions, including property values, school enrollment, county or municipal expenditures, or crime rates due to population increases would be anticipated during construction.

4.3 Detailed Environmental Consequences of the Proposed Action

General environmental consequences have been addressed in **Section 4.2**. Detailed effects on resources are identified and discussed for each individual project, as applicable, in the following sections. For sub-resources that would not be affected during demolition, construction, or long-term operations, they are not discussed for the individual project, because they have been identified and addressed in the general environmental consequences section above.

4.3.1 Facility Construction Projects

4.3.1.1 PROJECT C1: DANGEROUS CARGO PAD AND CATM FACILITY

Alternative C1-1

Noise. This project includes demolition and relocation of the existing CATM as well as demolition of the aircraft compass calibration rose pad. The dangerous cargo pad and aircraft taxiways would be approximately 1 mile southeast of noise-sensitive receptors in the Residential District (see **Figure 1-2**). The Skeet Range would be located approximately 1,200 feet west of a residence outside the installation.

As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between approximately 500 and 4,000 feet from the source depending on the equipment used. Because the project site is more than 500 feet from the nearest residence, most noise associated with demolition and construction for this project would likely be below 65 dBA before it reaches the residence.

Users of the Skeet Range would be required to wear the proper equipment to prevent hearing damage. Relocating the Skeet Range closer to the installation boundary could increase an annoyance factor with nearby rural residences off the installation. Therefore, long-term, minor adverse noise impacts could occur during operation of the range.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the dangerous cargo pad and CATM facility (includes trap and skeet range and associated infrastructure), and demolition of the existing CATM facility, compass rose calibration pad, skeet range, small arms range, and rod and gun club (Projects D15 through D22). Demolition and construction would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction to suppress emissions. All emissions associated with construction would be temporary.

Emissions from Alternative C1-1 would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the dangerous cargo pad and CATM facility and associated demolitions are summarized in **Table 4-3**. These emissions represent activities over the duration of the project, which is estimated to be from July 2018 through August 2020. New operational emissions (e.g., space heating, firing ranges) are not

Table 4-3. Estimated Total Air Emissions Resulting from Project C1-1

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jul. 2018 through Aug. 2020	9.005	1.701	7.668	0.016	22.483	0.473	954.932
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

included as they are expected to be minor and offset by operations that were eliminated because of demolition of similar facilities. Therefore, long-term effects on air quality would be expected to be close to neutral.

Land Use. Under Alternative C1-1, the proposed CATM facility would be constructed on the eastern border of the Southeast Development District on land currently designated as Open Area. Operation of the proposed facilities at the Alternative C1-1 site would be compatible with existing facilities, noise exposure (i.e., 65 dBA noise contour), and operational support functions for the area, and would conform to the Cannon AFB IDP for future consolidation of functions and future developments. Portions of the Open Area land use designation for the C1-1 site would likely be changed to Aircraft Operations and Maintenance Facilities, in accordance with the Cannon AFB IDP future land use goals, to more appropriately reflect the new functional uses for the dangerous cargo pad. The proposed location for the new skeet range facilities would likely change land use designations from Open Space to Firing Range. This would represent long-term, minor, beneficial impacts on land use. The proposed surface danger zone fan for the skeet range at the site also partially overlaps ERP AOC E, but this ERP site is closed and no ground-disturbing activities would occur in the surface danger zone fan. Noise generation from the skeet range could have long-term adverse impacts on the on-installation residential land uses (i.e., Residential District located approximately 1 mile north), and individual residences located east of the installation; however, impacts would be expected to be minor. The noise analysis above provides details on noise impacts for this project.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts from interruptions on utilities (communications, electrical, natural gas, water supply, and sanitary sewer) could be experienced when utilities are disconnected from buildings proposed for demolition and connected to new facilities. However, work on the utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from an increase in energy consumption. Long-term, minor, beneficial impacts would be expected because of removal of outdated utilities associated with demolition (Projects D15 through D22) and the installation of new utilities.

Stormwater System. Short-term, negligible, adverse impacts would be expected from Alternative C1-1 because of the temporary disturbance of the stormwater systems during construction and demolition. Long-term, minor, adverse impacts on the stormwater system would be expected because of an increase of impervious surface area associated with Alternative C1-1 site improvements. Adverse impacts would be partially offset by demolition of Projects D15 through D19, D21, and D22. In addition, impacts would be minimized through the use of federally required design practices that require project sites maintain or restore predevelopment site hydrology to the maximum extent technically feasible by using low impact development techniques that infiltrate, store, and evaporate runoff close to its source of origin (CAFB 2016c).

Solid Waste. Short-term, minor, adverse impacts would result from increased construction and demolition debris associated with Alternative C1-1. Contractors would be required to recycle debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Alternative C1-1 is presented in **Table 4-4**.

Table 4-4. Estimated Project C1 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
760,000	D15, D16, D17, D18, D19, D20, D21, D22	173,530	1,668	13,707

Transportation Network: Airfield. Short-term, negligible, adverse effect on the installation's airfield would be expected during construction of the dangerous cargo pad. It is expected that construction activities would be phased to avoid active missions and that other runways, taxiways, and parking aprons would be available for use during active construction, as needed. Access to the dangerous cargo pad construction zone would be established in a manner with the least effect on the active airfield.

Long-term, minor, beneficial impacts on the airfield would be expected from implementation of the dangerous cargo pad. The new pad would minimize airfield disruption during loading and unloading of munitions and other hazardous cargo, and would be sited in accordance with ESQD arcs.

Transportation Network: Roadways, Gates, Parking, and Pedestrian Access. Short-term, negligible, adverse impacts on local roadways (on- or off-installation) and access gates (Main or Portales) would be expected during construction and demolition associated with Alternative C1-1. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An

increase in construction parking requirements would be temporary, limited to the Alternative C1-1 construction site, and staged to minimize effect on adjacent areas.

Long-term, negligible, beneficial impacts on installation parking would be expected as adequate parking designs are included in new construction plans associated with Alternative C1-1. A long-term, minor impacts on local roadways would occur from re-routing Raptor Road around the dangerous cargo pad, but this road is infrequently used. No other impacts on roadways, installation gates, or pedestrian access would be expected.

Geological Resources. Short-term, negligible, adverse effects would be expected on topography as a result of demolition (Projects D15 through D22), debris removal, site preparation (i.e., grading, excavating, and recontouring) and restoration, and construction under Alternative C1-1. The topography of Cannon AFB varies little and only minor grading and excavation would be anticipated to occur. Post-construction topography would not be expected to vary significantly from pre-construction topography. Impacts from wind erosion and dust and generated from the construction sites could affect the flightline and air traffic, requiring soil stabilization such as watering and securing loads during debris hauling. No geologic formations would be substantially altered by the proposed construction activities.

Short-term, minor to moderate, adverse effects on soils would be expected from implementation of Alternative C1-1. The primary effects would be soil compaction, disturbance, and erosion during construction. Implementation of environmental protection measures described in **Section 5.2** would minimize erosion impacts. Construction would require the use of fuels, oils, lubricants, and chemicals. In the event of a petroleum or chemical spill, the environmental protection measures identified in the installation's SPR Plan should be followed to contain and clean up a spill quickly and to minimize the potential impacts on soils.

Water Resources. No short-term, adverse effects on groundwater resources would occur as a result of Alternative C1-1. Demolition and construction associated with the Proposed Action (i.e., minor grading, excavation, and foundation preparations for proposed building, road, and utility systems) would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Additionally, the implementation of stormwater management controls would minimize potential adverse effects including erosion and sedimentation. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from construction equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges.

Long-term, negligible effects on groundwater resources would occur because of the increased requirement for water for Alternative C1-1. It is expected that operation of the proposed facilities would increase water demand; therefore, there is an increased negligible long-term risk on groundwater resources.

Long-term, minor, adverse effects on the 100-year floodplain would occur as a result of Alternative C1-1. Portions of the dangerous cargo pad and associated taxiways would overlap the floodplain result in an increase of impervious surfaces within the 100-year floodplain (see **Figure 3-3**).

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short-term, minor, indirect adverse effects on vegetation could result from disturbance associated with demolition and construction. Long-term, minor, adverse effects on vegetation would occur from conversion of disturbed grassland vegetation to impervious surfaces. Areas of the surrounding disturbed grassland habitat would not be affected (see **Figures 3-4** and **3-5**) and would be available as habitat for wildlife currently using the site. Vegetation within the project area would remain in place to the maximum extent feasible during construction. Demolition of the existing CATM site and the compass calibration pad would also occur under this alternative and those sites would be re-vegetated with approved native plant species in the Sustainable Landscape Development Plan (CAFB 2012).

Wildlife. Short- and long-term, negligible to minor, adverse effects on wildlife would occur during construction because of noise and the possible mortality of small less mobile terrestrial species. Long-term adverse effects would result from the conversion of disturbed grassland habitat to impervious surfaces. The disturbed grassland habitat and the other habitat areas elsewhere on and surrounding Cannon AFB would provide suitable habitat for temporarily and permanently displaced species.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. If these species are observed during construction, the Cannon AFB Natural Resources Program Manager would be contacted and the species would be given sufficient time to move away from the project area on its own before resuming activities.

The taxiway for Project C1 partially falls within an area that has an active black-tailed prairie dog population; therefore, relocation of black-tailed prairie dogs prior to construction could be required. All necessary surveys would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. However, adjacent areas of the disturbed grassland habitat would not be affected under the Proposed Action and migratory birds would be expected to relocate to these habitats. All necessary surveys would be conducted prior to construction and all applicable BMPs would be followed.

Cultural Resources. No impact on cultural resources would be expected under Alternative C-1. The alternative would not occur near any NRHP-eligible buildings or structures. Two facilities not eligible for NRHP listing would be demolished: Building 2312, the General Purpose Small Arms Range, and Building 6012, the Compass Rose Calibration Pad, both constructed in 1961. The proposed construction areas under Alternative C1-1 are previously disturbed from airfield development. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. The loading and unloading of munitions and other hazardous cargo currently occurs at the existing dangerous cargo pad. The types and amount of munitions and hazardous cargo loaded and unloaded would not change with the construction of a new dangerous cargo pad and demolition of the existing facility. The loading and unloading of munitions and other hazardous cargo at the dangerous cargo pad could result in short- and long-term adverse impacts from handling of hazardous materials. However, all munitions and cargo containing hazardous materials would be of limited quantities and stored and handled according to USAF and other federal and state hazardous materials management requirements. Therefore, long-term, negligible adverse impacts would be expected, but would remain less than significant.

The indoor small arms range, CATM building, and trap and skeet range have the potential for short- and long-term adverse impacts on hazardous materials and wastes. However, all munition use is tracked, organizations are required to report munitions usage at the ranges, organizations practice pack-in/pack-out maintenance procedures for wastes, and the ranges would be well maintained. Training instructors ensure personnel utilizing ranges are aware of environmental impacts associated with their activities and actively practice pollution prevention techniques. The management of hazardous materials and wastes generated from the use of the small arms range and trap and skeet range would follow all federal, state, and USAF requirements. As such, long-term, negligible adverse impacts from the operations of the CATM facility would be expected, but would remain less than significant.

Demolition of the CATM facility including the small arms range and skeet range have the potential for generating hazardous wastes associated with the removal of spent munitions. A separate remedial investigation would occur prior to demolition of the CATM facility to determine the extent and amount of soils to be removed and potentially remediated. Any soil removal and remediation that would be required because of the demolition of the CATM facility would be considered a separate action and the location of soils to be removed and potentially remediated evaluated at that time. If soil removal and remediation were deemed necessary, all soil removal and remediation would follow federal, state, and USAF rules and regulations and long-term adverse impacts on hazardous waste would be less than significant.

Health and Safety. Short- and long-term, minor to moderate, adverse impacts on health and safety from demolition, construction, and operational activities for Alternative C1-1 would be anticipated. During construction, construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction activities would increase during the construction of the new dangerous cargo pad and CATM facility. All areas where ground disturbance would occur because of construction are located outside of active ERP sites, so the likelihood of construction contractors encountering contaminated soils is low. The safety danger zone for the CATM trap and skeet range is located on ERP Site AOC E, a closed site. However, the establishment of the safety danger zone for the range would not involve ground-disturbing activities.

The demolition of the existing CATM facility would adhere to all OSHA and USAF safety standards and demolition contractors would maintain all required safety procedures. The potential does exist for demolition contractors to be exposed to unspent munitions or hazardous

waste at the small arms range and trap and skeet range during demolition activities. However, prior to any demolition or soil removal activities at these ranges, appropriate ground clearing and soil sampling would occur, and removal and remediation implemented as necessary.

Workers could be exposed to an increased risk of potential explosions from operations at the new dangerous cargo pad. However, a 1,000-foot ESQD arc would be established to protect workers during the handling and transportation of munitions and explosive materials. All standard explosives and munitions handling safety protocols would be followed, and no explosives would be stored at the dangerous cargo pad. The transport of explosives to the dangerous cargo pad would involve travel over Cannon AFB roads with a minimal risk of a vehicle accident. Therefore, there would be long-term, moderate adverse impacts on health and safety from the use of the dangerous cargo pad.

Active construction for Project C1 would occur within an ESQD arc, increasing the safety risk for construction workers. However, explosive materials use and handling are performed in accordance with the Air Force Manual 91-201 and DoD and OSHA Standards (29 CFR § 1910.109) and would be carefully monitored. Adherence to established procedures, including operating instructions and risk assessments, the use of PPEs, and compliance with the Cannon AFB, DoD and OSHA standards would reduce the potential for injuries, accidents, or other impacts on construction worker health and safety.

The new small arms range and trap and skeet range would include the appropriate surface danger zones to accommodate the weapons used on each range. Range safety issues for personnel involved in weapons training are specifically addressed in Section 2.4 of AFI 36-2654, *Combat Arms Program*. Safety precautions such as limits on line-of-fire, trespass notices, warning signs, proper range communications, the clearing of personnel from surface danger zones prior to weapons discharge, and instruction on proper weapons handling would be implemented at the ranges. Safety equipment such as hearing and eye protection would be used by all personnel working with weapons. The use of shotguns at the ranges would create the potential for lead exposure to trainees and range personnel. For an indoor range, the range ventilation system would be designed to control exposure from airborne lead. Therefore, with the implementation of the appropriate procedures and training in accordance with AFI 36-2654, the short- and long-term, adverse impacts on health and safety from the small arms range and trap and skeet range use would be minor.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would be expected from Alternative C1-1. The project would move dangerous cargo transfer off of the active runway allowing for safer more efficient dangerous cargo loading. It is assumed that equipment and supplies necessary to complete the construction would primarily be obtained locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. The proposed construction would occur entirely on Cannon AFB in a non-residential portion of the installation, and would have little potential to affect on- or off-installation residents adversely. No long-term effects on socioeconomic resources would be expected because Alternative C1-1 does not involve any change in personnel or housing or the long-term use of public services.

Alternative C1-2

Noise. Under this alternative, the proposed CATM facility would be constructed approximately 1,000 feet north of Alternative C1-1 (see **Figure 2-2**). Impacts would be the same as those discussed under Alternative C1-1.

Air Quality. The air emissions and air quality impacts from Alternative C1-2 would be the same as those from Alternative C1-1. The different locations for facilities under Alternative C1-1 versus C1-2 have no effect on air quality.

Land Use. Under this alternative, the proposed CATM facility would be constructed just northwest of the intersection of East Aderholt Loop and Afterburner Road. Although closer to existing utility connections than Alternative C1-1, this alternative would use available, developable land that could be used for other development purposes. Additionally, to accommodate the required ESQD arc and safety fan buffer, siting the new C1-2 facilities at the proposed location would impose new restrictions that would affect future land use and development on the immediately surrounding land area. The proposed facilities would be generally compatible with the existing operational support functions through expansion into the designated Open Area. The land use designation for the project site would likely be changed to Industrial, in accordance with the Cannon AFB IDP future land use goals, to more appropriately reflect the new functional uses for the firing range facilities. This would represent long-term, minor, beneficial impacts on land use. Noise generation from the firing range functional land use could have long-term adverse impacts on the nearest proximal residence (approximately 1,200 feet away, off of the installation); however, no changes would be required to the land use designations.

Infrastructure and Transportation. Impacts on utilities infrastructure and transportation for Alternative C1-2 would be similar to Alternative C1-1, because the only change for Alternative C1-2 is the location of the CATM facility. Utilities would instead be routed to this location for the facility.

Geological Resources. Impacts for implementation of Alternative C1-2 would be similar to Alternative C1-1. Short-term, negligible, adverse effects would be expected on the topography and geology as a result of demolition, debris removal, site preparation and restoration, and construction activities. Short-term, minor to moderate, adverse effects on soils would be expected from implementation of Alternative C1-2. The primary effects would be soil compaction, disturbance, and erosion during demolition and construction activities.

Water Resources. Under this alternative, the proposed CATM facility would be constructed approximately 1,000 feet north of Alternative C1-1. Impacts would be the same as those discussed under Alternative C1-1.

Biological Resources. Under Alternative C1-2, the CATM facility would be located approximately 1,000 feet north of the proposed location under Alternative C1-1, but would still be constructed within the disturbed grassland habitat of Cannon AFB. All proposed demolition, construction, and operations would be the same as described under Alternative C1-1; therefore, impacts on biological resources would be similar to those described under Alternative C1-1.

Cultural Resources. No impact on cultural resources would be expected under Alternative C1-2. The alternative would not occur near any NRHP-eligible buildings or structures. As with Alternative C1-1, Buildings 2312 and 6012, which are not eligible for NRHP listing, would be demolished. The proposed construction areas under Alternative C1-2 are previously disturbed from airfield development. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Impacts on hazardous materials and wastes from Alternative C1-2 would be the same as described for Alternative C1-1.

Health and Safety. The impacts on health and safety from the implementation of Alternative C1-2 would be the same as those described for Alternative C1-1.

Socioeconomics. Under this alternative, the proposed CATM facility would be constructed approximately 1,000 feet north of the Alternative C1-1, and would similarly have short-term, minor, beneficial effects on socioeconomic resources.

4.3.1.2 PROJECT C2: PROFESSIONAL DEVELOPMENT CENTER

Noise. This project involves construction of a multi-use building and associated infrastructure on a new location in the Community District, approximately 750 feet south of noise-sensitive receptors in the Residential District (see **Figure 1-2**).

Short-term, negligible adverse impacts on noise would occur under Project C2. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest residence, most noise associated with construction activities for this project would likely be below 65 dBA before it reaches the residence. Noise impacts from this project would be temporary during construction. No long-term impacts on the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the PDC and concrete drill pad and demolition of the current ALS facility (Project D26). Construction and demolition would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction to suppress emissions. All emissions associated with construction would be temporary.

Emissions from Project C2 would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the PDC and concrete drill pad, and demolition of the ALS facility are summarized below in **Table 4-5**. These emissions represent construction and demolition over the duration of the project, which is estimated to be from January 2021 through July 2023. New operational emissions (e.g., space heating) are not included as they are expected to be minor and offset by operations that were eliminated

Table 4-5. Estimated Total Air Emissions Resulting from Project C2

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2021 through Jul. 2023	6.243	1.529	7.031	0.015	10.655	0.279	1,325.490
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

because of demolition of similar facilities. Therefore, long-term effects on air quality would be expected to be close to neutral.

Land Use. Construction and operation of the proposed PDC facility would be compatible with the existing community support facilities and functions in the Community District and would conform to the Cannon AFB IDP plans for future development. No land use designations would be changed from the project, and the developments would occur in accordance with existing land use policies.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities would be expected under Alternative C2-1. Short-term interruptions to utilities (communications, electrical, natural gas, water supply, and sanitary sewer) could be experienced when utilities are disconnected from buildings proposed for demolition and connected to new facilities. However, work on utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from energy consumption. Long-term, minor, beneficial impacts on utilities would be expected from implementation of Alternative C2-1 because of removal of outdated utilities associated with demolition (Project D26) and the installation of new utilities.

Stormwater System. Short-term, negligible, adverse impacts would be expected as a result of Alternative C2-1 because of the temporary disturbance of the stormwater systems during construction and demolition.

Long-term, negligible, adverse impacts on the stormwater system would be expected because of an increase of impervious surface area associated with Alternative C2-1 site improvements. Adverse impacts would be partially offset by demolition of existing impervious areas associated with the existing Building 1254 ALS (Project D26). In addition, adverse impacts would be minimized through the use of federally required design practices that require project sites maintain or restore predevelopment site hydrology (CAFB 2016c).

Solid Waste. Short-term, minor, adverse impacts would result from increased construction and demolition debris associated with Project C2. Solid waste generated from the proposed

construction and demolition would consist of building materials such as solid pieces of concrete, metals (e.g., conduit, piping, and wiring), and lumber. Contractors would be required to recycle debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity.

The proposed projects would result in a short-term, minor adverse impacts during construction, and long-term, negligible adverse impacts during operation as a result of increased generation of solid waste. Solid waste generation associated with Alternative C2-1 is presented in **Table 4-6**.

Table 4-6. Estimated Project C2 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
71,000	D26	16,734	156	1,322

Transportation Network. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during activities associated with Project C2 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project C2 construction zones, and staged to minimize effect on adjacent areas.

Long-term, negligible, beneficial impacts on local and installation-wide parking would be expected as adequate parking designs are included in new construction plans associated with Project C2. No long-term impacts on local roadways or installation gates would be expected. There would be no expected impacts on pedestrian traffic or airfield infrastructure because of implementation of Project C2.

Geological Resources. Short-term, negligible, adverse effects would be expected on the topography as a result of demolition (Project D26) and construction activities under Project C2. The project location is in the developed portions of Cannon AFB and would require only minor grading and excavation.

Short-term, negligible effects on soils would be expected from implementation of Project C2. The primary effects would be soil compaction, disturbance, and erosion during demolition and construction. Implementation of environmental protection measures (described in **Section 5.2**) would minimize erosion impacts.

Water Resources. No short-term adverse effects on groundwater resources would occur as a result of Project C2. Demolition and construction would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Based

on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from construction equipment would not be anticipated to reach the groundwater table given anticipated prompt response to potential discharges. Long-term, negligible, adverse effects on groundwater resources would occur because of the increased requirement for water for the project. It is expected that operation of the proposed facility would increase water demand; therefore, there would be a long-term, negligible impact on groundwater resources. No impacts on the 100-year floodplain would be anticipated because Project C2 is outside the floodplain.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, minor, indirect adverse effects on vegetation could result from disturbance associated with construction and demolition. Long-term, negligible, adverse effects on vegetation could occur from conversion of urban habitat vegetation to impervious surfaces. Areas containing vegetation within the surrounding urban habitat would not be affected under Project C2 (see **Figures 3-4** and **3-5**) and would be available as habitat for wildlife currently using the site for the proposed project. Vegetation within the project area would remain in place to the maximum extent feasible. The area around the proposed PDC would be a maintained grassy area with dispersed ornamental trees. Demolition of the existing ALS facility (Project D26) would also occur within the urban habitat area on Cannon AFB; the area would be re-vegetated and the landscaping vegetation surrounding the D26 project area would remain.

Wildlife. Short- and long-term, negligible to minor, adverse effects on wildlife would occur during demolition and construction because of noise and the possible mortality of small less mobile terrestrial species. Long-term, negligible, adverse effects would result from the conversion of urban habitat to impervious surfaces. The surrounding urban habitat and the other habitat areas elsewhere on Cannon AFB would provide suitable habitat for temporarily and permanently displaced species. No potential habitat would be removed under Project D26.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. All of these species would likely be transient if present within the project areas. The presence of burrowing owl, Cassin's sparrow, lark bunting, and long-billed curlew nests as well as black-tailed prairie dog and swift fox burrows would be unlikely because of the degree of vegetation maintenance that occurs within the urban habitat. However, all necessary surveys would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. However, migratory birds would be expected to relocate to trees and shrubs present throughout the urban habitat in the housing area and golf course and other nearby habitats. All necessary surveys would be conducted prior to construction and all applicable BMPs would be followed.

Cultural Resources. No impact on cultural resources would be expected under Project C2. The project would not occur near any NRHP-eligible buildings. One building not eligible for NRHP-listing would be demolished: Building 1254, Airmen Leadership School, constructed in

1958. The proposed construction area for Project C2 is previously disturbed from development. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed PDC would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the construction or maintenance of the PDC would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result. All hazardous materials and wastes would be handled, stored, transported, and disposed of in accordance with applicable federal, state, and local laws, and USAF regulations.

Demolition of the ALS facility, which was built in 1958, would have short-term adverse impacts on hazardous materials and waste, primarily through the potential for disturbing special hazards, such as ACM, LBP, and potentially PCBs. The ALS facility would be surveyed for these hazards prior to the start of demolition activities. All ACM, LBP, and PCBs discovered during surveys would be handled in accordance with USAF policy. With appropriate surveys, sampling, analysis, and abatement, the potential impacts on hazardous wastes from the demolition of the ALS facility would be less than significant.

Health and Safety. Short-term, minor, adverse impacts on health and safety from the proposed construction, and demolition could occur. During construction, workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction activities would increase during the construction of the new PDC. The PDC construction site is located outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. No long-term adverse impacts on health and safety would be expected.

The demolition of the existing ALS Facility would adhere to all OSHA and USAF safety standards and contractors would maintain safety procedures. The potential would exist for demolition contractors to be exposed to ACM, LBP, and PCBs. However, prior to any demolition, surveys and testing for and subsequent remediation for these special hazards, if necessary, would ensure that contractors are not exposed to them.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would be expected from Project C2. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County.

The proposed project would increase student capacity, resulting in long-term, minor, beneficial impacts on education. No other long-term effects on socioeconomic resources would be expected because Project C2 does not involve any changes in personnel or housing.

4.3.1.3 PROJECT C3: SATELLITE FIRE STATION

Noise. A new satellite fire station would be constructed along the Southeast Ramp on the installation's airfield in the Southeast Development District (see **Figure 2-4**), approximately 2,400 feet east of a residence off the installation.

Short-term, negligible adverse impacts on noise would occur under Project C3. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest residence, most noise associated with construction for this project would likely be below 65 dBA before it reaches the residence. Noise impacts from this project would be temporary during construction. Other than occasional emergency sirens, no long-term impacts on the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the Satellite Fire Station. Construction would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction would be temporary.

Long-term, minor adverse effects on air quality would be expected from the operation of a new emergency generator. Emissions from Project C3, summarized in **Table 4-7**, would not contribute to or affect local or regional attainment status with respect to the NAAQS. These emissions represent construction activities over the entire period of construction, which is estimated to be from January 2022 through January 2024. New operational emissions from space heating are not included as they are expected to be minimal.

Table 4-7. Estimated Total Air Emissions Resulting from Project C3

Construction Emissions	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2022 through Jan. 2024	3.672	1.087	4.309	0.010	6.549	0.156	861.469
Operational Emissions	**NO_x (tpy)**	**VOC (tpy)**	**CO (tpy)**	**SO_2 (tpy)**	**PM_{10} (tpy)**	**$PM_{2.5}$ (tpy)**	**CO_2e (mtpy)**
Emergency Generator (Feb. 2024 and forward)	0.058	0.014	0.039	0.012	0.013	0.013	6.077
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although construction project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

Land Use. Construction and operation of the proposed satellite fire station along the installation airfield's Southeast Ramp would occur in the Southeast Development District within the Open Area land use designation. Although the facility use is inconsistent with the existing land use designation, the new station would be generally compatible with the existing operations and safety support functions along the airfield, and expand existing fire safety capabilities to meet

the projected service support needs of the new C-130 hangars and the MADF (Project C5), and Deployment Processing Center (Project C6) that would be developed nearby. Additionally, because development in this area would allow fire vehicles to be housed and operated on the perimeter of the Southeast Development District, impacts on traffic in the area during emergency call responses would be minimized. The land use designation for the newly occupied area would likely be changed from Open Area to Air Operations and Maintenance Facilities to reflect the new functional use, in accordance with the Cannon AFB IDP future land use goals. This would represent long-term, minor, beneficial impacts on land use.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply, sanitary sewer, and liquid fuels) could be experienced when facilities are connected to utilities during construction. However, work on utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from an increase in energy consumption. Long-term, minor, beneficial, impacts on the communications system because of the addition of the ECC, and overall upgrades to communications systems and other utilities would be expected from implementation Project C3.

Long-term, negligible, adverse impacts on the liquid fuel system would occur with the addition of the emergency generator associated with Project C3.

Stormwater System. Short-term, negligible, adverse impacts on the stormwater system would be expected as a result of the Project C3 because of the temporary disturbance of stormwater systems during construction activities.

Long-term, negligible, adverse impacts on the stormwater system would be expected because of an increase of impervious surface area associated with Project C3 site improvements. Impacts would be minimized through the use of planning, design, construction, and maintenance practices that require project sites greater than 5,000 ft^2 maintain or restore predevelopment site hydrology to the maximum extent technically feasible per Section 438 of the EISA.

Solid Waste. Short-term, minor, adverse impacts would result from increased construction debris associated with Project C3. Solid waste generated from the proposed construction would consist of building materials such as solid pieces of concrete, metals (e.g., conduit, piping, and wiring), and lumber. Contractors would be required to recycle construction debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable construction debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity.

The proposed construction project would result in short-term, minor, adverse impacts during construction, and long-term, negligible, adverse impacts during operation as a result of increased solid waste generation as presented in **Table 4-8**.

Table 4-8. Estimated Project C3 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
40,000	None	0	88	0

Transportation Network: Airfield. Short-term, negligible, adverse impacts on the airfield would be expected during construction of the Satellite Fire Station. It is expected that construction activities would be phased to avoid active missions and that the alternate runway, taxiway, and parking aprons would be available for use during active construction, as needed. Access to the Satellite Fire Station construction zone would be established in a manner with the least effect on the active airfield. No long-term impacts on the airfield would be expected because of implementation of Project C3, apart from the Southeast Development District having more direct access to fire suppression services.

Transportation Network: Roadways, Gates, Parking, and Pedestrian Access. Short-term, negligible, adverse impacts on local roadways, access gates, parking, and pedestrian access would be expected during construction associated with Project C3 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project C3 construction zones, and staged to minimize impacts on adjacent areas.

No long-term impacts on local roadways or access gates would be expected because of implementation of Project C3. Long-term, negligible, positive impact on local and installation-wide parking would be expected, as adequate parking designs are included in new construction plans. No impact on pedestrian traffic is expected from implementation of Project C3.

Geological Resources. Short-term, negligible, adverse effects would be expected on the geological resources as a result of site preparation and construction activities under Project C3. Potential impacts on topography are considered negligible as the project location is in a previously developed portion of Cannon AFB, requiring only minor grading and excavation.

Water Resources. No short-term adverse effects on groundwater resources could occur as a result of Project C3. Construction associated with the Proposed Action would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Implementation of stormwater management controls would minimize potential sedimentation concerns. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from construction equipment would not be

anticipated to reach the groundwater table given prompt response to potential discharges. Long-term, negligible, adverse effects on groundwater resources would occur as a result of the increased requirement for water for the project. It is expected that operation of the proposed facility would increase water demand; therefore, there is an increased negligible long-term risk on groundwater resources.

Long-term, minor, effects on the 100-year floodplain would occur because Project C3 would result in an increase of obstructions and impervious surfaces within the floodplain. During construction activities, temporary sediment and surface runoff around the construction site would be possible; however, the use of BMPs would minimize these effects.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short-term, minor, indirect adverse effects on vegetation could result from disturbance associated with construction. Long-term, minor, adverse effects on vegetation would occur from conversion of disturbed grassland vegetation to impervious surfaces. Areas of the surrounding disturbed grassland habitat would not be affected (see **Figures 3-4** and **3-5**) and would be available as habitat for wildlife currently using the site for the proposed project. Vegetation within the project area would remain in place to the maximum extent feasible.

Wildlife. Short- and long-term, negligible to minor, adverse effects on wildlife would occur during construction because of noise and the possible mortality of small less mobile terrestrial species. Long-term, negligible, adverse effects would result from the conversion of disturbed grassland habitat to impervious surfaces. The surrounding disturbed grassland habitat and the other habitat areas elsewhere on and surrounding Cannon AFB would provide suitable habitat for temporarily and permanently displaced species.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife, if they are present within the project area. If these species are observed during construction, the Cannon AFB Natural Resources Program Manager would be contacted and the species would be given sufficient time to move away from the project area on its own before resuming activities. There are no known black-tailed prairie dog populations within the project area. Additionally, all necessary surveys would be conducted prior to construction and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. Adjacent areas of the disturbed grassland habitat would not be affected and migratory birds would be expected to relocate to these habitats. All necessary surveys would be conducted prior to construction and all applicable BMPs would be followed.

Cultural Resources. No impact on cultural resources would be expected under Project C3. The construction area is not near any NRHP-eligible buildings or structures. The proposed construction area is previously disturbed from development. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is

made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. The construction, use, and maintenance of the proposed Satellite Fire Station would result in short- and long-term adverse impacts on hazardous materials and waste. Any hazardous materials proposed for use during the construction or maintenance of the Satellite Fire Station would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result. All hazardous materials and wastes would be handled, stored, transported, and disposed of in accordance with applicable federal, state, and local laws, and USAF regulations.

An emergency power generator would be required for the facility and would result in the increased potential for petroleum, oil, and lubricant (POL) spills during refueling and maintenance activities. However, any POL spills would be addressed by following the requirements of the Cannon AFB SPR Plan (CAFB 2017d) reducing any potential impact.

Fire suppression chemicals classified as hazardous materials (and potentially hazardous wastes) would be stored at the proposed Satellite Fire Station and used in firefighting training and operations. Fire suppression chemicals would be properly stored according to federal and state regulations and with secondary containment and proper ventilation, and used in accordance with the requirements described by their Safety Data Sheets. After the use of any fire suppression chemicals, containment solutions would be implemented to minimize dispersal of chemicals in surface waters. All fire suppression chemicals used during training or operations would be removed and disposed of in accordance with USAF regulations and federal, state, and local requirements. Therefore, short-term, adverse impacts on hazardous materials and waste from the proposed Satellite Fire Station would be expected, but impacts would remain less than significant.

Health and Safety. Construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction activities would increase during the construction of the new Satellite Fire Station. The construction site is outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. Therefore, there would be short-term, minor adverse impacts on health and safety from construction activities.

The construction of a Satellite Fire Station would have long-term, minor to moderate beneficial impacts on health and safety because response times to fires, emergencies, and aircraft mishaps in the Southeast Ramp area would be reduced by no longer having to rely on the existing installation fire station in the North Ramp District.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would be expected from Project C3. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The

demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County.

The construction of a new satellite fire station would reduce risk to personnel, aircraft, and facilities by meeting required response times to emergency events in the Southeast Development District. In addition the project would provide an ECC for the Southeast Development District. This increase in public services in the district would result in minor, long-term, beneficial impacts on socioeconomics. No other long-term adverse effects on socioeconomic resources would be expected because Project C3 does not involve any change in personnel or housing.

4.3.1.4 PROJECT C4: SATELLITE FITNESS CENTER

Noise. This project entails construction of a fitness center near the western end of Afterburner Road in the Southeast Development District, over 4,000 feet from the nearest residential receptor off the installation.

Short-term, negligible adverse impacts on noise would occur under Project C4. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest residence, most noise associated with construction for this project likely would be below 65 dBA before it reaches the residence. Noise impacts from this project would be temporary during construction. No long-term impacts on the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the Satellite Fitness Center. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction would be temporary.

Emissions from Project C4, summarized in **Table 4-9**, would not contribute to or affect local or regional attainment status with respect to the NAAQS. These emissions represent construction activities over the entire period of construction which is estimated to be from January 2020 through February 2021. New operational emissions from space heating are not included as they are expected to be minimal. Therefore, long-term, negligible, adverse effects on air quality would be expected from this project.

Land Use. Development of the proposed fitness center in the Southeast Development District within the Open Area land use designation would have long-term, minor adverse impacts because of reduced land area available for development on the installation. However, this alternative would provide fitness services along the southeastern area of the installation, and would collocate the fitness and dining facilities to consolidate like amenities in accordance with the land use efficiency goals identified in the Cannon AFB IDP. The proposed project would be inconsistent with the existing Open Area land use designation for the area, but would be generally compatible with planned future functional land uses. It is likely that the land use

Table 4-9. Estimated Total Air Emissions Resulting from Project C4

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2020 through Jan. 2021	2.036	0.541	2.065	0.005	1.848	0.094	422.027
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

designation would be changed to Aircraft Operations and Maintenance Facilities or other similar land use category in accordance with the Cannon AFB IDP future land use goals, to reflect the new functional use. This would represent long-term, minor, beneficial impacts on land use.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply, and sanitary sewer) would be expected from implementation of Project C4. Short-term interruptions could be experienced when utilities are connected to new facilities during construction activities. However, work on utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from an increase in energy consumption. Long-term, minor, beneficial impacts on the utilities would be expected from implementation of Project C4 because of installation of upgraded utilities.

Stormwater System. Short-term, negligible, adverse impacts would be expected from Project C4 because of the temporary disturbance of the stormwater systems during construction. Long-term, negligible, adverse impacts on the stormwater system would be expected because of an increase of impervious surface area associated with C4 site improvements. Impacts would be minimized through the use of federally required planning, design, construction, and maintenance practices that require project sites greater than 5,000 ft^2 maintain or restore predevelopment site hydrology to the maximum extent technically feasible per Section 438 of the EISA.

Solid Waste. Short-term, minor, adverse impacts would result from increased construction debris associated with Project C4. Solid waste generated from the proposed construction would consist of building materials such as solid pieces of concrete, metals (e.g., conduit, piping, and wiring), and lumber. Contractors would be required to recycle construction debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable construction debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity.

The proposed project would result in a short-term, minor, adverse impacts during construction and long-term negligible adverse impacts during operation as a result of increased solid waste generation as presented in **Table 4-10**.

Table 4-10. Estimated Project C4 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
18,000	None	0	40	0

Transportation Network: Airfield. Short-term, negligible, adverse impacts on the airfield would be expected during construction of the Satellite Fitness Center. It is expected that construction activities would be phased to avoid active missions and that the alternate runway, taxiway, and parking aprons would be available for use during active construction, as needed. Access to the Satellite Fitness Center construction zone would be established in a manner with the least effect on the active airfield. No long-term impacts on the airfield would be expected.

Transportation Network: Roadways, Gates, Parking, and Pedestrian Access. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during construction activities associated with Project C4 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project C4 construction zones, and staged to minimize effect on adjacent areas.

No long-term impacts on local roadways or Access Gates would be expected because of implementation of Project C4. Long-term, negligible, beneficial impacts on installation-wide parking would be expected, as adequate parking designs are included in new construction plans. No impacts on pedestrian traffic would be expected.

Geological Resources. Short-term, negligible, adverse effects would be expected on geological resources as a result of site preparation and construction activities associated with Project C4. The topography of Cannon AFB varies little and only minor grading and excavation would be anticipated to occur. Impacts because of soil compaction, disturbance, and wind and water erosion during construction. Dust could affect the flightline and air traffic, requiring potential soil stabilization.

Water Resources. No short-term adverse effects on groundwater resources could occur as a result of Project C4. Construction associated with the Proposed Action would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from demolition or construction equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges.

Long-term, negligible, adverse effects on groundwater resources would occur as a result of Project C4 because of the increased requirement for water for the project. It is expected that operation of the proposed facility would increase water demand; therefore, there is an increased negligible long-term risk on groundwater resources. No impacts on the 100-year floodplain are anticipated, as Project C4 is proposed to be located outside of the floodplain.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short-term, minor, indirect adverse effects on vegetation could result from disturbance associated with construction activities. Long-term, minor, adverse effects on vegetation would occur from conversion of disturbed grassland vegetation to impervious surfaces. Areas of the surrounding disturbed grassland habitat would not be affected as a result of Project C4 (see **Figures 3-4** and **3-5**) and would be available as habitat for wildlife currently using the site for the proposed project. Vegetation within the project area would remain in place to the maximum extent feasible.

Wildlife. Short- and long-term, negligible to minor, adverse effects on wildlife would occur during construction because of noise and the possible mortality of small, less mobile terrestrial species. Long-term, negligible, adverse effects would result from the conversion of disturbed grassland habitat to impervious surfaces. The surrounding disturbed grassland habitat and the other habitat areas elsewhere on and surrounding Cannon AFB would provide suitable habitat for temporarily and permanently displaced species.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. If these species are observed during construction, the Cannon AFB Natural Resources Program Manager would be contacted and the species would be given sufficient time to move away from the project area on its own before resuming activities. No known black-tailed prairie dog populations occur within the project area. Additionally, all necessary surveys would be conducted prior to construction and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. Adjacent areas of the disturbed grassland habitat would not be affected under the Proposed Action and migratory birds would be expected to relocate to these habitats. All necessary surveys would be conducted prior to construction and all applicable BMPs would be followed.

Cultural Resources. No impact on cultural resources would be expected under Project C4. The construction area is not near any NRHP-eligible buildings or structures. The proposed construction area is previously disturbed from development. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction and maintenance of the proposed Satellite Fitness Center would result in short- and long-term, negligible, adverse impacts on hazardous

materials and wastes. Any hazardous materials proposed for use during the construction or maintenance of the Satellite Fitness Center would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result. All hazardous materials and wastes would be handled, stored, transported, and disposed of in accordance with applicable USAF regulations and federal, state, and local requirements.

Health and Safety. During construction, workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction activities would increase during the construction of the new Satellite Fitness Center. The construction site is located outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. Therefore, short-term, minor adverse impacts on health and safety from construction would occur.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would be expected from Project C4 because is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County.

The Satellite Fitness Center would have long-term, minor beneficial impacts because personnel in the Southeast Ramp area would no longer have to travel to the fitness center in the North Ramp District. No long-term adverse effects on socioeconomic resources would be expected because Project C4 does not involve any change in personnel or housing.

4.3.1.5 PROJECT C5: MOBILE AERIAL DELIVERY FACILITY (MADF)

Noise. Under Project C5, the existing MADF in the North Ramp District (Building 133) would be demolished and a new MADF facility would be constructed along Afterburner Road in the Southeast Development District, adjacent to the proposed Deployment Processing Center and Satellite Fire Station.

Short-term, negligible adverse impacts on noise would occur under Project C5. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest residence (2,500 feet to the east, off the installation), most noise associated with demolition and construction activities for this project would likely be below 65 dBA before it reaches the residence. Noise impacts from this project would be temporary during construction. No long-term impacts on the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the MADF (includes cargo storage yard), and demolition of existing MADF. Construction and demolition would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction

equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction and demolition activities to suppress emissions. All emissions associated with construction and demolition would be temporary.

Emissions from Project C5, summarized in **Table 4-11**, would not contribute to or affect local or regional attainment status with respect to the NAAQS. These emissions represent construction and demolition over the duration of the project, which is estimated to be from July 2018 through December 2020. New operational emissions (e.g., space heating) are not included as they are expected to be minor and offset by operations that were eliminated because of demolition of similar facilities. Therefore, long-term effects on air quality would be expected to be close to neutral.

Table 4-11. Estimated Total Air Emissions Resulting from Project C5

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jul. 2018 through Dec. 2020	7.589	1.607	6.788	0.143	9.257	0.386	1,263.451
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The USAF ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

Land Use. The project would be sited in the Open Area land use designation of the Southeast Development District to appropriately collocate materiel storage functions near the new C-130 hangars and the proposed Deployment Processing Center and Satellite Fire Station. The land use designation would likely be changed from Open Area to Aircraft Operations and Maintenance Facilities, in accordance with the Cannon AFB IDP for future development goals, to reflect the new functional land use. This would represent long-term, minor, beneficial impacts on land use efficiency in accordance with the Cannon AFB IDP.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply, and sanitary sewer) would be expected under Project C5. Short-term interruptions could be experienced when utilities are connected to new facilities. However, work on utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from an increase in energy consumption. Long-term, minor, beneficial impacts on utilities would be expected from implementation of Project C5 because of the installation of utility upgrades.

Stormwater System. Short-term, negligible, adverse impacts would be expected as a result of Project C5 because of the temporary disturbance of the stormwater systems during construction activities. Long-term, negligible, adverse impacts on the stormwater system would be expected because of an increase of impervious surface area associated with Project C5 site improvements. Impacts would be minimized through the use of federally required design practices that require project sites greater than 5,000 ft^2 maintain or restore predevelopment site hydrology (CAFB 2016c).

Solid Waste. Short-term, minor, adverse impacts would result from increased construction debris associated with Project C5. Contractors would be required to recycle construction debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable construction debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Project C5 is presented in **Table 4-12**.

Table 4-12. Estimated Project C5 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
111,000	None	0	244	0

Transportation Network: Airfield. Short-term, negligible, adverse impacts on the airfield would be expected during construction of the MADF. It is expected that construction would be phased to avoid active missions and that the alternate runway, taxiway, and parking aprons would be available for use during active construction, as needed. Access to the MADF construction zone would be established in a manner with the least effect on the active airfield. Long-term, negligible, beneficial impacts on the airfield would be expected from personnel in the Southeast Development District having ready access to the new MADF in the same location.

Transportation Network: Roadways, Gates, Parking, and Pedestrian Access. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during construction associated with the MADF as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project C5 construction zones, and staged to minimize effect on adjacent areas.

No long-term impacts on local roadways (on- or off-installation) or access gates (Main or Portales) would be expected because of implementation of Project C5. Long-term, negligible, beneficial impacts on local and installation-wide parking would be expected as adequate parking designs are included in new construction plans associated with Project C5. No impacts on pedestrian traffic would be expected.

Geological Resources. Short-term, negligible, adverse effects would be expected on geological resources as a result of demolition (D10), site preparation and construction activities under Project C5. Potential impacts on topography are considered negligible as the project location is in a previously developed portion of Cannon AFB, requiring only minor grading and excavation.

Short term, negligible effects on soils would be expected from implementation of Project C5, through soil compaction, disturbance, and erosion during demolition and construction activities. Implementation of environmental protection measures described in **Section 5.2** would minimize erosion impacts.

Water Resources. No short-term adverse effects on groundwater resources could occur because of Project C5. Construction would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Based on existing soil conditions, any incidental contaminant discharges construction equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges. Long-term, negligible, adverse effects on groundwater resources would occur as a result of the increased requirement for water for the project. It is expected that operation of the proposed facility would increase water demand; therefore, there is an increased negligible long-term risk on groundwater resources.

Long-term, minor, adverse effects on the 100-year floodplain would occur because Project C5 would result in an increase of obstructions and impervious surfaces within the 100-year floodplain. During construction activities, temporary sediment and surface runoff around the construction site would be possible; however, the use of BMPs would minimize these effects.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, minor, indirect adverse effects on vegetation could result from disturbance associated with construction and demolition activities. Long-term, minor, adverse effects on vegetation would occur from conversion of disturbed grassland vegetation to impervious surfaces. Areas of the surrounding disturbed grassland habitat would not be affected as a result of Project C5 (see **Figures 3-4** and **3-5**) and would be available as habitat for wildlife currently using the site for the proposed project. Vegetation within the project area would remain in place to the maximum extent feasible. Demolition of the existing MADF Hangar (Project D10) would occur within urban habitat. The urban habitat adjacent to the D10 footprint would remain.

Wildlife. Short- and long-term, negligible to minor, adverse effects on wildlife would occur during construction and demolition because of noise and the possible mortality of small less mobile terrestrial species. Long-term, negligible, adverse effects could result from the conversion of disturbed grassland habitat to impervious surfaces under Project C5. The surrounding habitat areas would provide suitable habitat for temporarily and permanently displaced species. No potential habitat would be removed under Project D10.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. If these species are observed during construction, the Cannon AFB Natural Resources Program Manager would be contacted and the species would be given sufficient time to move away from the project area on its own before resuming activities. There are no known black-tailed prairie dog populations within the project area. Additionally, all necessary surveys would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. Adjacent areas of the disturbed grassland habitat would not be affected under the Proposed Action and migratory birds would be expected to relocate to these habitats. All necessary surveys, including surveys of buildings to be demolished, would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Cultural Resources. No impact on cultural resources would be expected under Project C5. The construction area is not near any NRHP-eligible buildings or structures. The proposed construction area is previously disturbed from development. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed MADF would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the demolition of Building 133 and construction or maintenance of the MADF would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result. All hazardous materials and wastes would be handled, stored, transported, and disposed of in accordance with applicable USAF regulations and federal, state, and local requirements. Therefore, the potential impacts on hazardous wastes would be less than significant.

Health and Safety. Construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction activities would increase during the construction of the new MADF. The construction site is located outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. Therefore, there would be short-term minor impacts on health and safety from construction.

The demolition of the existing facility used for the MADF would adhere to all OSHA and USAF safety standards and demolition contractors would maintain safety procedures. Therefore, there would be short-term, minor adverse impacts on health and safety from demolition activities.

Socioeconomics. The proposed MADF facility would be constructed along Afterburner Road, adjacent to the proposed Deployment Processing Center and Satellite Fire Station. Short-term,

minor, beneficial effects on socioeconomic resources would be expected from Project C5. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. The proposed construction would occur entirely on Cannon AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents. No long-term adverse effects on socioeconomic resources would be expected because Project C5 does not involve any change in personnel, housing or public services.

4.3.1.6 PROJECT C6: DEPLOYMENT PROCESSING CENTER

Noise. The proposed Deployment Processing Center would be constructed along Afterburner Road, adjacent to the proposed MADF and Satellite Fire Station in the Southeast Development District. The project would be located over 2,300 west of the nearest residence, which is off the installation.

Short-term, negligible adverse impacts on noise would occur under Project C6. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest residence, most noise associated with construction activities for this project would likely be below 65 dBA before it reaches the residence. Noise impacts from this project would be temporary during construction. No long-term impacts on the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the new Deployment Processing Center, and demolition of the existing facility in Building 620 (Project D23). Construction and demolition would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction and demolition to suppress emissions. All emissions associated with construction and demolition would be temporary.

Emissions from Project C6, summarized in **Table 4-13**, would not contribute to or affect local or regional attainment status with respect to the NAAQS. These emissions represent construction and demolition over the duration of the project, which is estimated to be from January 2021 through April 2023. New operational emissions (e.g., space heating) are not included as they are expected to be minor and offset by operations that were eliminated because of demolition of similar facilities. Therefore, long-term effects on air quality would be expected to be close to neutral.

Land Use. The project would be sited in the Southeast Development District within the Open Area land use designation to best meet the project-specific selection standard because the new C-130 hangars are located in the Southeast Development District. Under this alternative, the proposed Deployment Processing Center would be constructed along Afterburner Road,

Table 4-13. Estimated Total Air Emissions Resulting from Project C6

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2021 through Apr. 2023	5.010	1.235	5.564	0.013	8.073	0.219	1,109.805
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

adjacent to the proposed MADF and Satellite Fire Station. The proposed project is inconsistent with the existing Open Area land use designation. In accordance with the Cannon AFB IDP for future development goals, the land use designation would likely be changed from Open Area to Aircraft Maintenance and Operations Facilities to reflect the new functional land use. This would represent long-term, minor, beneficial impacts on land use.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply and sanitary sewer) from interruptions could be experienced when utilities are disconnected from buildings proposed for demolition and connected to new facilities. However, work on utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from an increase in energy consumption. Long-term, minor, beneficial impacts on the utilities systems would be expected because of implementation of Project C6 because of removal of outdated systems associated with demolition (Project D23) and installation of upgraded systems. Long-term, negligible, beneficial effect on the liquid fuels infrastructure would be expected because of the removal of an aging generator associated with Project D23.

Stormwater System. S hort-term, negligible, adverse impacts would be expected as a result of Project C6 because of the temporary disturbance of stormwater systems during construction and demolition. Long-term, negligible, adverse impacts on the stormwater system would be expected because of an increase of impervious surface area associated with Project C6 site improvements. In addition, impacts would be minimized through the use of federally required planning, design, construction, and maintenance practices that require project sites greater than 5,000 ft^2 maintain or restore predevelopment site hydrology to the maximum extent technically feasible per Section 438 of the EISA.

Solid Waste. Short-term, minor, adverse impacts would result from increased construction and demolition debris associated with Project C6. Contractors would be required to recycle debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-

term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Project C6 is presented in **Table 4-14**.

Table 4-14. Estimated Project C6 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
35,000	D23	32,474	77	2,565

Transportation Network: Airfield. Short-term, negligible, adverse impacts on the airfield would be expected during construction of the Deployment Processing Center. It is expected that construction activities would be phased to avoid active missions and that the alternate runway, taxiway, and parking aprons would be available for use during active construction, as needed. Access to the Deployment Processing Center construction zone would be established in a manner with the least effect on the active airfield. Long-term, negligible, beneficial impacts on the airfield would be expected because of implementation of Project C6 from personnel in the Southeast Development District having ready access to a new Deployment Processing Center in the same location.

Transportation Network: Roadways, Gates, Parking, and Pedestrian Access. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during construction and demolition activities associated with Project C6 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project C6 construction zones, and staged to minimize effect on adjacent areas.

Long-term, negligible, beneficial impacts on Southeast Development District parking availability would be expected as adequate parking designs are included in new construction plans associated with Project C6.

No long-term impacts on local roadways, installation access gates, or pedestrian traffic would be expected from implementation of Project C6.

Geological Resources. Short-term, negligible, adverse effects would be expected on geological resources as a result of demolition (Project D23), debris removal, site preparation (i.e., grading, excavating, and recontouring) and restoration, and construction under Project C6. Potential impacts on topography are considered negligible as the project location is in the developed portions of Cannon AFB, requiring only minor grading and excavation. Impacts would be limited to demolition (resulting in bare areas that would be eventually re-vegetated) and regarding during construction.

Short term, negligible effects on soils would be expected from implementation of Project C6. The primary effects would be soil compaction, disturbance, and erosion during demolition and

construction. Implementation of environmental protection measures described in **Section 5.2** would minimize erosion impacts.

Water Resources. No short-term adverse effects on groundwater resources would occur as a result of Project C6. Demolition and construction would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Implementation of stormwater management controls would minimize potential sedimentation concerns. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from demolition or construction equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges. It is expected that operations in the proposed facilities would increase water demand; therefore, there is a negligible long-term minimal increased risk to groundwater.

Long-term, minor adverse effects on the 100-year floodplain could occur as a result of Project C6. Construction of the Deployment Processing Center would result in an increase of obstructions and impervious surfaces within the 100-year floodplain. During construction activities, temporary sediment and surface runoff around the construction site would be possible; however, the use of BMPs would minimize these effects.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, minor, indirect adverse effects on vegetation could result from disturbance associated with construction and demolition activities. Long-term, minor, adverse effects on vegetation would occur from conversion of disturbed grassland vegetation to impervious surfaces. Effects would be minor because areas of the surrounding disturbed grassland habitat would not be affected as a result of Project C6 (see **Figures 3-4** and **3-5**) and would be available as habitat for wildlife currently using the site for the proposed project. Vegetation within the project area would remain in place to the maximum extent feasible. Demolition of the existing Deployment Processing Facility (Project D23) would also occur under this alternative. This demolition would occur within the urban habitat area on Cannon AFB; and area would be re-vegetated following demolition and the urban habitat surrounding the D23 project area would remain.

Wildlife. Short- and long-term, negligible to minor, adverse effects on wildlife would occur during construction and demolition because of noise and the possible mortality of small less mobile terrestrial species. Long-term, negligible, adverse effects could result from the conversion of disturbed grassland habitat to impervious surfaces. The surrounding disturbed grassland habitat and the other habitat areas on and surrounding Cannon AFB would provide suitable habitat for temporarily and permanently displaced species. No potential habitat would be removed under Project D23.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. If these species are observed during construction, the Cannon AFB Natural Resources Program Manager would be contacted and the species would be given sufficient time to move away from the project area on its own before resuming activities. There are no known black-tailed prairie

dog populations within the project area. Additionally, all necessary surveys would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. Adjacent areas of the disturbed grassland habitat would not be affected under the Proposed Action and migratory birds would be expected to relocate to these habitats. All necessary surveys, including surveys of buildings to be demolished, would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Cultural Resources. No impact on cultural resources would be expected under Project C6. The project would not occur near any NRHP-eligible buildings or structures. One building not eligible for NRHP listing would be demolished: Building 620, Deployment Processing Facility, constructed in 1961. The proposed construction area for project is previously disturbed from development. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed Deployment Processing Center would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the construction or maintenance of the Deployment Processing Center would need to be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result. All hazardous materials and wastes would be handled, stored, transported, and disposed of in accordance with applicable USAF regulations and federal, state, and local requirements.

Demolition of the existing Deployment Processing Center, which was constructed in 1961, would have short-term adverse impacts on hazardous materials and waste, primarily through the potential for disturbing special hazards, such as ACM, LBP and PCBs. The Deployment Processing Center would be surveyed for these hazards prior to the start of demolition activities. All ACM, LBP, and PCBs discovered during surveys would be handled in accordance with USAF policy. With appropriate surveys, sampling, analysis, and abatement, the potential impacts on hazardous wastes from the demolition of the Deployment Processing Center would be less than significant.

Health and Safety. Construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction would increase during the construction of the new Deployment Processing Center. The construction site is located outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. Therefore, there would be short-term minor adverse impacts on health and safety from construction.

The demolition of the existing Deployment Processing Center would adhere to all OSHA and USAF safety standards and demolition contractors would maintain safety procedures. The

potential does exist for demolition contractors to be exposed to ACM and LBP. However, prior to any demolition, surveys and testing for ACM and LBP and subsequent remediation, if necessary, would ensure that demolition contractors are not exposed to these special hazards. Therefore, there would be short-term, minor adverse impacts on health and safety from demolition activities.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would be expected from Project C6. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. The proposed construction would occur entirely on Cannon AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents.

No long-term adverse effects on socioeconomic resources would be expected because Project C6 does not involve any change in personnel, housing, or public services.

4.3.1.7 PROJECT C7: LODGING FACILITY

Noise. The proposed Lodging Facility would be constructed along the southwestern side of Levitow Avenue, just north of the southwestern end of Eagle Claw Boulevard in the Community District (see **Figure 2-5**). Noise impacts from this project would be short-term, negligible, and adverse during demolition and construction. Because this project would move lodging further from the runway and aircraft noise, a long-term, minor beneficial impact on the ambient noise environment would occur.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the new Lodging Facility and demolition of existing lodging support facilities (including Project D5). Construction and demolition would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction would be temporary.

Emissions from Project C7, presented in **Table 4-15**, would not contribute to or affect local or regional attainment status with respect to the NAAQS. These emissions represent construction and demolition over the duration of the project, which is estimated to be from January 2025 through April 2027. New operational emissions (e.g., space heating) are not included as they are expected to be minor and offset by operations that were eliminated because of demolition of similar facilities. Therefore, long-term effects on air quality would be expected to be close to neutral.

Land Use. Construction of the new lodging facility would occur in the Community District with a Housing (Unaccompanied) land use designation. The project would have long-term, minor beneficial impacts on land use because the new facility would be appropriately relocated away from the airfield and reconfigured to better accommodate visiting personnel and their families while providing consolidated support functions for ease of access. No land use designation

Table 4-15. Estimated Total Air Emissions Resulting from Project C7

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2025 through Apr. 2027	3.394	0.914	4.994	0.115	5.101	0.123	1,010.761
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

change would be required as a result of the project, and the proposed facility would be consistent with existing facilities and support functions in the area.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply, and sanitary sewer) from interruptions could be experienced when utilities are disconnected from buildings proposed for demolition and connected to new facilities. However, work on the utilities system would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from energy consumption. Long-term, minor, beneficial impacts on communications, electrical, natural gas, and sanitary sewer systems would be expected from implementation of Project C7 because of removal of outdated utilities associated with demolition (Project D5) and the installation of utility upgrades.

Long-term, minor, beneficial impacts on the water supply system would be expected from implementation of Project C7 because of removal of outdated water system fixtures, including laundry facilities, associated with demolition (Project D5) and installation of upgraded water system fixtures including laundry facilities associated with new lodging facilities.

Stormwater System. Short-term, negligible, adverse impacts would be expected under Project C7 because of the temporary disturbance of the stormwater systems during construction and demolition. No long-term, adverse impacts on the stormwater system would be expected because site improvements would increase impervious surface area by approximately 25,000 ft^2, which would, however, be offset by the demolition of approximately 34,000 ft^2 of impervious area associated with existing Building 1801 Lodging Support (Project D5) and other lodging facilities already slated for demolition. In addition, impacts would be minimized through the use of federally required design practices that require project sites maintain or restore predevelopment site hydrology (CAFB 2016c).

Solid Waste. Short-term, minor, adverse impacts would result from increased construction and demolition debris associated with Project C7. Contractors would be required to recycle debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-

term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Project C7 is presented in **Table 4-16**.

Table 4-16. Estimated Project C7 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
25,000	D5	3,780	55	299

Transportation Network. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during construction and demolition associated with Project C7 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to personnel via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project C7 construction zones, and staged to minimize effect on adjacent areas.

Long-term, negligible, beneficial impacts on installation-wide parking would be expected as adequate parking designs are included in new construction plans associated with Project C7. No long-term impacts on local roadways or installation access gates would be expected. Long-term, negligible, beneficial impact on pedestrian traffic would be expected from implementation of Project C7 because of consolidation of lodging facilities. No impacts on the airfield would be expected.

Geological Resources. Short-term, negligible, adverse effects would be expected on geological resources as a result of demolition (Project D5), debris removal, site preparation, restoration, and construction under Project C7. Potential impacts on topography are considered negligible because the project location is in the previously developed portions of Cannon AFB.

Short-term, negligible effects on soils would be expected from implementation of Project C7. Effects would result from compaction, disturbance, and erosion during demolition and construction activities. Implementation of environmental protection measures (described in **Section 5.2**) would minimize erosion impacts.

Water Resources. No short-term adverse effects on groundwater resources could occur as a result of Project C7. Demolition and construction activities would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Based on existing soil conditions, any incidental contaminant discharges from construction equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges. Long-term, negligible, adverse effects on groundwater resources would occur as a result of Project C7 because of the increased requirement for water for the project. It is expected that operation of the proposed facility would increase water

demand; therefore, there is an increased negligible long-term risk on groundwater resources. No impacts on the 100-year floodplain are anticipated, as Project C7 is outside the floodplain.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, minor, indirect adverse effects on vegetation could result from disturbance associated with construction and demolition. Long-term, negligible, adverse effects on vegetation could occur from conversion of urban habitat vegetation to impervious surfaces. Areas containing vegetation within the surrounding urban habitat would not be affected as a result of Project C7 (see **Figures 3-4** and **3-5**) and would be available as habitat for wildlife currently using the site for the proposed project. Vegetation within the project area would remain in place to the maximum extent feasible. The vegetation within the project area is primarily composed of landscaped grasses and a few ornamental trees. Proposed landscaping would be completed using approved plant species. Demolition of the existing Lodging Support facility (Project D5) would occur within the urban habitat area on Cannon AFB and the area; however, it would be re-vegetated and the urban habitat surrounding the D5 project area would remain.

Wildlife. Short- and long-term, negligible to minor, adverse effects on wildlife would occur during construction and demolition. The conversion of urban habitat to paved surfaces and facilities would be negligible because the surrounding urban habitat and the other habitat areas elsewhere on Cannon AFB would provide suitable habitat for temporarily and permanently displaced species. No potential habitat would be removed under Project D5.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. All of these species would likely be transient if present within the project areas. The presence of burrowing owl, Cassin's sparrow, lark bunting, and long-billed curlew nests as well as black-tailed prairie dog and swift fox burrows would be unlikely because of the degree of vegetation maintenance that occurs within the urban habitat. However, all necessary surveys would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. However, migratory birds would be expected to relocate to trees and shrubs present throughout the urban habitat in the housing area and golf course and other nearby habitats. All necessary surveys would be conducted prior to construction and all applicable BMPs would be followed.

Cultural Resources. No impact on cultural resources would be expected under Project C7. The project would not occur near any NRHP-eligible buildings or structures. One building not eligible for NRHP listing would be demolished: Building 1801, Lodging Support, constructed in 1968.

The proposed construction area for Project C7 is previously disturbed. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is

made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed Lodging Facility would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the construction or maintenance of the Lodging Facility would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result. All hazardous materials and wastes would be handled, stored, transported, and disposed of in accordance with applicable USAF regulations and federal, state, and local requirements.

Demolition of the existing lodging support facility would have short-term adverse impacts on hazardous materials and waste, primarily through the potential for disturbing special hazards, such as ACM and LBP. The existing facility would be surveyed for these hazards prior to the start of demolition. All ACM and LBP discovered during surveys would be handled in accordance with USAF policy. With appropriate surveys, sampling, analysis, and abatement, the potential impacts on hazardous wastes from the demolition of the existing lodging facilities would be less than significant.

Health and Safety. Short-term, minor, adverse impacts would occur from construction and operation of the proposed Lodging Facility and demolition of the existing lodging facility could occur. During construction, workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction activities would increase during the construction of the new Lodging Facility. The construction site is outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. No long-term, minor adverse impacts on health and safety from construction would be expected.

The demolition of the existing lodging facilities would adhere to all OSHA and USAF safety standards and contractors would maintain safety procedures. The potential would exist for demolition contractors to be exposed to ACM and LBP. However, prior to any demolition, surveys and testing ACM and LBP and subsequent remediation, if necessary, would ensure that demolition contractors are not exposed to these special hazards.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would also be expected from Project C7. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. The proposed construction would occur entirely on Cannon AFB in a non-residential portion of the installation, and would have little potential to affect on- or off-installation residents adversely.

This project involves construction of a lodging facility with a new lodging office and 52 rooms for visiting personnel and their families. The project includes demolition of existing lodging support

facility near the airfield; however, the end-state number of suites available to personnel would not change as a result of Project C7. The proposed Lodging Facility would be constructed along the southwestern side of Levitow Avenue and would relocate lodging facilities further from the runway. This would reduce noise impacts and provide an improved facility for visiting personnel and their families. Therefore, long-term, minor, beneficial impacts on socioeconomic resources would be expected.

4.3.1.8 PROJECT C8: TRANSPORTATION COMPLEX

Alternative C8-1

Noise. Under this alternative, the proposed Transportation Complex would be constructed to the east of Chindit Boulevard just south of West Street (see **Figure 2-6**). Short-term, negligible adverse impacts on noise would occur under Alternative C8-1. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest receptor (golf course), most noise associated with demolition and construction activities for this project would likely be below 65 dBA before it reaches users of the golf course. Noise impacts from this project would be temporary during construction. Apart from minor noise levels from operation of vehicles at the facility, no long-term impacts on the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the new Transportation Complex and demolition of existing transportation maintenance/ management facilities (Projects D25, D30 through D35). Construction and demolition would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction would be temporary.

Emissions from Project C8-1 would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the new Transportation Complex and demolition of existing Transportation maintenance/management facilities are summarized below in **Table 4-17**. These emissions represent construction and demolition activities over the duration of the project, which is estimated to be from January 2026 through June 2028. New operational emissions (e.g., space heating, maintenance chemical use) are not included as they are expected to be minor and offset by operations that were eliminated because of demolition of similar facilities. Therefore, long-term effects on air quality would be expected to be close to neutral.

Land Use. Construction and operation of the proposed Transportation Complex in the North Ramp Planning District where land is designated for commercial and industrial use would be compatible with existing facilities, noise exposure (i.e., 65 dBA noise contour), and support functions in the area. Consolidation of the transportation support functions, which currently exist in five separate buildings that are scattered across the installation, into one complex would have

Table 4-17. Estimated Total Air Emissions Resulting from Project C8-1

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2026 through Jun. 2028	4.456	1.398	6.324	0.015	14.626	0.161	1,309.980
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

long-term, minor beneficial impacts on land use because the associated services would be more easily accessed and would better support operational efficiency.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply, and sanitary sewer) from interruptions could be experienced when utilities are disconnected from buildings proposed for demolition and connected to new facilities. However, work on the utilities system would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from an increase in energy consumption. Long-term, minor, beneficial impacts on utilities would be expected from implementation of Alternative C8-1 because of removal of outdated utilities associated with demolition and upgrades to utilities systems.

Stormwater System. Short-term, negligible, adverse impacts would be expected from Alternative C8-1 because of the temporary disturbance of the stormwater systems during construction and demolition activities. No long-term, adverse impacts on the stormwater system would be expected because the site improvements associated with Alternative C8-1 would be offset by the demolition of existing impervious areas. In addition, impacts would be minimized through the use of federally required design practices that require project sites maintain or restore predevelopment site hydrology (CAFB 2016c).

Solid Waste. Short-term, minor, adverse impacts would result from increased construction and demolition debris associated with Alternative C8-1. Contractors would be required to recycle debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Alternative C8-1 is presented in **Table 4-18**.

Transportation Network. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during construction and demolition associated with Alternative C8-1 as personnel and construction vehicles access the installation. The associated increase in construction traffic

Table 4-18. Estimated Project C8 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
51,000	D25, D30, D31, D32, D39, D34, D35	55,630	112	4,395

would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project C8 construction zones, and staged to minimize effect on adjacent areas.

Long-term, negligible, beneficial impacts on installation parking would be expected as adequate parking designs are included in new construction plans associated with Alternative C8-1. No long-term impacts on the airfield, pedestrian traffic, local roadways, or installation access gates would be expected.

Geological Resources. Short-term, negligible adverse effects, because of the number of demolition projects, would be expected on the topography as a result of debris removal, site preparation, restoration, and construction activities under Alternative C8-1. Potential impacts are considered negligible as the project location is in the previously developed portions of Cannon AFB, requiring only minor grading and excavation.

Short term, negligible effects on soils would be expected from implementation of the Preferred Alternative. The primary effects would be soil compaction, disturbance, and erosion during demolition and construction activities.

Water Resources. No short-term adverse effects on groundwater resources could occur as a result of Alternative C8-1. Demolition and construction associated with the Proposed Action (i.e., minor grading, excavation, and foundation preparations for proposed building, road, and utility systems) would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Additionally, the implementation of stormwater management controls would minimize potential sedimentation concerns. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from demolition or construction equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges. Long-term, negligible, adverse effects on groundwater resources would occur as a result of Alternative C8-1, because of the increased requirement for water for Alternative C8-1. It is expected that operation of the proposed facilities would increase water demand; therefore, there is an increased negligible long-term risk on groundwater resources.

Long-term, minor, effects on the 100-year floodplain could occur as a result of Alternative C8-1. Construction of the Transportation Complex would result in a minimal increase of impervious surfaces within the 100-year floodplain, as Alternative C8-1 would be on the fringe of the

floodplain. Short-term sediment and surface runoff around the construction site would be possible; however, the use of BMPs would minimize these effects. Long-term, minor, adverse impacts on the floodplains would occur if the existing impervious surfaces within the 100-year floodplain remain impervious following construction.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, negligible, indirect adverse effects on vegetation could result from disturbance associated with demolition and construction activities. No long-term effects on vegetation would occur because the Alternative C8-1 footprint (see **Figure 2-6**) is covered in impervious surfaces; therefore, no urban habitat vegetation would be removed under this alternative. Various demolition projects (Projects D25 and D30 to D35) would also occur under this alternative.

Wildlife. Short and long-term, negligible, adverse effects on wildlife would occur during construction and demolition because of noise and mortality of small less mobile terrestrial species as a result of collision with construction equipment. No potential urban habitat would be removed under this alternative or Projects D25 and D30-35.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. All of these species would likely be transient if present within the project areas.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. However, there is no habitat present within the C8-1 or association demolition project areas, and surrounding urban habitat would not be affected under this alternative.

Cultural Resources. No impact on cultural resources would be expected under Alternative C8-1. The proposed project would not occur near any NRHP-eligible buildings or structures. Seven buildings not eligible for NRHP listing would be demolished: Buildings 215, 226, 227, 335, 375, 379, and 438, which were constructed between 1955 and 1990. The proposed construction area for Alternative C8-1 has been disturbed by previous development. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed Transportation Complex would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the construction or maintenance of the Transportation Complex would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result. Further, all hazardous materials and wastes would be

handled, stored, transported, and disposed of in accordance with applicable USAF regulations and federal and state requirements.

The use of the proposed vehicle maintenance shop, vehicle wash rack, and vehicle parking area has the potential for POL spills. However, the use of POLs would follow all federal, state and local regulations for waste management as well as USAF guidance, minimizing the likelihood of POL spills. Potential impacts from POL spills would be further reduced by following the requirements of the Cannon AFB SPR Plan (CAFB 2017d). Oil/water separators (OWSs) would be used at the proposed Transportation Complex and their use and maintenance would follow the requirements described by the Cannon AFB Oil/Water Separator Management Plan (CAFB 2016d) minimizing any potential adverse impacts from hazardous materials and wastes. Battery storage would be constructed and operated for automotive batteries associated with the Transportation Complex. All used automotive batteries would be recycled through battery vendors as described by the Cannon AFB Hazardous Waste Management Plan (CAFB 2017e).

Demolition of the Buildings 215, 226, 227, 335, 375, 379, and 438 (constructed in 1963, 1985, 1990, 1955, 1968, 1965, and 1990 respectively) would have short-term adverse impacts on hazardous materials and waste, primarily through the potential for disturbing special hazards, such as ACM, LBP and PCBs. Buildings 215, 226, 227, 335, 375, and 438 would be surveyed for these special hazards prior to the start of demolition activities. All ACM, LBP, and PCBs discovered during surveys would be handled in accordance with USAF policy. Cannon AFB's 90-day hazardous waste accumulation point (Buildings 226 and 227) would be relocated elsewhere on the installation prior to demolition of these buildings. With appropriate surveys, sampling, analysis, and abatement, the potential impacts on hazardous wastes from the demolition of Buildings 215, 226, and 227 would be less than significant.

Health and Safety. Construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction would increase during the construction of the new Transportation Complex. The construction site is outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. Therefore, there would be short-term, minor adverse impacts on health and safety from construction.

The demolition of Buildings 335, 375, 379, 438, 215, 226, and 227 would adhere to all OSHA and USAF safety standards and demolition contractors would maintain safety procedures. The potential would exist for demolition contractors to be exposed to ACM, LBP and PCBs in several of these buildings. However, prior to any demolition, surveys and testing for these special hazards and subsequent remediation, if necessary, would ensure that demolition contractors are not exposed to these special hazards. Therefore, there would be short-term minor adverse impacts on health and safety from demolition.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would also be expected from Alternative C8-1. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. The proposed construction would occur entirely on Cannon AFB in a non-residential

portion of the installation, and would have little potential to adversely affect on- or off-installation residents.

This project would provide a consolidated modern, energy-efficient, Transportation Complex that would house all transportation personnel and functions in the North Ramp District. No long-term adverse effects on socioeconomic resources would be expected because Alternative C8-1 does not involve any change in personnel, housing, or public services.

Alternative C8-2

Noise. Under this alternative, the proposed facility would be constructed on the east side of West Street, just south of North Aderholt Loop (see **Figure 2-6**). Impacts would be the same as those discussed under Alternative C8-1.

Air Quality. The air emissions and air quality impacts from Alternative C8-2 are conservatively considered the same as those from Alternative C8-1. The different locations for facilities under Alternative C8-1 versus C8-2 have no effect on air quality. Alternative C8-1 includes a slightly larger building demolition footprint than Alternative C8-2; therefore, this larger quantity was assumed for calculating the Alternative C8-1 emissions as a conservative worst case.

Land Use. Impacts associated with this alternative would be the same as those identified for Alternative C8-1.

Infrastructure and Transportation. Impacts on utilities infrastructure and transportation for Alternative C8-2 would be similar to Alternative C8-1, as the only change for Alternative C8-2 is the location of the Transportation Complex. Utilities would instead be routed to this location for the facility.

Geological Resources. Impacts for implementation of Alternative C8-2 would be similar to the Alternative C8-1, because of the proposed location being located just north of the Preferred Alternative.

Water Resources. Under this alternative, the proposed Transportation Complex would be constructed just north of the site for Alternative C8-1. Impacts would be the same as those discussed under Alternative C8-1, except that no impacts on floodplains would also occur.

Biological Resources. Under Alternative C8-2, the Transportation Complex would be constructed approximately 100 feet north of the proposed location under Alternative C8-1, but would be within the urban habitat area (see **Figure 2-6**). This alternative would require removal of urban vegetation and habitat. Therefore, in addition to the effects described under Alternative C8-1 above, long-term, negligible, direct adverse effects on vegetation could occur. Vegetation within the Alternative C8-2 project area is primarily composed of landscaped grasses. Effects would be negligible because areas containing vegetation within the surrounding urban habitat would not be affected under Alternative C8-2 and vegetation within the project area would remain in place to the maximum extent feasible. Long-term, negligible, direct adverse effects on wildlife (including protected species and migratory birds) could occur but surrounding habitat would similarly provide suitable habitat for temporarily and permanently displaced species.

Cultural Resources. No impact on cultural resources would be expected under Alternative C8-2. The proposed project would not occur near any NRHP-eligible buildings or structures. Six buildings not eligible for NRHP listing would be demolished: Buildings 211, 214, 335, 375, 379, and 438), which were constructed between 1955 and 1990. The proposed construction area for Alternative C8-2 has been disturbed by previous development. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Impacts on hazardous materials and wastes from Alternative C8-2 would be similar to those described for Alternative C8-1. However, the demotion of Buildings 209, 211, 212, and 214 (constructed in 1993, 1955, 1983, and 1966, respectively) would occur instead of Buildings 215, 226, and 227.

Health and Safety. Impacts on health and safety from the implementation of Alternative C8-2 would be similar to those described for Alternative C8-1.

Socioeconomics. Alternative C8-2 would have short-term, minor, beneficial effects on socioeconomic resources similar to those from Alternative C8-1.

4.3.1.9 PROJECT C9: WING HQ/LAW CENTER

Alternative C9-1

Noise. Under this alternative, a three-story Wing HQ/Law Center would be constructed approximately 20 feet southeast of the current Wing HQ, at the eastern corner of the intersection of Air Commando Way and Albright Avenue.

Short-term, negligible adverse impacts on noise would occur under Alternative C9-1. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest residence, most noise associated with demolition and construction activities for this project would likely be below 65 dBA before it reaches the residence. Noise impacts from this project would be temporary during construction. No long-term impacts on the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the new Wing HQ/Law Center and demolition of existing Wing HQ/Law Center (Projects D28 and D29). Construction and demolition activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction would be temporary.

Emissions from Project C9-1 would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the new Wing HQ/Law Center and demolition of the existing Wing HQ and Law Center are summarized below in **Table 4-19**. These emissions represent construction and demolition over the duration of the project, which is

Table 4-19. Estimated Total Air Emissions Resulting from Project C9-1

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2026 through Jul. 2028	4.085	1.056	5.835	0.014	13.388	0.151	1,198.419
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

estimated to be from January 2026 through July 2028. New operational emissions (e.g., space heating) are not included as they are expected to be minor and offset by operations that were eliminated because of demolition of similar facilities. Therefore, long-term effects on air quality would be expected to be close to neutral.

Land Use. Construction of the proposed Wing HQ/Law Center in the North Ramp District's Administrative land use designation would be compatible with the existing facilities, noise exposure (i.e., 65 dBA noise contour), and support functions located in the area. The project would have long-term, minor beneficial impacts on land use because it would consolidate like and complementary support services (i.e., the Wing HQ, Law Center, Public Affairs Office, and the Inspector General Office) into one complex. No land use designations or changes to functional uses in the area would result from the proposed project under this alternative.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply, and sanitary sewer) from interruptions could be experienced when utilities are disconnected from buildings proposed for demolition and connected to new facilities. However, work on the utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from an increase in energy consumption. Long-term, minor, beneficial impacts on utilities would be expected from implementation of Alternative C9-1 because of removal of outdated utilities associated with demolition (Projects D28 and D29) and the installation of new utilities, including a new water service line, new 6-inch lateral sanitary sewer service line, new natural gas line, and new communications line conduits (CAFB 2008).

Stormwater System. Short-term, negligible, adverse impacts would be expected from Alternative C9-1 because of the temporary disturbance of the stormwater systems during construction and demolition activities. No long-term, adverse impacts on the stormwater system would be expected because the site improvements associated with Alternative C9-1 that increase impervious surface area would be offset by the demolition of existing impervious areas. Stormwater from the site would be directed away from the new building by sheet flow to

adjacent landscaped or paved areas, and landscaped areas would drain to existing streets or to new drives and parking areas. The new parking area would drain to existing streets; however, there would be adequate space available within the project site to provide retention ponds to contain the volume of runoff associated with the increase of impervious surface area related to this project (CAFB 2008). In addition, impacts would be minimized through the use of federally required design practices that require project sites maintain or restore predevelopment site hydrology (CAFB 2016c).

Solid Waste. Short-term, minor, adverse impacts would result from increased construction and demolition debris associated with Alternative C9-1. Contractors would be required to recycle debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Alternative C9-1 is presented in **Table 4-20**.

Table 4-20. Estimated Project C9 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
26,500	D28, D29	26,458	58	2,090

Transportation Network. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during construction and demolition associated with Alternative C9-1 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project C9 construction zones, and staged to minimize effect on adjacent areas.

Long-term, negligible, beneficial impacts on installation parking would be expected, as adequate parking designs, including 161 parking spaces which is expected to exceed the minimum number of spaces required (CAFB 2008), are included in new construction plans associated with Alternative C9-1. No long-term impacts on airfields, local roadways, or installation access gates would be expected. Long-term, negligible, beneficial impacts on pedestrian traffic would be expected from implementation of Alternative C9-1 because of consolidation of Wing HQ/Law Facility and construction of new sidewalks (CAFB 2008).

Geological Resources. Short-term, negligible, adverse effects, because of the number of demolition projects, would be expected on the natural topography as a result of debris removal, site preparation, restoration, and construction activities under the Alternative C9-1. Potential impacts are considered negligible as the project location is in the previously developed portion of Cannon AFB, requiring only minor grading and excavation.

Although much of this site is currently impervious, short-term, negligible effects on soils would be expected from implementation of Alternative C9-1 when the pavements are removed for foundation construction. The primary effects would be soil compaction, disturbance, and erosion around the site during demolition and construction.

Water Resources. No short-term adverse effects on groundwater resources would occur as a result of Alternative C9-1. Demolition and construction would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table or recharge points. Long-term, negligible, adverse effects on groundwater resources would occur, because of the increased requirement for water for Alternative C9-1. It is expected that operation of the proposed facilities would increase water demand; therefore, there is an increased negligible long-term risk on groundwater resources. No impacts on the 100-year floodplain are anticipated, because Alternative C9-1 is located outside the floodplain.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, minor, indirect adverse effects on vegetation could result from disturbance associated with demolition and construction. Long-term, negligible, adverse effects on vegetation could occur from conversion of urban habitat vegetation to impervious surfaces. Surrounding areas containing urban habitat would not be affected under Alternative C9-1 (see **Figures 3-4** and **3-5**) and vegetation within the project area would remain in place to the maximum extent feasible. Vegetation is primarily composed of landscaped grasses and dispersed ornamental trees.

Wildlife. Short- and long-term, negligible to minor, adverse effects on wildlife would occur during construction and demolition because of noise and mortality of small less mobile terrestrial species as a result of collision with construction equipment. Long-term, negligible, adverse effects could result from the conversion of urban habitat to paved surfaces and facilities. The surrounding urban habitat and the other habitat areas on Cannon AFB would provide suitable habitat for temporarily and permanently displaced species. No potential habitat would be removed under Projects D28 or D29.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. All of these species would likely be transient if present within the project areas. All necessary surveys would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds would be similar to those described for wildlife if these species are present within the project area.

Cultural Resources. Long-term, negligible, adverse impacts would occur on cultural resources under Alternative C9-1. Demolition of Building 1 (Wing HQ) would occur near NRHP-eligible Building 2, a flagpole constructed in 1943. A protective 20-foot buffer would be fenced around the flagpole and would be maintained during demolition and construction activities to avoid direct effects. Demolition of Building 1 would have a negligible indirect adverse impact on

Building 2 resulting from changes to the surrounding visual environment. Although Building 1 is adjacent to Building 2, the historic significance of the flagpole is described in the evaluation as associated with the installation as a whole. Therefore, demolition of Building 1 would not cause an adverse effect under the NHPA. No other impacts would occur on architectural resources. Two buildings not eligible for NRHP listing would be demolished: Building 1 (Wing HQ), constructed in 1960, and Building 60 (Law Center), constructed in 1962.

The proposed construction area for Alternative C9-1 has been disturbed by previous development. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed Wing HQ/Law Center would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the construction or maintenance of the Wing HQ/Law Center would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result.

Demolition of the current Wing HQ (constructed in 1960) and Law Center (constructed in 1962) would have short-term adverse impacts on hazardous materials and waste, primarily through the potential for disturbing special hazards, such as ACM, LBP, and PCBs. The current Wing HQ and Law Center would be surveyed for these special hazards prior to the start of demolition activities. All ACM, LBP, and PCB-containing materials discovered during surveys would be handled in accordance with USAF regulations. With appropriate surveys, sampling, analysis, and abatement, the potential impacts on hazardous wastes from the demolition of the current Law Center would be less than significant.

Health and Safety. Construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction would increase during the construction of the Wing HQ/Law Center. The Wing HQ/Law Center construction site is outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. Therefore, there would be short-term, minor adverse impacts on health and safety from construction. No long-term impacts on health and safety from construction and use of the Wing HQ/Law Center would occur.

The demolition of the original Wing HQ and Law Center buildings would adhere to all OSHA and USAF safety standards and demolition contractors would maintain safety procedures. The potential does exist for demolition contractors to be exposed to ACM LBP, and PCBs in these two buildings. Prior to any demolition, surveys and testing for these special hazards and subsequent remediation, if necessary, would ensure that demolition contractors are not exposed to these special hazards. Therefore, there would be short-term minor adverse impacts on health and safety from demolition. No long-term impacts from the demolition would be anticipated.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would also be expected from Project C9 under either alternative. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. The proposed construction would occur entirely on Cannon AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents.

This project includes a replacement facility that would consist of HQ space, administrative office space, courtroom, and associated facilities. The current Law Center would be vacated and the buildling would be demolished. The proposed facility would be fully compliant with with the Americans with Disabilities Act, would have a soundproof courtroom, a new heating ventilation and air conditioning system, and would have adequate office space. These parts of the project could provide a long term beneficial impact socioeconomic resources because the facility would give access to all personnel and would provide all personnel at the new facility with updated legal facility design guide requirements. It would also improve the daily lives of personnel using the center with a new heating ventilation and air conditions system and adequate office space that the existing center does not provide.

Alternative C9-2

Noise. Under this alternative, the proposed Wing HQ/Law Center would be constructed on the current site of the Law Center, at the northern corner of the Air Commando Way/Albright Avenue intersection. Impacts would be the same as those discussed under Alternative C9-1.

Air Quality. The air emissions and air quality impacts from Alternative C9-2 would be the same as those from Alternative C9-1. The different locations for facilities under Alternative C9-1 versus C9-2 have no effect on air quality.

Land Use. Under this alternative, the proposed Wing HQ/Law Center would be constructed at the current site of the Law Center located immediately northwest of the C9-1 site on the northern corner of the Air Commando Way/Albright Avenue intersection. Land use impacts from implementing this alternative would be the same as those identified for Alternative C9-1.

Infrastructure and Transportation. Impacts on utilities infrastructure and transportation for Alternative C9-2 would be similar to Alternative C9-1, as the only change for Alternative C9-2 would be the Wing HQ/Law Facility would instead be sited on the north side of Air Commando Way. Utilities would instead be routed to this location for the facility.

Geological Resources. Impacts for implementation of Alternative C9-2 would be similar to the Alternative C9-1 because of the proposed location for Alternative C9-2 would be adjacent (northwest) of Alternative C9-1. Short-term, negligible, adverse effects would be expected on the topography and soils as minor grading and excavation would be anticipated to occur.

Water Resources. No short-term adverse effects on groundwater resources could occur as a result of the Alternative C9-2. Demolition and construction activities would create the potential for soil erosion in the project area, but would not encounter the local groundwater table. Any

incidental contaminant discharges from construction equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges. Long-term, negligible, adverse effects on groundwater resources would occur as a result of Alternative C9-2 because of the increased requirement for water for facilities personnel. No impacts on 100-year floodplains are anticipated, because Alternative C9-2 project is located outside the floodplain.

Biological Resources. Under Alternative C9-2, the proposed Wing HQ/Law Center would be constructed approximately 75 feet northwest of the proposed location under Alternative C9-1 and would still be located within the urban habitat. All proposed construction and demolition would be the same as described under Alternative C9-1; therefore, effects on biological resources would be similar to those described under Alternative C9-1.

Cultural Resources. Impacts under Alternative C9-2 would be similar to those described for Alternative C9-1. Demolition of Building 1 (Wing HQ) would change the visual environment surrounding the adjacent NRHP-eligible Building 2 (flagpole). Building 2 is associated with the installation as a whole and not specifically Building 1; therefore, the proposed demolition would not have an adverse effect under the NHPA. A protective 20-foot buffer would be fenced around Building 2 and would be maintained during demolition and construction to avoid direct effects. No impacts would be expected on archaeological resources.

Hazardous Materials and Waste. Impacts on hazardous materials and wastes from Alternative C9-2 would be the same as described for Alternative C9-1.

Health and Safety. Impacts on health and safety from the implementation of Alternative C9-2 would be similar to those described for Alternative C9-1.

Socioeconomics. Alternative C9-2 would have short-term, minor, beneficial effects on socioeconomic resources as described under Alternative C9-1.

4.3.1.10 PROJECT C10: SPECIAL OPERATIONS FORCES (SOF) SQUADRON OPERATIONS FACILITY

Alternative C10-1

Noise. Under this alternative, the proposed SOF Squadron Operations Facility would be constructed to the northeast of the intersection of Liberator Avenue and Talon Street, approximately 1,300 feet east of the golf course. The demolition of related facilities (Projects D36 through D39), including the current CV-22 Squadron Operations Facility would occur.

Short-term, negligible adverse impacts on noise would occur under Alternative C10-1. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest receptor (the golf course), most noise associated with demolition and construction activities for this project would likely be below 65 dBA before it reaches users of the golf course. Noise impacts from this project would be temporary during construction. No long-term impacts on the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the SOF Squadron Operations Facility and demolition of other related existing

facilities. Construction and demolition activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction and demolition to suppress emissions. All emissions associated with construction would be temporary.

Emissions from Project C10-1 would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the SOF Squadron Operations Facility and demolition of other related existing facilities are summarized below in **Table 4-21**. These emissions represent construction and demolition activities over the duration of the project, which is estimated to be from January 2019 through April 2021. New operational emissions (e.g., space heating) are not included as they are expected to be minor and offset by operations that were eliminated because of demolition of similar facilities. Therefore, long-term effects on air quality would be expected to be close to neutral.

Table 4-21. Estimated Total Air Emissions Resulting from Project C10-1

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2019 through Apr. 2021	6.001	1.252	5.692	0.013	6.265	0.285	1,114.522
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

Land Use. The new consolidated SOF Squadron Operations Facility would be constructed and operated in the Industrial land use designation of the North Ramp District. Aircraft support operations that would be conducted in the new facility would not be incompatible with the industrial functions that currently exist in and around the immediate area. SOF operations would be generally compatible with operations in both the industrial land use area and the immediately adjacent Aircraft Operations and Maintenance Facilities land use area. Additionally, siting the SOF Squadron Operations Facility proximally to the airfield provides greater operational efficiency and better supports CV-22 squadron operations, which are currently scattered in separate facilities across the installation. In conformance to the Cannon AFB IDP future planning goals for land use efficiency and compatibility, the land for the SOF Squadron Operations Facility should become incorporated into the Aircraft Operations and Maintenance Facilities land use designation area. This would represent long-term, minor, beneficial impacts on land use.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply, and sanitary sewer) from interruptions could be experienced when utilities

are disconnected from buildings proposed for demolition and connected to new facilities. However, work on the utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from energy consumption. Long-term, minor, beneficial impacts on utilities would be expected from implementation of Alternative C10-1 because of removal of outdated utilities associated with demolition and the installation of new utilities.

Stormwater System. Short-term, negligible, adverse impacts would be expected from Alternative C10-1 because of the temporary disturbance of the stormwater systems during construction and demolition activities.

No long-term, adverse impacts on the stormwater system would be expected because the site improvements associated with Alternative C10-1 that increase impervious surface would be offset by the demolition of existing impervious areas. In addition, impacts would be minimized through the use of federally required design practices that require project sites greater than 5,000 ft^2 maintain or restore predevelopment site hydrology (CAFB 2016c).

Solid Waste. Short-term, minor, adverse impacts would result from increased construction and demolition debris associated with Alternative C10-1. Contractors would be required to recycle debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Alternative C10-1 is presented in **Table 4-22**.

Table 4-22. Estimated Project C10 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
29,800	D7, D36, D37, D38, D39	26,000	65	2,054

Transportation Network. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during construction and demolition activities associated with Alternative C10-1 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Alternative C10-1 construction zones, and staged to minimize effect on adjacent areas.

Long-term, negligible, beneficial impacts on installation parking would be expected as adequate parking designs are included in new construction plans associated with Alternative C10-1. No

long-term impacts on the airfield, pedestrian traffic, local roadways, or installation access gates would be expected.

Geological Resources. Short-term, negligible adverse effects, because of the number of demolition projects, would be expected on the natural topography as a result of demolition, debris removal, site preparation, restoration, and construction activities under Alternative C10-1. Potential impacts are considered negligible as the project location is in the previously developed portion of Cannon AFB.

Short-term, negligible effects on soils would be expected from implementation of Alternative C10-1. The primary effects would be soil compaction, disturbance, and erosion during demolition and construction.

Water Resources. No short-term adverse effects on groundwater resources would occur as a result of Alternative C10-1. Demolition and construction associated with the Proposed Action (i.e., minor grading, excavation, and foundation preparations for proposed building, road, and utility systems) would create the potential for soil erosion, but would not be anticipated to encounter the local groundwater table. Additionally, the implementation of stormwater management controls would minimize potential sedimentation concerns. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from demolition or construction equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges. Long-term, negligible, adverse effects on groundwater resources would occur as a result of Alternative 1, because of the increased requirement for water for Alternative C10-1. It is expected that operation of the proposed facilities would increase water demand; therefore, there is an increased negligible long-term risk on groundwater resources. No impacts on the 100-year floodplain are anticipated because the Alternative C10-1 project area is outside the floodplain.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, negligible, indirect adverse effects on vegetation could result from disturbance associated with demolition and construction activities. No long-term effects on vegetation would occur because the Alternative C10-1 project area (see **Figure 2-8**) is covered in impervious surfaces; therefore, no urban habitat vegetation would be removed under this alternative. Various demolition projects would also occur under this alternative.

Wildlife. Short and long-term, negligible, adverse effects on wildlife would occur during construction and demolition because of noise and mortality of small less mobile terrestrial species as a result of collision with construction equipment. No potential urban habitat would be removed under this alternative or Projects D36-39.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. All of these species would likely be transient if present within the project areas.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. However, there is no habitat present within

the C10-1 or association demolition project areas, and surrounding urban habitat would not be affected under this alternative.

Cultural Resources. No impacts on cultural resources would be expected under Alternative C10-1. The proposed construction area is currently a parking lot and is not near any NRHP-eligible buildings or structures. The alternative would result in the demolition of three buildings not eligible for NRHP listing: Building 198, 202, and 218, constructed in 1991, 1953, and 1981, respectively. A fourth building, Building 229, would also be demolished but was constructed in 1992, after the Cold War, and is also not eligible for NRHP listing.

Impacts on archaeological resources are not expected. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed SOF Squadron Operations Facility would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the construction or maintenance of the SOF Squadron Operations Facility would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result.

Demolition of the current Buildings 198, 202, 218, and 229 (constructed in 1991, 1953, 1981, and 1992, respectively) would have short-term adverse impacts on hazardous materials and waste, primarily through the potential for disturbing special hazards, such as ACM, LBP, and PCBs. Buildings 198, 202, 218, and 229 would be surveyed for these special hazards prior to the start of demolition activities. All ACM, LBP, and PCB-containing materials discovered during surveys would be handled in accordance with USAF policy. With appropriate surveys, sampling, analysis, and abatement, the potential impacts on hazardous wastes from the demolition of the Current Law Center would be less than significant.

Health and Safety. During construction, construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction activities would increase during the construction of the SOF Squadron Operations Facility. The construction site is outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. Therefore, there would be short-term, adverse minor impacts on safety from construction.

The demolition of Buildings 198, 202, 218, and 229 would adhere to all OSHA and USAF safety standards and demolition contractors would maintain safety procedures. The potential would exist for demolition contractors to be exposed to ACM and LBP in Buildings 202 and 218. However, prior to any demolition, surveys and testing for these special hazards and subsequent remediation, if necessary, would ensure that demolition contractors are not exposed to these special hazards. Therefore, there would be short-term minor adverse impacts on health and safety from demolition.

***Socioeconomics*.** Short-term, minor, beneficial effects on socioeconomic resources would also be expected from Alternative C10-1. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. The proposed construction would occur entirely on Cannon AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents.

No long-term adverse effects on socioeconomic resources would be expected from Alternative C10-1 because it would not involve any change in personnel, housing, or public services.

Alternative C10-2

Noise. Under this alternative, the proposed facility would be constructed at the western corner of the intersection of Chindit Boulevard and D.L. Ingram Avenue, approximately 900 feet south of the golf course. Impacts would be the same as those discussed under Alternative C10-1.

Air Quality. The air emissions and air quality impacts from Alternative C10-2 are essentially the same as those from Alternative C10-1. The different locations for facilities under Alternative C10-1 versus C10-2 have no effect on air quality. Alternative C10-2 includes a slightly larger building demolition footprint than Alternative C10-1; therefore, this larger quantity was assumed for calculating the Alternative C10-1 emissions as a conservative worst case.

Land Use. Construction of the new SOF Squadron Operations Facility in the central portion of the North Ramp District would occupy land area currently designated as Open Area. In conformance to the Cannon AFB IDP future planning goals for land use efficiency and compatibility, the land for the SOF Squadron Operations Facility would become incorporated into the Aircraft Operations and Maintenance Facilities land use designation area. This would represent long-term, minor, beneficial impacts on land use.

Infrastructure and Transportation. Impacts on utilities infrastructure and transportation for Alternative C10-2 would be similar to Alternative C10-1, as the only change for Alternative C10-2 is the location of the SOF Squad Operations Facility. Utilities would instead be routed to this location for the facility.

Geological Resources. Impacts for implementation of Alternative C10-2 would be similar to Alternative C10-1. The site for Alternative C10-2 would also be within the previously developed areas of Cannon AFB, approximately 2,500 feet southwest of Alternative C10-1.

Water Resources. Under this alternative, Alternative C10-2 would be constructed 2,500 feet southwest of Alternative C10-1. Impacts would be the same as those discussed under Alternative C10-1.

Biological Resources. Under Alternative C10-2, the SOF Squadron Operations Facility would be located 2,500 feet southwest of the Alternative C10-1 project area (see **Figure 2-8**) and would still be located within the urban area. A ll proposed construction and demolition would be

the same as described under Alternative C10-1; therefore, effects on biological resources would be similar.

Cultural Resources. No impact on cultural resources would be expected under Alternative C10-2. The proposed construction area is currently the site of modern Building 551 and is not near any NRHP-eligible buildings or structures, and archaeological resources are unlikely. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Waste. Impacts on hazardous materials and wastes from Alternative C10-2 would be the same as described for Alternative C10-1.

Health and Safety. Impacts on health and safety from the implementation of Alternative C10-2 would be similar to those described for Alternative C10-1.

Socioeconomics. Alternative C10-2 would have short-term, minor, beneficial effects on socioeconomic resources similar to those for Alternative C10-1.

4.3.1.11 PROJECT C11: SPECIAL OPERATIONS FORCES (SOF) HANGAR

Alternative C11-1

Noise. This project involves construction of an aircraft maintenance hangar and associated aircraft maintenance shop for remotely piloted aircraft in the North Ramp District. Under this alternative, the proposed SOF Hangar would be constructed at the southwest corner of the flightline in the North Ramp District, approximately 2,900 feet south of the Residential District. Demolition of an existing hangar on the site would occur under this alternative.

Short-term, negligible adverse impacts on noise would occur under Alternative C11-1. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest residence, most noise associated with demolition and construction activities for this project would likely be below 65 dBA before it reaches the residence. Noise impacts from this project would be temporary during construction. Aircraft use the existing hangar at this project site, and this use would continue under the proposed project. No new long-term impacts on the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the SOF Hangar and demolition of existing hangar (Project D10). Construction and demolition would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction would be temporary.

Emissions from Project C11-1 would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the SOF Hangar and

demolition of existing hangar are summarized below in **Table 4-23**. These emissions represent construction and demolition over the duration of the project, which is estimated to be from January 2022 through December 2023. New operational emissions (e.g., space heating) are not included as they are expected to be minor and offset by operations that were eliminated because of demolition of similar facilities. Therefore, long-term effects on air quality would be expected to be close to neutral.

Table 4-23. Estimated Total Air Emissions Resulting from Project C11-1

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2022 through Dec. 2023	3.979	1.168	4.670	0.011	5.669	0.162	955.171
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

Land Use. Construction and operation of the new, larger, aircraft maintenance hangar and shop at the southwest corner of the flightline in the North Ramp District would be compatible with existing land uses, noise exposure (i.e., 65 dBA noise contour), and support functions in the area. The proposed facility at the site for Alternative C11-1 would consolidate and expand the current aircraft maintenance hangar capacity to optimize land use and accommodate improved operational efficiency. This would represent long-term, minor, beneficial impacts on land use.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply and sanitary sewer) from interruptions could be experienced when utilities are disconnected from buildings proposed for demolition and connected to new facilities. However, work on the utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from an increase in energy consumption. Long-term, minor, beneficial impacts on utilities would be expected from implementation of Alternative C11-1 because of removal of outdated utilities associated with demolition and upgrades to utilities.

Stormwater System. Short-term, negligible, adverse impacts would be expected from Alternative C11-1 because of the temporary disturbance of the stormwater systems during construction and demolition. Long-term, negligible, adverse impacts on the stormwater system would be expected because of an increase of impervious surface area associated with Alternative C11-1 site improvements. Impacts would be partially offset by demolition existing impervious areas associated with the Maintenance Hangar proposed for demolition (Project

D10). In addition, impacts would be minimized through the use of federally required planning, design, construction, and maintenance practices that require project sites greater than 5,000 ft^2 maintain or restore predevelopment site hydrology to the maximum extent technically feasible per Section 438 of the EISA.

Solid Waste. Short-term, minor, adverse impacts would result from increased construction and demolition debris associated with Alternative C11-1. Contractors would be required to recycle debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Alternative C11-1 is presented in **Table 4-24**.

Table 4-24. Estimated Project C11 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
49,500	D10	32,754	109	2,588

Transportation Network: Airfield. Short-term, negligible, adverse impacts on the airfield would be expected during construction of the New SOF Hangar. It is expected that construction activities would be phased to avoid active missions and that the alternate runway, taxiway, and parking aprons would be available for use during active construction, as needed. Access to the new SOF Hangar construction zone would be established in a manner with the least effect on the active airfield. Long-term, minor, beneficial impacts on the airfield would be expected because of increased capacity for incoming aircraft.

Transportation Network: Roadways, Gates, Parking, and Pedestrian Access. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during construction and demolition activities associated with Alternative C11-1 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project C11-1 construction zones, and staged to minimize effect on adjacent areas.

Long-term, negligible, beneficial impacts on installation parking would be expected as adequate parking designs are included in new construction plans associated with Alternative C11-1. No long-term impacts on pedestrian traffic, local roadways, or installation access gates would be expected.

Geological Resources. Short-term, negligible, adverse effects would be expected on geological resources as a result of site preparation, restoration, and construction activities under Alternative C11-1. Potential impacts are considered negligible as the project location is in the previously developed portions of Cannon AFB, requiring only minor grading and excavation.

Water Resources. No short-term adverse effects on groundwater resources would occur as a result of C11-1. Demolition and construction would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table or recharge points. Long-term, negligible, adverse effects on groundwater resources would occur, because of the increased requirement for water for Alternative C11-1. It is expected that operation of the proposed facilities would increase water demand; therefore, there is an increased negligible long-term risk on groundwater resources. No impacts on the 100-year floodplain are anticipated, because the C11-1 project is located outside the floodplain.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, negligible, indirect adverse effects on vegetation could result from disturbance associated with construction activities. No long-term effects on vegetation would occur because the C11-1 project area (see **Figure 2-9**) is covered in impervious surfaces; therefore, no urban habitat vegetation would be removed under this alternative.

Wildlife. Short and long-term, negligible to minor, direct adverse effects on wildlife would occur during construction because of noise and mortality of small less mobile terrestrial species as a result of collision with construction equipment. No potential urban habitat would be removed under this alternative.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. All of these species would likely be transient if present within the project areas.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. However, there is no habitat present within the project area, and surrounding urban habitat would not be affected under this alternative.

Cultural Resources. No impacts on cultural resources would be expected under Alternative C11-1. The proposed construction area is currently the site of modern Building 133 and is not near any NRHP-eligible buildings or structures. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed SOF Hangar would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Aircraft maintenance and operation requires the use of hazardous materials. These include a variety of solvents, jet fuel, adhesives, sealants, paints, and lubricants. All hazardous materials and wastes must be handled, stored, transported, and disposed of in accordance with applicable installation policies, USAF regulations, and local state, and federal laws. As such, impacts would be less than significant from the use, storage, or disposal of hazardous materials or wastes associated with the proposed SOF Hangar.

Health and Safety. Construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction would increase during the construction of the SOF Hangar. The construction

site is located outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. Therefore, there would be short-term, minor adverse impacts on health and safety from construction.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would also be expected from Alternative C11-1. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. The proposed construction would occur entirely on Cannon AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents.

No long-term adverse effects on socioeconomic resources would be expected because Alternative C11-1 does not involve any change in personnel, housing, or public services.

Alternative C11-2

Noise. Under this alternative, the proposed facility would be constructed along the flightline, near the southern end of D.L. Ingram Avenue in the North Ramp District, 2,500 feet northeast of Alternative C11-1 and 2,800 feet from the Residential District. Impacts would be the same as those discussed under Alternative C11-1.

Air Quality. The air emissions and air quality impacts from Alternative C11-2 are essentially the same as those from Alternative C11-1. The different locations for facilities under Alternative C11-1 versus C11-2 have no effect on air quality. Alternative C11-1 includes a slightly larger building demolition footprint than Alternative C11-2; therefore, this larger quantity was assumed for calculating the Alternative C11-1 emissions as a conservative worst case.

Land Use. Construction of the project, under this alternative, would locate the facility along the flightline, near the southern end of D.L. Ingram Avenue in the North Ramp District. Operation of the new facility would be compatible with the existing Aircraft Operations and Maintenance Facilities land use, noise exposure (i.e., 65 dBA noise contour), and support functions in the area. As with Alternative C11-1, the proposed facility at Alternative C11-2 would consolidate and expand the current aircraft maintenance hangar capacity to optimize land use and accommodate improved operational efficiency. This would represent long-term, minor, beneficial impacts on land use.

Infrastructure and Transportation. Impacts on utilities infrastructure and transportation for Alternative C11-2 would be similar to Alternative C11-1, as the only change for Alternative C11-2 is the location of the New SOF Hangar. Utilities would instead be routed to this location for the facility.

Geological Resources. Impacts for implementation of Alternative C11-2 would be similar to Alternative C11-1, because of the proposed location also being within the North Ramp District of Cannon AFB, which is previously developed.

Water Resources. Under this alternative, the proposed SOF would be constructed 2,500 feet northeast of the site for Alternative C11-1. Impacts would be the same as those discussed under Alternative C11-1.

Biological Resources. Under Alternative C11-2, the SOF Hangar would be located approximately 0.5 miles northeast of the Alternative C11-1 project area (see **Figure 2-9**) and would still be within the urban area. All proposed construction and impacts would be the same as described under Alternative C11-1.

Cultural Resources. No impacts on cultural resources would be expected under Alternative C11-2. The proposed construction area is currently the site of modern Buildings 173 and 174 and is not near any NRHP-eligible buildings or structures. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Waste. Impacts on hazardous materials and wastes from Alternative C11-2 would be the same as described for Alternative C11-1.

Health and Safety. Impacts on health and safety from the implementation of Alternative C11-2 would be similar to those described for Alternative C11-1.

Socioeconomics. Alternative C11-2 would have short-term, minor, beneficial effects on socioeconomic resources as described above.

4.3.1.12 PROJECT C12: SPECIAL OPERATIONS FORCES (SOF) SIMULATOR FACILITY

Noise. An SOF simulator facility would be constructed as an addition to the existing flight simulator complex. The proposed facility would be constructed on Levitow Avenue between Chindit Boulevard and Air Commander Way in the North Ramp District, 1,700 feet south of the Residential District.

Short-term, negligible adverse impacts on noise would occur under Project C12. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest residence, most noise associated with demolition and construction activities for this project would likely be below 65 dBA before it reaches the residence. Noise impacts from this project would be temporary during construction. No long-term impacts from the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the SOF Simulator Facility. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction would be temporary.

Emissions from Project C12 would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the SOF Simulator Facility are

summarized below in **Table 4-25**. These emissions represent construction over the duration of the project which is estimated to be from January 2027 through November 2028. New operational emissions (e.g., space heating) are not included as they are expected to be minimal. Therefore, long-term, negligible adverse effects on air quality would be expected from this project.

Table 4-25. Estimated Total Air Emissions Resulting from Project C12

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2027 through Nov. 2028	1.937	0.536	3.039	0.007	1.906	0.070	656.487
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

Land Use. Construction of the SOF Simulator Facility in the Open Area of the North Ramp District would be compatible with installation development goals for expanded squadron support functions for that area. Operation of the facility at this location would not be incompatible with the 65+ dBA noise contour that encompasses the site. In conformance to the Cannon AFB IDP for future development goals on the installation, the land use designation would be changed to Aircraft Operations and Maintenance Facilities to reflect the new functional uses at the site. This would represent long-term, minor, beneficial impacts on land use.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on the utilities (communications, electrical, natural gas, water supply and sanitary sewer) would be expected because of Project C12. Short-term interruptions could be experienced when utilities are connected to new facilities during construction. However, work on utilities systems would be temporary and coordinated with area users prior to the start of construction. Long-term, minor, adverse impacts on utilities would occur from an increase in energy consumption. Long-term, minor, beneficial impact on utilities would be expected from implementation of Project C12 because of introduction and usage of utility upgrades.

Stormwater System. Short-term, negligible, adverse impacts would be expected from Project C12 because of the temporary disturbance of the stormwater systems during construction activities. Long-term, negligible, adverse impacts on the stormwater system would be expected because of an increase of impervious surface area associated with the Project C12 site improvements. However, impacts would be minimized through the use of federally required planning, design, construction, and maintenance practices that require project sites greater than 5,000 ft^2 maintain or restore predevelopment site hydrology to the maximum extent technically feasible per Section 438 of the EISA.

Solid Waste. Short-term, minor, adverse impacts would result from increased construction debris associated with Project C12. Contractors would be required to recycle construction debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable construction debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Project C12 is presented in **Table 4-26**.

Table 4-26. Estimated Project C12 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
13,000	None	0	29	0

Transportation Network. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during construction associated with Project C12 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project C12 construction zones, and staged to minimize effect on adjacent areas.

No long-term impacts on local roadways or access gates would be expected because of implementation of Project C12. Long-term, negligible, beneficial impacts on local and installation-wide parking would be expected, as adequate parking designs are included in new construction plans. No impacts on the airfield or pedestrian traffic would be expected from implementation of Project C12.

Geological Resources. Short-term, negligible, adverse effects would be expected on geological resources as a result of site preparation and construction activities under Project C12. Potential impacts on topography are considered negligible as the project location is in a previously developed portion of Cannon AFB and would require only minor grading and excavation.

Short-term, negligible effects on soils would be expected from implementation of Project C12 through soil compaction, disturbance, and erosion during construction activities. Implementation of environmental protection measures (described in **Section 5.2**) would minimize erosion impacts.

Water Resources. No short-term adverse effects on groundwater resources would occur as a result of Project C12. Demolition and construction would create the potential for soil erosion in the project area, but would not encounter the local groundwater table or recharge points. Long-term, negligible, adverse effects on groundwater resources would occur, because of the

increased requirement for water for the project. It is expected that operation of the proposed facility would increase water demand; therefore, there is an increased negligible long-term risk on groundwater resources. No impacts on the 100-year floodplain would be anticipated because Project C12 is outside the floodplain.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, minor, indirect adverse effects on vegetation could result from disturbance associated with construction and demolition. Long-term, negligible, adverse effects on vegetation could occur from conversion of urban habitat vegetation to impervious surfaces. Areas containing vegetation within the surrounding urban habitat would not be affected under Project C12 (see **Figures 3-4** and **3-5**) and would be available as habitat for wildlife currently using the site for the proposed project. Vegetation within the project area would remain in place to the maximum extent feasible. The proposed Simulator Facility would be constructed within a maintained but highly disturbed grassy area.

Wildlife. Short- and long-term, negligible to minor, adverse effects on wildlife would occur during construction because of noise and the possible mortality of small less mobile terrestrial species. Long-term, negligible, adverse effects could result from the conversion of urban habitat to impervious surfaces. The surrounding urban habitat and the other habitat areas elsewhere on Cannon AFB would provide suitable habitat for temporarily and permanently displaced species.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. All of these species would likely be transient if present within the project area. All necessary surveys would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. However, migratory birds would be expected to relocate to trees and shrubs present throughout the urban habitat in the housing area and golf course and other nearby habitats. All necessary surveys would be conducted prior to construction and all applicable BMPs would be followed.

Cultural Resources. No impacts on cultural resources would be expected under Project C12. The proposed construction area is not near any NRHP-eligible buildings or structures and is highly disturbed. There are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed SOF Simulator would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the construction or maintenance of the SOF Simulator Facility would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials

management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result.

Health and Safety. Short-term, minor adverse impacts on health and safety from construction could occur. During construction, construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction would increase during the construction of the SOF Simulator Facility. The construction site is located outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. No long-term impacts on health and safety would be expected.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would be expected from Project C12. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. The proposed construction would occur entirely on Cannon AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents. No long-term adverse effects on socioeconomic resources would be expected because Project C12 does not involve any change in personnel, housing, or public services.

4.3.1.13 PROJECT C13: REFUELER MAINTENANCE FACILITY

Noise. This facility would replace the current Refueler Maintenance Facility north of North Aderholt Loop. The proposed facility would be constructed south of North Alderholt Loop just east of West Street in the North Ramp District, approximately 1,000 feet east of the golf course.

Short-term, negligible adverse impacts on noise would occur under Project C13. As described in **Section 4.2.1**, noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA over 500 feet from the source. Because the project site is more than 500 feet from the nearest receptor (the golf course), most noise associated with demolition and construction activities for this project would likely be below 65 dBA before it reaches users of the golf course. Noise impacts from this project would be temporary during construction. No long-term impacts on the ambient noise environment would be expected from this project.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the Refueler Maintenance Facility. Construction would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction to suppress emissions. All emissions associated with construction would be temporary.

Emissions from Project C13 would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the Refueler Maintenance Facility are summarized below in **Table 4-27**. These emissions represent construction over the duration of the project which is estimated to be from January 2025 through June 2026. New

Table 4-27. Estimated Total Air Emissions Resulting from Project C13

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2025 through Jun. 2026	1.562	0.361	2.464	0.006	0.577	0.057	525.062
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

operational emissions (e.g., space heating) are not included as they are expected to be minimal. Therefore, long-term, negligible, adverse effects on air quality would be expected from this project.

Land Use. The proposed facility would be constructed within the North Ramp District in an area designated for Industrial land use. Operation of the new facility in this area would be compatible with aircraft and operational support functions for facilities near the airfield and flightline. Long-term, minor beneficial impacts would be expected from optimized land use because refueler maintenance operations would be appropriately proximal to the flightline.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply, and sanitary sewer) would be expected from Project C13. Short-term interruptions could be experienced when utilities are connected to new facilities. However, work on utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from an increase in energy consumption. Long-term, minor, beneficial impacts on utilities would be expected from the installation of utility upgrades.

Long-term, moderate, beneficial impacts on liquid fuels infrastructure would be expected from the upgraded and expanded Refueler Maintenance Facility, which would enhance the capacity and service load of the refueler fleet.

Stormwater System. Short-term, negligible, adverse impacts would be expected from Project C13 because of the temporary disturbance of the stormwater systems during construction activities. Long-term, negligible, adverse impacts on the stormwater system would be expected because of an increase of impervious surface area associated with Project C13 site improvements. However, impacts would be minimized through the use of federally required planning, design, construction, and maintenance practices that require project sites greater than 5,000 ft^2 maintain or restore predevelopment site hydrology to the maximum extent technically feasible per Section 438 of the EISA.

Solid Waste. Short-term, minor, adverse impacts would result from increased construction debris associated with Project C13. Contractors would be required to recycle construction debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable construction debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Project C13 is presented in **Table 4-28**.

Table 4-28. Estimated Project C13 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolitions	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
4,250	None	0	9	0

Transportation Network. Short-term, negligible, adverse effect on local roadways (on- or off-installation), access gates (Main or Portales), parking, and pedestrian access would be expected during construction associated with Project C13 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to Project C13 construction zones, and staged to minimize effect on adjacent areas.

No long-term impacts on the airfield, pedestrian traffic, local roadways, or access gates would be expected because of implementation of Project C13. Long-term, negligible, beneficial impacts on installation parking would be expected, as adequate parking designs are included in new construction plans.

Geological Resources. Short-term, negligible, adverse effects would be expected on geological resources as a result of site preparation and construction activities under Project C13. Impacts on topography are considered negligible as the project location is in a previously developed portion of Cannon AFB and would require only minimal grading and excavation.

Short-term, negligible effects on soils would be expected from implementation of Project C13 through soil compaction, disturbance, and erosion during construction activities. Implementation of environmental protection measures (described in **Section 5.2**) would minimize erosion impacts.

Water Resources. No short-term adverse effects on groundwater resources would occur as a result of Project C13. Demolition and construction associated with the Proposed Action (i.e., minor grading, excavation, and foundation preparations for proposed building, road, and utility systems) would create the potential for soil erosion in the project area, but would not be anticipated to encounter the local groundwater table. Additionally, the implementation of stormwater management controls would minimize potential sedimentation. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from

demolition or construction equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges. Long-term, negligible, adverse effects on groundwater resources would occur, because of the increased requirement for water for the project. It is expected that operation of the proposed facility would increase water demand; therefore, there is an increased negligible long-term risk on groundwater resources. No impacts on the 100-year floodplain are anticipated because Project C13 project is located outside the floodplain.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, negligible, indirect adverse effects on vegetation could result from disturbance associated with construction activities. No long-term effects on vegetation would occur because the C13 project area (see **Figure 3-4**) is almost entirely covered in impervious surfaces; therefore, no urban habitat vegetation would be removed under this alternative. The adjacent maintained grassy area and ornamental trees would remain.

Wildlife. Short and long-term, negligible, adverse effects on wildlife would occur during construction because of noise and mortality of small less mobile terrestrial species as a result of collision with construction equipment. Minimal potential urban habitat (approximately 280 ft^2) would be removed under this alternative.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. All of these species would likely be transient if present within the project areas.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. However, there is no habitat present within the project area, and surrounding urban habitat would not be affected under this alternative.

Cultural Resources. No impacts on cultural resources would be expected under Project C13. The proposed construction area is previously disturbed from development and is not near any NRHP-eligible buildings or structures. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed Refueler Maintenance Facility would result in short- and long-term, minor, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the construction or maintenance of the Refueler Maintenance Facility would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result.

The maintenance of R-11 special purpose refueling vehicles currently occurs at the Refueler Maintenance Facility, which is over 50 years old and not capable of supporting the maintenance of additional vehicles. These same vehicle maintenance activities would occur at the new

Refueler Maintenance Facility. It is anticipated that the same types of hazardous materials used and hazardous wastes generated from R-11 maintenance would occur. However, there would be an increase in the number of vehicles maintained at the new Refueler Maintenance Facility leading to an increase in the volume of hazardous materials used and hazardous wastes generated. Therefore, the construction, use, and operation of the new Refueler Maintenance Facility would have short- and long-term adverse impacts on hazardous materials and wastes. To reduce the potential adverse impacts from increased R-11 maintenance activities, all hazardous materials and wastes would be handled, stored, transported, and disposed of in accordance with applicable Cannon AFB policies, USAF regulations, and other federal and state laws. Any POL spills would be managed according to the requirements of the Cannon AFB SPR Plan (CAFB 2017d). The OWS that would be located within the Refueler Maintenance Facility would be operated according to the requirements of the Cannon AFB Oil/Water Separator Management Plan (2016). As such, impacts on hazardous materials and wastes from the new Refueler Maintenance Facility would be less than significant.

Health and Safety. Short-term, minor, adverse impacts on health and safety would occur from the construction of the Refueler Maintenance Facility. Construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction activities would increase during the construction of the new Refueler Maintenance Facility. The construction site is located outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. No long-term impacts on health and safety from construction activities would be expected.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would be expected from Project C13. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. The proposed construction would occur entirely on Cannon AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents. No long-term adverse effects on socioeconomic resources would be expected because Project C13 does not involve any change in personnel, housing, or public services.

4.3.2 Infrastructure Improvement Projects

4.3.2.1 PROJECT I1: RECONSTRUCT MAIN GATE

Noise. The existing Main Gate facilities would be demolished and replaced with new facilities. The new gate configuration would be sited at the current Main Gate location in the Community and North Ramp Districts adjacent to the golf course. Noise impacts from this project during demolition and construction would occur and affect the golf course, but impacts would be temporary and minor.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the reconstruction of the main gate facilities, including demolition of the existing gate facilities. Construction and demolition would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction

equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction and demolition activities to suppress emissions. All emissions associated with construction and demolition activities would be temporary.

Emissions from Project I1 would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the reconstruction of the main gate facilities and demolition of the existing gate facilities are summarized below in **Table 4-29**. These emissions represent construction and demolition activities over the duration of the project, which is estimated to be from January 2020 through November 2022. New operational emissions (e.g., space heating) are not included as they are expected to be minimal and offset by operations that were eliminated because of demolition of similar facilities. Therefore, long-term effects on air quality would be expected to be close to neutral.

Table 4-29. Estimated Total Air Emissions Resulting from Project I1

	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Jan. 2020 through Nov. 2022	7.387	1.255	7.323	0.017	29.845	0.336	1,507.525
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

Land Use. Reconstruction of the Main Gate would not impact land use designations and would be compatible with existing functional uses in the area. Because the existing gate is inadequately configured and lacks the capacity to fully accommodate traffic and visitors, implementing the proposed project would likely have long-term, minor, beneficial impacts from improved land use efficiency on the functional land use at the proposed site.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and long-term, moderate, beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply, and sanitary sewer) from interruptions could be experienced when utilities are disconnected from buildings proposed for demolition and connected to new facilities. However, work on the utilities systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, adverse impacts on utilities would occur from energy consumption. Long-term, minor, beneficial impacts would be expected from implementation of Project I1 because of removal of outdated utilities associated with demolition (Projects D13 and D14) and the installation of utility upgrades.

Stormwater System. Short-term, negligible, adverse impacts would be expected from Project I1 because of the temporary disturbance of the stormwater systems during construction and demolition activities. Long-term, minor, adverse impacts on the stormwater system would be expected because of an increase of impervious surface area associated with Project I1 site improvements, including 5,000 ft^2 of facilities, paved roadways, parking areas, vehicle pull-offs, and inspection queuing lanes located within the 11.3 acre site. Impacts would be partially offset by demolition of existing impervious areas associated with the existing Main Gate facilities (Projects D13 and D14). In addition, impacts would be minimized through the use of federally required design practices that require project sites maintain or restore predevelopment site hydrology (CAFB 2016c).

Solid Waste. Short-term, minor, adverse impacts would result from increased construction and demolition debris associated with Project I1. Contractors would be required to recycle debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with Project I1 is presented in **Table 4-30**.

Table 4-30. Estimated Project I1 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Associated Demolition	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
5,000	D13, D14	928	11	73

Note: Construction project size does not include roadways, parking areas, vehicle pull-off areas, and queuing lanes.

Transportation Network. Short-term, negligible, adverse impacts on local roadways (on- or off-installation) would be expected during construction and demolition associated with Project I1 as personnel and construction vehicles access the installation and the Main Gate and queuing lanes are temporarily reconfigured during construction. However, the associated increase in construction traffic would be temporary; and intermittent road closures would be communicated to installation staff via electronic signs, installation-wide bulletins, and electronic memos.

Long-term, moderate, beneficial impacts on local roadways would be expected because of traffic flow improvements as new paved roads, with roundabouts at several intersections when traffic enters the main gate, would be constructed, and the addition of traffic lanes to accommodate future predicted traffic levels would alleviate traffic backups (CAFB 2016c).

Short-term, minor, adverse impacts on access gates would be expected during construction activities associated with Project I1 as the Main Gate is temporarily reconfigured and personnel and construction vehicles access the installation. However, the Main Gate will still be open during construction, and it is expected that the Portales Gate has adequate policy, procedure, and capacity to temporarily accommodate additional installation personnel traffic and efficiently route commercial/contractor vehicles through the inspection process.

Long-term, moderate, beneficial impacts on the Main Access Gate would be expected from a complete upgrade of the visitor facility and installation gate access. Traffic flow improvements would be expected as new paved roads, with roundabouts at several intersections when traffic

enters the main gate, would be constructed. In addition, improvements in entry control (denial barriers and overwatch tower) would comply with required DoD anti-terrorism/force protection criteria (CAFB 2016c).

Short-term, negligible, adverse impacts on Main Gate visitor and personnel parking would be expected during construction and demolition activities associated with Project I1 as the Main Gate is temporarily reconfigured and personnel and construction vehicles access the installation. However, parking would still be available at the visitor center, and the associated increase in construction parking would be temporary and staged to minimize impacts on adjacent areas.

No impacts on the airfield or pedestrian traffic would be expected because of implementation of Project I1.

Geological Resources. Long-term, minor, adverse effects would be expected on topography as a result of demolition, site preparation, and construction activities under Project I1. Although the project location is in a largely previously disturbed and relatively level area, impacts on topography would occur from regrading within an 11-acre footprint.

Short-term, negligible effects on soils would be expected from implementation of Project I1 through soil compaction, disturbance, and erosion during construction activities. Implementation of environmental protection measures described in **Section 5.2** would minimize erosion impacts.

Water Resources. No short-term adverse effects on groundwater resources would occur as a result of Project I1. This alternative would disturb approximately 11 acres. Demolition and construction would create the potential for soil erosion in the project area, but would not encounter the local groundwater table or recharge points. Implementation of stormwater management controls would minimize potential adverse effects, including erosion and sedimentation. Because this project would disturb 10 or more acres, discharges would be monitored to ensure compliance with effluent limitations as required by USACE. No long-term effects on groundwater resources would occur because personnel and facilities requirements would remain similar and demand for water would remain unchanged.

Long-term, minor, effects on the 100-year floodplain could occur as a result of Project I1. Construction of the Main Gate would result in a minimal increase of impervious surfaces within the 100-year floodplain, as Project I1 would be on the fringe of the floodplain. Short-term sediment and surface runoff around the construction site would be possible; however, the use of BMPs would minimize these effects. Long-term, minor, adverse impacts on the floodplains would occur from the total increase of impervious surfaces within the 100-year floodplain if it cannot be avoided during design.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, minor, adverse effects on vegetation could result from disturbance associated with construction and demolition activities. Long-term, minor, adverse effects on vegetation could occur from conversion of urban habitat vegetation to impervious surfaces (see

Figure 3-4). Areas currently containing vegetation within the project area would remain to the maximum extent feasible and the surrounding area contains available urban habitat for use by wildlife. The proposed Main Gate facilities would be constructed within a maintained grassy area with dispersed ornamental trees. Demolition of the existing Visitor Control Center and Traffic Check House (Projects D13 and D14) would also occur under this alternative and would be replaced by the proposed facilities. Areas within the project footprint that would not be covered by impervious surfaces would be re-vegetated with approved species following the completion of ground-disturbing activities.

Wildlife. Short- and long-term, negligible to minor, direct adverse effects on wildlife would occur during construction and demolition. Long-term, negligible, direct adverse effects could result from the conversion of urban habitat to impervious surfaces. These effects would be negligible because the surrounding urban habitat and the other habitat areas on Cannon AFB would provide suitable habitat for temporarily and permanently displaced species. No potential habitat would be removed under Projects D13 and D14.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. All of these species would likely be transient if present within the project areas. The presence of burrowing owl, Cassin's sparrow, lark bunting, and long-billed curlew nests as well as black-tailed prairie dog and swift fox burrows would be unlikely because of the degree of vegetation maintenance that occurs within the urban habitat. The nearby golf course ponds would not be affected under the Proposed Action. Additionally, all necessary surveys would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. Long-term, negligible, direct adverse effects would be expected on migratory birds that could nest in landscape vegetation. However, there are trees and shrubs present throughout the urban habitat in the housing area and golf course. Migratory birds would be expected to relocate to these and other adjacent habitats. All necessary surveys, including surveys of buildings to be demolished, would be conducted prior to construction or demolition, and all applicable BMPs would be followed.

Cultural Resources. No impacts on cultural resources would be expected under Project I1. The construction area is not near any NRHP-eligible buildings or structures and has been disturbed from previous development. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed Reconstructed Main Gate would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the construction of the Reconstructed Main Gate would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result.

Demolition of the existing Main Gate would have short-term adverse impacts on hazardous materials and waste, primarily through the potential for disturbing special hazards, such as ACM and LBP. The existing Main Gate would be surveyed for these special hazards prior to the start of demolition activities. All ACM and LBP discovered during surveys would be handled in accordance with USAF policy. With appropriate surveys, sampling, analysis, and abatement, the potential impacts on hazardous wastes from the demolition of the existing Main Gate would be less than significant.

Health and Safety. During construction, construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction activities would increase during the construction of the Main Gate. The construction site is located outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. Therefore, there would be short-term, minor adverse impacts on health and safety from construction.

The demolition of the existing Main Gate would adhere to all OSHA and USAF safety standards and demolition contractors would maintain safety procedures. The potential does exist for demolition contractors to be exposed to ACM and LBP. However, prior to any demolition surveys and testing for these special hazards and subsequent remediation if necessary would ensure that demolition contractors are not exposed. Therefore, there would be short-term, minor adverse impacts on health and safety from demolition.

The new Main Gate would mitigate safety risks associated with the existing Main Gate and would meet current AT/FP standards. As such, the operation of a new Main Gate would have long-term minor beneficial impacts on health and safety.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would be expected from Alternative I1-1. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. There could also be short-term, minor, adverse effects on socioeconomic resources during construction as traffic queuing could increase during construction. This could impact travel times for personnel.

The existing Main Gate facilities would be demolished and replaced with new facilities. The project would improve traffic flow through the main gate and provide better visitor facilities which would provide a long-term improvement to quality of life for personnel and visitors. The proposed facility would also allow for increased safety, as it would have better electronic infrastructure in support search capabilities. The proposed gate reconfiguration would occur entirely on Cannon AFB in a non-residential portion of the installation, and would have little potential to effect on- or off-installation residents adversely during operation. Therefore, long-term, minor beneficial effects on socioeconomic resources would be expected.

4.3.2.2 PROJECT I2: WATER TOWER REPLACEMENT

Noise. Three water towers used for potable water on Cannon AFB would be replaced by one 600,000-gallon capacity, 155-foot water tower. The proposed Water Tower Replacement would

occur at the site of the existing water towers along Eagle Claw Boulevard between Urgent Fury Boulevard and Just Cause Way on the border of the Community and Residential Districts. The nearest residential area is 100 feet north of the proposed project location. Therefore, noise impacts would occur during demolition and construction, but impacts would be temporary and minor. During operation, long-term, minor, beneficial impacts on the noise environment would be expected because this project could reduce overall noise levels from the removal of generators and booster pumps that would no longer be required.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the new water tower and demolition of the existing water towers and associated booster pump engines. Demolition and construction would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road construction equipment, paving equipment, haul trucks transporting building materials to the work site and debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction and demolition to suppress emissions. All emissions associated with construction and demolition would be temporary.

Emissions from Project I2 would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the new water tower and demolition of the existing water towers and associated booster pump engines are summarized below in **Table 4-31**. These emissions represent construction and demolition over the duration of the project, which is estimated to be from January 2019 through December 2020. In addition, the operational emissions decrease from the removal of water system booster pump engines is provided in this table. Because of this emissions decrease, long-term, minor, beneficial air quality impacts would be expected from this project.

Table 4-31. Estimated Total Air Emissions Resulting from Project I2

Construction Emissions	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
Construction - Jan. 2019 through Dec. 2020	3.935	0.973	3.893	0.009	2.218	0.177	790.632
Operational Emissions	**NO_x (tpy)**	**VOC (tpy)**	**CO (tpy)**	**SO_2 (tpy)**	**PM_{10} (tpy)**	**$PM_{2.5}$ (tpy)**	**CO_2e (mtpy)**
Remove Fire Water Booster Pumps – Jun. 2020 and Forward	-0.115	-0.028	-0.077	-0.024	-0.025	-0.025	-12.063
Remove Potable Water Booster Pumps – Jun. 2020 and Forward	-4.198	-1.018	-2.803	-0.858	-0.916	-0.916	-440.349
Operational Emissions Total	-4.313	-1.046	-2.880	-0.882	-0.941	-0.941	-452.412
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Note: Although construction project total emissions estimates are for more than one year, they would still be well below the annual significance criteria. The ACAM model does not allow for reporting this sublevel of emissions on an annual basis.

Land Use. Construction of the proposed water tower in the Industrial land use area within the Community District would be compatible with the installation's land use efficiency and operational support goals. No changes to land use designation would be required as a result of operation of the proposed project. Long-term, negligible beneficial impacts on land use could be expected from reduced noise generation because the new water tower would be able to maintain the required flow and pressure for fire protection and supply water to the installation without the need for booster pumps (and associated electrical generators) to individual buildings.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and long-term, moderate beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities: Water Supply. Short-term, negligible, adverse and long-term, moderate, beneficial impacts on the water supply system would be expected because of Project I2. Short-term interruptions could be experienced when the existing water towers are disconnected from and connected to the water supply system during demolition and construction activities. However, work on the water supply system would be temporary and coordinated with area users prior to the start of work activities.

Long-term, moderate, beneficial impacts on the water supply infrastructure would be expected from replacement of two existing 150,000-gallon and one 250,000-gallon water tanks with one 600,000-gallon water tank, which would increase water storage capacity, bring the water system into compliance for fire suppression requirements, and improve water flow and pressure across the installation.

Utilities: Liquid Fuels. Long-term, negligible, beneficial impacts would be expected on liquid fuels infrastructure because the need for liquid fuel storage associated with booster pumps for fire protection to individual buildings and generators would no longer be required (CAFB 2016c).

Utilities: Stormwater System. No adverse impacts on the stormwater system would be expected because the site improvements associated with Project I2 would not change or impact existing site stormwater systems.

Other Utilities. No impacts on the sanitary sewer, communications, electrical, or natural gas infrastructure would be expected because of implementation of Project I2.

Solid Waste. Short-term, minor, adverse impacts would result from increased construction and demolition debris associated with Project I2. Solid waste generated from the proposed construction and demolition would consist of building materials such as solid pieces of concrete, metals (e.g., conduit, piping, and wiring), and lumber. Contractors would be required to recycle debris to the maximum extent practicable, thereby diverting it from landfills. The contractor would dispose of non-recyclable debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity.

Project I2 would result in a short-term, minor, and long-term negligible adverse impacts as a result of increased solid waste generation. Solid waste generation associated with Project I2 is presented in **Table 4-32**.

Table 4-32. Estimated Project I2 Generation of Construction and Demolition Debris

Construction Project Size (ft^2)	Demolition Project Size (ft^2)	Construction Debris (tons)	Demolition Debris (tons)
23,520	32,500	52	2,568

Source: TNEMEC 2009, USEPA 2009

Transportation Network. Short-term, negligible, adverse impacts on local roadways, access gates (Main or Portales), and parking would be expected during construction and demolition associated with Project I2 as personnel and construction vehicles access the installation. The associated increase in construction traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process. An increase in construction parking requirements would be temporary, limited to the Project I2 construction zones, and staged to minimize effect on adjacent areas. No impacts would be expected on the airfield or pedestrian traffic from implementation of Project I2.

Geological Resources. Short-term, negligible, adverse effects would be expected on topography as a result of site preparation and construction activities under Project I2. The project location is in a previously developed portion of Cannon AFB. Project I2 would require grading and excavation, with negligible change in elevations.

Short-term, negligible effects on soils would be expected from implementation of Project I2 through soil compaction, disturbance, and erosion during construction. Implementation of environmental protection measures described in **Section 5.2** would minimize erosion impacts.

Water Resources. No short-term effects on groundwater resources would occur as a result of Project I2. Demolition and construction would create the potential for soil erosion in the project area, but would not encounter the local groundwater table or recharge points. Long-term, negligible, adverse effects on groundwater resources would occur from operations that would withdraw more groundwater to meet the increased capacity of the water tank and demand for potable water. No impacts on the 100-year floodplain are anticipated, as Project I2 is located outside the floodplain.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Vegetation. Short term, minor, indirect adverse effects on vegetation could result from disturbance associated with construction and demolition. Long-term, negligible, adverse effects on vegetation could occur from conversion of urban habitat vegetation to impervious surfaces. Areas containing vegetation within the surrounding urban habitat would not be affected under the Proposed Action (see **Figure 3-4**) and would be available as habitat for wildlife currently

using the site for the proposed project. Vegetation within the project area would remain in place to the maximum extent feasible. V egetation within the project area is primarily composed of maintained grasses and dispersed ornamental trees. Areas within the project footprint that would not be covered by impervious surfaces would be re-vegetated with approved species following the completion of ground-disturbing activities.

Wildlife. Short- and long-term, negligible to minor, direct adverse effects on wildlife would occur during construction and demolition. Long-term, negligible, direct adverse effects could result from the conversion of urban habitat to impervious surfaces. These effects would be negligible because the surrounding urban habitat and the other habitat areas on Cannon AFB would provide suitable habitat for temporarily and permanently displaced species (see **Figure 3-4**).

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project area. All of these species would likely be transient if present within the project areas. All necessary surveys would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. Long-term, negligible, adverse effects would be expected on migratory birds that could nest in landscape vegetation. However, there are trees and shrubs present throughout the urban habitat in the housing area and golf course. Migratory birds would be expected to relocate to these and other adjacent habitats. All necessary surveys, including surveys of the existing water towers to be demolished, would be conducted prior to construction or demolition and all applicable BMPs would be followed.

Cultural Resources. No impacts on cultural resources would be expected under Project I2. The project would not impact any NRHP-eligible buildings. Three water towers not eligible for NRHP listing would be demolished: Buildings 1895, 1896, and 1897, constructed 1966, 1952, and 1961, respectively. The proposed construction area for Project I2 was disturbed during construction of the existing water towers and there are no known archaeological sites in the area. If an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. Construction, use, and maintenance of the proposed Water Tower would result in short- and long-term, negligible, adverse impacts on hazardous materials and wastes. Any hazardous materials proposed for use during the construction of the proposed Water Tower would be authorized and approved through the Cannon AFB Hazardous Waste Program Manager (27 SOCES/CEIE) and hazardous materials management team. Implementation of processes established for proper hazardous materials and wastes management during construction, use, and maintenance would reduce any impact that would result.

Health and Safety. Construction and operation of a new water tower, and demolition of existing water towers would not have long-term adverse impacts on health and safety. Construction workers would be responsible for complying with standard operating procedures and health and safety regulations. The short-term safety risks associated with construction

would increase during the construction of the new replacement Water Tower. The construction site is located outside the boundaries of ERP sites so the likelihood of construction contractors encountering contaminated soils is low. Therefore, there would be short-term, minor adverse impacts on health and safety from construction.

The demolition of the existing water towers would adhere to all OSHA and USAF safety standards and demolition contractors would maintain safety procedures. Therefore, there would be short-term, minor, adverse impacts on health and safety from demolition because of the potential for safety risks.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would be expected from Project I2. It is assumed that equipment and supplies necessary to complete the construction would be obtained primarily locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County.

Because the proposed tower would provide better fire suppression support without the use of booster pumps or generators, this public service would be improved, which would provide long-term, minor, beneficial impacts on socioeconomic resources.

4.3.3 Demolition Projects

Noise. There are 39 facilities throughout Cannon AFB that no longer meet mission requirements, are no longer in use, or do not meet AT/FP criteria. A detailed list of these proposed demolition projects are presented in **Table 2-1**, and the project locations are shown in **Figure 2-14**. Some of these are associated with Construction Projects as was noted in the table and are not discussed below. Short-term, minor, adverse noise impacts would be expected during demolition of these facilities.

Air Quality. Demolition projects not discussed under Construction Projects (see **Section 4.3.1**) include Projects D1 to D4, D6 to D9, D11, D12, D24, and D27. Short-term, minor, adverse effects on air quality would be expected from these demolition projects. Demolition would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, including the operation of non-road demolition equipment, haul trucks transporting debris from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during demolition activities to suppress emissions. All emissions associated with demolition would be temporary.

Emissions from the identified demolition projects would not contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from these demolition projects are summarized below in **Table 4-33** by the year when they are expected to occur. When considering just these demolition projects, long-term, minor, beneficial effects on air quality would be expected from the removal of space heating emission sources associated with these demolished buildings.

Table 4-33. Estimated Total Air Emissions Resulting from Projects D1 through D4, D6, D8, D9, D11, D12, D24, and D27

FY and Projects	NO_x tons	VOC tons	CO tons	SO_2 tons	PM_{10} tons	$PM_{2.5}$ tons	CO_2e metric tons
FY 2018 (D1 through D4, D6, D8, D9, D11, D12)	0.839	0.131	0.823	<0.001	0.103	0.048	128.612
FY 2019 (D24)	0.381	0.058	0.404	<0.001	0.090	0.020	67.118
FY 2020 (D27)	0.341	0.053	0.395	<0.001	0.051	0.017	64.669
Significance Criteria (Annual)	**250**	**250**	**250**	**250**	**250**	**250**	**75,000**

Land Use. The facilities to be demolished have reached the end of their useful life on the installation. Demolition of these facilities would result in long-term, minor to moderate beneficial impacts on land use efficiency and on functional land use because it would remove potentially incompatible land uses, relocate facilities from existing use-constraints or high maintenance requirements, reduce existence of energy inefficient facilities in the installation's inventory, and create developable land area and infrastructure that would enable future development. The proposed demolition projects would not result in changes to land use designations.

Infrastructure and Transportation. Short- and long-term, negligible to minor, adverse and beneficial impacts would be expected on utilities, solid waste, and the transportation network as described below.

Utilities. Short-term, negligible, adverse impacts on utilities (communications, electrical, natural gas, water supply, and sanitary sewer) would be expected because of the proposed demolition projects. Short-term interruptions could be experienced when utilities are disconnected from buildings proposed for demolition. However, work on utilities would be temporary and coordinated with area users prior to the start of work activities. Long-term, minor, beneficial impacts on utilities would be expected because of removal of outdated utilities.

Long-term, negligible, beneficial impacts on liquid fuels would be realized through removal of fuel tanks currently in place to support emergency backup generators and associated infrastructure for facilities slated for demolition.

Stormwater. Short-term, negligible, adverse and beneficial impacts on the stormwater system would occur as a result of demolition associated with the proposed demolition projects. Adverse impacts would occur from the increased potential for temporary wind erosion and sedimentation in runoff as bare ground is temporarily exposed during demolition activities. Bare areas would be re-vegetated as soon as practicable. Demolitions would beneficially result in a decrease of approximately 174,500 ft^2 of impervious area.

Solid Waste. Short-term, minor, adverse impacts would result from increased demolition debris production associated with the proposed demolition projects. Contractors would be required to recycle demolition debris to the maximum extent practicable, thereby diverting it from landfills.

The contractor would dispose of non-recyclable demolition debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity. Solid waste generation associated with the proposed demolition projects is presented in **Table 4-34**.

Table 4-34. Estimated Generation of Demolition Debris

Associated Demolitions	Demolition Project Size (ft^2)	Demolition Waste (tons)
D1-D39	414,448	32,741

Transportation Network: Airfield. Short-term, negligible, adverse impact on the airfield would be expected during demolition associated with the proposed demolition projects. It is expected that demolition would be phased to avoid active missions and that the alternate runway, taxiway, and parking aprons would be available for use during active demolition, as needed, during demolition associated with Project C1 on the airfield, for example. Access to demolition zones would be established in a manner with the least effect on the active airfield.

Transportation Network: Roadways, Access Gates and Parking. Short-term, negligible, adverse impacts on local roadways (on- or off-installation), access gates, and parking would be expected during demolition associated with the proposed demolition projects as personnel and construction vehicles access the installation. However, the associated increase in demolition traffic would be temporary, and intermittent road closures would be communicated to installation staff via electronic signs, installation-wide bulletins, and electronic memos. It is expected that the Portales Gate has adequate policy, procedure, and capacity to efficiently route commercial/contractor vehicles through the inspection process, and increase in demolition parking would be temporary and staged to minimize effect on adjacent areas. No long-term impacts on pedestrian traffic, local roadways, access gates, or parking would be expected.

Geological Resources. Long-term, negligible, adverse effects would be expected on topography as a result of demolition, debris removal, recontouring and restoration. The topography of Cannon AFB varies little and only minor grading after demolition activities would be anticipated to occur. Impacts because of wind erosion during demolition could affect the flightline and air traffic, requiring potential soil stabilization during high wind events and to keep dust and dirt off of the roadways during debris hauling. Impacts limited to demolition would result from denuded earth and debris transport events, over unimproved roadways.

Short-term, minor, adverse effects on soils would be expected from demolition, because of compaction, disturbance, and erosion. Implementation of environmental protection measures described in **Section 5.2** would minimize erosion impacts. Environmental protection measures to prevent erosion could include, installing silt fencing and sediment traps, applying water to disturbed soil to prevent wind erosion, and re-vegetating disturbed areas as soon as possible after demolitions, as appropriate.

Demolition would require the use of fuels, oils, lubricants, and chemicals. In the event of a petroleum or chemical spill, the installation's SPR Plan should be followed to contain and clean up a spill quickly. Implementation of environmental protection measures identified in the SPR

Plan would minimize the potential impacts on soils. No significant adverse impacts on soils or prime farmlands would be anticipated as a result of demolition activities.

During demolition activities, no geologic hazards would be created or exacerbated by the action. No significant adverse impacts on geologic hazards would be anticipated as a result of the facility demolition projects. No long-term effects on topography, geology, geologic hazards or soils would be expected as a result of demolition projects.

Water Resources. Effects on groundwater, surface water, floodplains, and wetlands range from no impacts to short- and long-term, minor, adverse and beneficial impacts as described below.

Groundwater. No adverse effects on groundwater resources would occur as a result of demolition associated with the proposed demolition projects. Although demolition would create the potential for soil erosion in the project area, sediment loads would settle out on the surface and is not anticipated to encounter the local groundwater table. Additionally, the implementation of stormwater management controls would minimize potential sedimentation concerns. Based on existing soil conditions, any incidental contaminant discharges (e.g., fuel, lubricants, coolants) from demolition equipment would not be anticipated to reach the groundwater table given prompt response to potential discharges.

Surface water. No adverse effects on surface water would occur as a result of demolition. Demolition would result in temporary soil disturbance; however, as there are no naturally occurring surface water bodies, major drainage ways, perennial streams or jurisdictional waters on the installation, no adverse effects because of sedimentation would be anticipated.

Floodplains. Short-term, negligible, effects on the 100-year floodplain could occur as a result of demolitions associated with the proposed demolition projects. Although the use of BMPs during demolition would be required, short-term sediment and surface runoff around the demolitions site could still occur. Long-term, minor, beneficial effects on the floodplain would occur from the demolition of projects within the floodplain, which include D36, D37, and D39.

Wetlands. No impacts on wetlands would be anticipated from implementation of the proposed demolition projects, as no demolitions would take place in or directly adjacent to wetland areas.

Biological Resources. Short- and long-term, negligible to minor, adverse impacts would be expected on vegetation, wildlife, protected species, and migratory birds as described below.

Demolition projects not discussed under Construction Projects (see **Section 4.3.1**) include Projects D1 to D4, D6 to D9, D11, D12, D24, and D27. These demolition projects would occur within the urban habitat area (see **Figure 3-5**). Although D11 and D12 are within the restricted lands area and outside of the urban habitat, the conditions at these project areas are similar to the urban habitat.

Vegetation. Short term, negligible, indirect adverse effects on vegetation could result from disturbance associated with demolition activities. Long-term, beneficial effects on vegetation would occur because these demolition project areas would not require removal of existing

vegetation, vegetation surrounding the project areas would remain, and some demolition sites would revert to their natural state.

Wildlife. Short and long-term, negligible to minor, adverse and beneficial effects on wildlife would occur during demolition because of noise and mortality of small less mobile terrestrial species as a result of collision with equipment. No potential urban habitat would be removed. Some demolition sites would revert to their natural state and provide some habitat for wildlife.

Protected Species. Effects on USFWS species of concern that are likely to occur on Cannon AFB could be similar to those described for wildlife if they are present within the project areas. All of these species would likely be transient if present within the project areas.

Migratory Birds. Effects on migratory birds could be similar to those described for wildlife if these species are present within the project area. However, no habitat occurs within the demolition project areas, and surrounding urban habitat would not be affected.

Cultural Resources. Long-term, negligible, adverse impacts on cultural resources would be expected under the proposed demolition projects. As discussed under Project C9, demolition of Building 1 (Wing HQ) would cause a perceptible change in the visual environment at the adjacent NRHP-eligible Building 2 (flagpole), resulting in a long-term, negligible, indirect, adverse impact. No direct impacts on cultural resources would occur. Of the 39 buildings proposed for demolition, nine were constructed after the Cold War (post-1991) and are not eligible for NRHP listing (see **Table 2-1**). The remaining 30 buildings were evaluated as not eligible for NRHP listing with SHPO concurrence via the installation's ICRMP received in 2009.

Demolition would not have potential to affect archaeological resources. Demolition activities would be contained within the limits of the existing disturbance area at each building site and archaeological resources are highly unlikely to be present. However, if an unanticipated discovery of archaeological materials is made during construction, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Hazardous Materials and Wastes. The demolition of facilities would have short-term, minor adverse impacts on hazardous materials and waste, primarily through the potential for disturbing special hazards, such as ACM, LBP, and PCBs. All buildings scheduled for demolition would be surveyed for these special hazards prior to the start of activities. For those buildings that are positive for hazards, the removal of friable ACM would be performed by a licensed asbestos abatement contractor, and all LBP discovered during surveys would be handled in accordance with USAF policy. Buildings with the potential to include PCB-containing materials would be appropriate surveyed and recommendations for PCB removal made where PCB is identified. Any PCB-containing materials would be removed in accordance with federal, state, local, and USAF regulations. With appropriate surveys, sampling, analysis, and abatement, the potential impacts from hazardous wastes and wastes requiring special handling during the demolition of facilities would be less than significant.

Long-term, minor, beneficial impacts would be associated with the demolition facilities because of the elimination of older buildings, resulting in a reduced potential for exposure to, and maintenance of ACM, LBP, and PCBs. Further, the replacement of older aviation and vehicle

maintenance facilities with modern well-equipped facilities reduces the likelihood for the release of hazardous materials, providing a long-term minor beneficial impact.

Health and Safety. Demolition of the proposed demolition projects would create an increased risk of accidents to demolition workers, but this level of risk would be managed by adherence to established federal, state, and local safety regulations as well as USAF requirements. Demolition areas would be delineated with fencing and remain well marked during all active demolition activities. Demolition equipment and associated trucks transporting material to and from demolition sites would be directed to roads and streets that have a lesser volume of traffic. Workers would be required to wear the appropriate PPE for demolition activities such as ear protection, steel-toed boots, hard hats, gloves, and safety vests.

The potential does exist for demolition contractors to be exposed to ACM, LBP, and PCBs. However, prior to any demolition, surveys and testing for these special hazards and subsequent remediation if necessary would ensure that demolition contractors are not exposed to these special hazards. Therefore, there would be short-term, minor adverse impacts on health and safety from demolition.

Socioeconomics. Short-term, minor, beneficial effects on socioeconomic resources would be expected from the demolition of these buildings. It is assumed that equipment and supplies necessary to complete the demolition would be obtained locally, and local contractors would be used. The demand for workers as part of the demolition would be minor and would not outstrip the local supply of workers, as there are more than 1,400 construction workers in Curry County. Proposed activities would occur entirely on Cannon AFB and would have little potential to affect off-installation residents adversely. Therefore, no significant short-term impacts on socioeconomics would be anticipated.

No long-term effects on socioeconomic resources would be expected to result from the proposed demolition of these buildings because it does not involve any change in personnel or housing. Because the facilities being demolished are out of date, not up to code, and require increased maintenance, they are currently impacting the availability of public services on the instillation. Once they are demolished, this would improve public service availability on the installation.

4.4 Environmental Consequences of the No Action Alternative

Noise. Under the No Action Alternative, noise levels generally would remain the same as the baseline conditions described in **Section 3.1.1**. Therefore, no effects from noise would be expected.

Air Quality. Under the No Action Alternative, air quality would generally remain the same as the baseline conditions described in **Section 3.2.1**. Therefore, no effects on air quality would be expected.

Land Use. Under the No Action Alternative, the proposed projects would not be constructed. Existing facilities would remain in use and existing land use conditions (i.e., reduced land use efficiency) on the installation would remain unchanged.

Infrastructure and Transportation. Under the No Action Alternative, the proposed construction, infrastructure and demolition projects would not be implemented. As a result, the No Action Alternative would not support the purpose of and need for the installation development as identified under the Proposed Action. There would be no facility demolition or construction that would affect the existing utilities. Baseline conditions at Cannon AFB would remain the same; therefore, continued long-term minor impacts on utilities would occur from a water supply system that would not be upgraded with a new water tower and would continue to rely on booster pumps, which produce noise and emissions. The Main Gate would continue to operate inefficiently, particularly during the morning rush hour, which would also result in continued long-term minor impacts on the transportation network.

Geological Resources. Under the No Action Alternative, the proposed construction, infrastructure and demolition projects would not be implemented. As a result, the No Action Alternative would not support the purpose of and need for installation development as identified in the Proposed Action. There would be no facility demolition or construction, which would result under no effects on the geologic resources analyzed in this section. Baseline conditions at Cannon AFB would remain the same and there would be no impact on topography, geology, soils, or geologic hazards.

Water Resources. Under the No Action Alternative, the proposed construction, infrastructure and demolition projects would not be implemented. As a result, the No Action Alternative would not support the purpose of and need for installation development as identified under the Proposed Action. There would be no facility demolition or construction which would result in no effects on the resource areas analyzed in this section. Baseline conditions at Cannon AFB would remain the same. Therefore, there would be no impact on groundwater, surface water, floodplains or wetlands.

Biological Resources. Under the No Action Alternative, conditions would remain as described in **Section 3.7.2** and no effects on biological resources would be expected. Existing impervious surfaces associated with proposed demolition projects would not be converted into disturbed grassland or urban habitats through re-vegetation following demolition.

Cultural Resources. Under the No Action Alternative, proposed construction, infrastructure, and demolition projects would not occur. There would be no change in the visual environment on the installation and no impact on NRHP-eligible Building 2. Ground disturbance associated with construction projects would not occur under the No Action Alternative and there would be no potential for the inadvertent discovery of archaeological resources.

Hazardous Materials and Waste. No new facilities would be constructed, used or maintained as a result from the No Action Alternative, so no additional impacts on hazardous materials or wastes would occur.

Health and Safety. No new facilities would be constructed, used, maintained, or demolished as a result from the No Action Alternative, so no additional impacts on safety from construction or demolition would occur. However, safety risks for USAF and civilian contractor personnel associated with using older facilities for mission-support activities would continue. This includes the continued use of buildings potentially containing ACM and LBP. Mission-support functions

would also continue to occur in facilities that were not designed specifically for their current use and lack needed safety features. Further, facilities that are located at a substantial distance from where mission-related operations are needed would continue to be used, adding increasing safety risks from increased travel distances.

Socioeconomics. Under the No Action Alternative, the proposed construction, infrastructure and demolition projects would not be implemented. Materials required for these projects would not be purchased from the surrounding community and contractors would not be hired. Therefore, short-term, minor, adverse impacts on socioeconomics would be expected under the No Action Alternative.

4.5 Summary of Environmental Impacts

Table 4-35 summarizes the impact characterizations from the Proposed Action and No Action Alternative. Environmental impacts for other alternatives for projects would generally be similar to the project's preferred alternative.

Table 4-35. Summary of Impacts from the Proposed Action and No Action Alternative

Alternatives[1]	Impacts by Resource Area										
	Noise	Air Quality	Land Use	Infrastructure and Transportation	Geological Resources	Water Resources	Biological Resources	Cultural Resources	Hazardous Materials and Wastes	Health and Safety	Socio-economics
C1-1, D15–D22	- ◊ ♦	- ◊ ●	- ◊ ♦ + ♦	- ◊ ♦ + ◊ ♦	- □ ●	- ♦	- ◊ ♦	/	- ○ ●	- □ ■	+ ◊
C1-2, D15–D22	- ◊ ♦	- ◊ ●	- ◊ ♦ + ♦	- ◊ ♦ + ◊ ♦	- □ ●	- ♦	- ◊ ♦	/	- ○ ●	- □ ■	+ ◊
C2-1, D26	- ○	- ◊ ●	/	- ◊ ♦ + ◊ ♦	- ○ ●	- ●	- ◊ ♦	/	- ○ ●	- ◊ ♦	+ ◊ ♦
C3-1	- ○	- ◊ ♦	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ♦	- ◊ ♦	/	- ○ ●	- ◊ + ■	+ ◊ ♦
C4-1	- ○	- ◊ ●	- ◊ ♦ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ●	- ◊ ♦	/	- ○ ●	- ◊	+ ◊ ♦
C5-1, D-10	- ○	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ♦	- ◊ ♦	/	- ○ ●	- ◊	+ ◊
C6-1, D23	- ○	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ♦	- ◊ ♦	/	- ○ ●	- ◊	+ ◊
C7-1, D-5	- ○ + ♦	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ●	- ◊ ♦	/	- ○ ●	- ◊	+ ◊ ♦
C8-1, D25, D30–D35	- ○ ●	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ♦	- ◊ ♦	/	- ○ ●.	- ◊	+ ◊
C8-2, D25, D30–D35	- ○ ●	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ●	- ◊ ♦	/	- ○ ●	- ◊	+ ◊
C9-1, D28, D29	- ○	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ●	- ◊ ♦	- ●	- ○ ●	- ◊	+ ◊ ♦
C9-2, D28, D29	- ○	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ●	- ◊ ♦	- ●	- ○ ●	- ◊	+ ◊ ♦

Alternatives[1]	Impacts by Resource Area										
	Noise	Air Quality	Land Use	Infrastructure and Transportation	Geological Resources	Water Resources	Biological Resources	Cultural Resources	Hazardous Materials and Wastes	Health and Safety	Socio-economics
C10-1, D36–D39	- ○	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ♦	- ◊ ♦	/	- ○ ●	- ◊	+ ◊
C10-2, D-36–D39	- ○	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ●	- ◊ ♦	/	- ○ ●	- ◊	+ ◊
C11-1, D-10	- ○	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○	- ●	- ◊ ♦	/	- ○ ●	- ◊	+ ◊
C11-2, D-10	- ○	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○	- ●	- ◊ ♦	/	- ○ ●	- ◊	+ ◊
C12-1	- ○	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ●	- ◊ ♦	/.	- ○ ●	- ◊	+ ◊
C13-1	- ○	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ◊ ♦	- ○ ●	- ●.	- ◊ ♦	/	- ○ ●	- ◊	+ ◊
I1-1, D-13, D-14	- ◊	- ◊ ●	- ◊ + ♦	- ◊ ♦ + ■	- ○ ♦	- ♦	- ◊ ♦	/	- ○ ●	- ◊ + ♦	- ◊ + ◊ ♦
I2-1	- ◊ + ♦	- ◊ + ♦	- ◊ + ●	- ◊ ♦ + ■	- ○ ●	- ●.	- ◊ ♦	/	- ○ ●	- ◊	+ ◊ ♦
D1–D4, D6–D9, D11–D12, D24, D27	- ◊	- ◊ + ♦.	- ◊ + ■	- ◊ ♦ + ◊ ♦	- ◊ ●	- ◊ ♦ + ◊ ♦	- ◊ ♦	- ●	- ◊	- ◊	+ ◊
No Action Alternative	/	/	/	- ♦	/	/	/	/	/	/	- ◊

[1] Impact symbols: (-) – Adverse impacts; (+) – Beneficial impacts; (/) – No impacts; ○ – Short-term, negligible impacts; ● – Long-term, negligible impacts; ◊ – Short-term, minor impacts; ♦ – Long-term, minor impacts; □ – Short-term, moderate impacts; ■ – Long-term, moderate impacts.

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

5.1 Cumulative Effects

CEQ regulations stipulate that the cumulative effects analysis in a NEPA document should consider the potential environmental consequences resulting from "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR § 1508.7).

Actions that have a potential to interact with the Proposed Action at Cannon AFB are included in this cumulative effects analysis. This approach enables decision makers to have the most current information available so that they can evaluate the range of environmental consequences that would result from the proposed construction and infrastructure projects.

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

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

For the alternatives under consideration to have a cumulatively significant impact on an environmental resource, two conditions must be met. First, the combined impacts of all identified past, present, and reasonably foreseeable projects, activities, and processes on a resource, including the impacts of the proposed action, must be significant. Second, the proposed action must make a substantial contribution to that significant cumulative impact. Proposed actions of limited scope do not typically require as comprehensive an assessment of cumulative impacts as proposed actions that have significant environmental impacts over a large area (CEQ 2005).

In the sections below, evaluation of the cumulative significance is based on the context, intensity, and timing of the Proposed Action, as discussed in **Section 4**, when combined with

potential impacts from past, present, and reasonably foreseeable actions. A summary of the potential contribution to cumulative impacts from the Proposed Action and identified cumulative projects is provided.

5.1.1 Projects Identified with the Potential for Cumulative Effects

The scope of the cumulative effects analysis involves both timeframe and geographic extent in which effects could be expected to occur, and a description of what resources could be cumulatively affected. Some combination of the projects associated with the Proposed Action would be constructed over a 10-year timeframe (i.e., between FYs 2018 and 2028). The information available for other identified cumulative projects indicates that they would be constructed within the next 5 years (i.e., FYs 2018 through 2023). Therefore, for the impacts analysis considering the Proposed Action along with identified cumulative projects, the temporal span of the Proposed Action is 5 years (i.e., 2018 to 2023) along with consideration of cumulative impacts of multiple projects from the Proposed Action being constructed concurrently during the subsequent years. For most resources, the spatial area for consideration of cumulative effects is generally the Cannon AFB main base, although a larger area is considered for some resources such as air quality and noise. An effort was undertaken to identify projects at Cannon AFB and in the areas surrounding the installation for evaluation in the context of the cumulative effects analysis. Only those projects that could potentially result in greater than negligible cumulative impacts when combined with the Proposed Action have been identified.

5.1.1.1 PAST ACTIONS AT CANNON AFB

For the purposes of this analysis, past project activities are defined as actions that occurred on the installation earlier than the 5-year timeframe previous to the Proposed Action (i.e., occurred earlier than FY 2013) that have shaped the current environmental conditions of the installation project areas. For many resource areas, such as biological resources, infrastructure, and hazardous materials and waste, the effects of past actions are now part of the existing environment and are incorporated in the descriptions of the affected environment in **Section 3**. Therefore, past actions will not be considered further for cumulative impacts analysis. A short list of major past actions follows:

- **Base Realignment and Closure** (2005) – The Secretary of Defense designated the AFSOC mission to Cannon AFB under the recommendations of the 2005 Base Realignment and Closure Commission (DoD 2005).
- **New Mexico Training Range Initiative (NMTRI)** (2006–2008) – This project addressed designation of AFSOC as the new mission for Cannon AFB and Melrose Air Force Range (USAF 2006). The project involved an aircraft and mission change at the installation with new aircraft and additional pilots, and a requirement to expand the existing airspace to accommodate supersonic flight and modified releases of defensive countermeasures (i.e., chaff and flares). The anticipated impacts from the NMTRI were analyzed in an EIS and the Record of Decision was signed in 2006.
- **AFSOC Beddown at Cannon AFB** (2007–2014) – The project addressed the beddown of 108 AFSOC aircraft to Cannon AFB, with a provision that between 25 and 33 percent of the aircraft could be deployed at any given time (USAF 2007). The 27th Fighter

Wing's 60 F-16 jets were replaced by AFSOC turboprop aircraft (C-130s with varying missions, CV-22s, Predator Unmanned Aerial Systems, and additional aircraft). Activities associated with this action continued into 2014. Flight operations were reduced by approximately 40 percent from before 2007. Anticipated impacts from the beddown were analyzed in an EIS and the Record of Decision was signed in 2007.

5.1.1.2 RECENTLY COMPLETED, ONGOING, AND NEAR-FUTURE ACTIONS AT CANNON AFB

Construction and infrastructure upgrades on USAF installations are required to ensure mission sustainability and operational efficiency. Several projects have been identified as recently (i.e., within the last year) completed, ongoing, or near-future projects for 2018. These projects would be expected to have negligible potential for contributing to cumulative impacts when considered with the Proposed Action and other installation development projects. Therefore, they are not considered for further analysis in this EA. Identified recently completed, ongoing, and near future projects which are considered in this cumulative analysis where there is the potential for cumulative effects follow (CAFB 2016e):

- **27th Special Operations Maintenance Squadron (SOMXS) Storage Facility** – This project would construct a vinyl covered storage shelter for storage of equipment for the 27 SOMXS. This project was projected ready for installation in 2016 pending approval and site preparation.
- **Building 724 Parking Lot** – The 551st Special Operations Squadron (SOS) Military Construction would develop a parking lot in the area where Building 722 (scheduled for demolition as part of a separate MILCON action) is currently located. An alternative to this would be to construct a parking lot in available development space located adjacent to Building 724.
- **Runway 04 Glideslope Generator** – The current Runway 04 glidescope generator at Building 3050 is currently within a flood zone and is scheduled for replacement because of water damage. The generator would be moved and the current facility concrete pad would be demolished. The replacement generator and ATS would be located near, but across the road from, the Runway 04 glidescope.
- **Fuel Infrastructure Upgrades** – A replacement jet fuel transfer line was installed from the fuel storage complex in the North Ramp District to "hot pits" on the flightline. Hot pits allow refueling of aircraft while they are still on the runway. In addition, a fuel pumphouse and two 210,000-gallon ASTs are proposed to be constructed in the Southeast Development District to establish fuel storage in that location.
- **Chavez Dog Park** – Project would replace the existing 600-ft^2 dog park with an approximately 435-ft^2 dog park in the installation's Cannon Estates housing area. The new dog park would be centrally located for easy access to residents and non-residents, alike. The park would make use of existing walkways and would be a dual use area with gazebos, parks, water access, and landscaped green spaces.
- **Community Garden** – The project would develop a new community garden for Cannon AFB residents that would provide individual garden plots for rent. The garden site would

be located near existing outdoor community facilities secluded from heavy use facilities. Two plot alternatives were identified for this project.

5.1.1.3 REASONABLY FORESEEABLE FUTURE ACTIONS AT CANNON AFB

Expansion of the 9 SOS (2018–2026). The 9 SOS at Cannon AFB is planning operational expansion and growth in both personnel and aircraft inventory through AFSOC's decision to recapitalize the MC-130 fleet (CAFB 2017c). The project would involve a temporary 60 percent increase in MC-130 aircraft (approximately an additional 14) and associated personnel (approximately an additional 56) and flight operations at the installation by 2020. Construction of facilities, parking structures, and improvements at the Southeast Development District would also occur. Reductions are scheduled from 2020 to 2026, when 7 of the added MC-130 aircraft and 25 of the added personnel would be permanently transitioned to Kadena AFB, Japan. The remaining added personnel and aircraft would become permanently incorporated into Cannon AFB, representing an end state of growth of 30 percent for the 9 SOS. Cannon AFB has initiated the NEPA process to address the impacts associated with these proposed changes. Similar to other construction projects, any potential future projects would most likely result in impacts on land use, air quality, noise, traffic and transportation, water resources, local utilities, and hazardous materials.

551 SOS Simulator Expansion (2018–2023). Future systemic growth of the 551 SOS, both in manning and technological capability, is planned and involves (CAFB 2017c). The proposed addition of a simulator bay to existing Building 724, which currently houses a number of bays.

27 SOMXS Munitions Depot Expansion (2018–2023). To expand munitions storage and Munitions Flight operational capabilities, the 27 SOMXS plans to demolish and replace-by-construction existing earth covered and above ground munitions storage magazines and associated buildings. New facilities would be optimally configured to provide Munitions Flight the flexibility it requires to store various munitions types and compatibility groups.

27 SOW Realistic Military Training (2018–2023). The 27th SOW plans to expand Realistic Military Training flight operations from Cannon AFB and Melrose Air Force Range into additional locations (e.g., Clovis, Portales, Melrose, City of Rocks State Park) in New Mexico. Expansion of flight training into these areas would provide air and ground crews with a more realistic environment for training in specific mission sets involving combat, intelligence, surveillance, and reconnaissance.

Cumulative Small Installation Development Projects (2018–2020). More than 50 installation development projects are planned and reasonably foreseeable at Cannon AFB over the next five years, pending availability of funding, above and beyond those analyzed under the Proposed Action in this EA (CAFB 2016f). For the purposes of this analysis, brief project descriptions have been compiled into associated development categories (e.g., construction, demolition, renovation, and infrastructure), as appropriate. The on-installation cumulative projects include:

- **Construction Projects** (FY 2018–2020):
    - Airfield – Reconstruct main operations apron; repave Runway 13/31; reconstruct Taxiway Delta

  - Facilities – Construct antiterrorism fence between hangars near Building 407; construct new softball field near Building 1415.

- **Renovation Projects** (FY 2018–2020):
  - Airfield – Renovate and/or repair airfield taxiways
  - Facilities – Renovate and/or repair multiple facilities across the installation, including the existing Fitness Center (Building 444), Golf Course Clubhouse (Building 2206), existing Fire Station (Building 158), and other facilities and hangars.
- **Infrastructure Projects** (FY 2018–2020):
  - Roadway and Parking Lot Improvements – Evaluate and repair several roads and parking lots across the installation. Replace signage along the runways and taxiways.
  - Fire Suppression Systems Improvements – Install, upgrade, or repair fires suppression systems for Building multiple facilities across the installation.
  - Building Efficiency Improvements – Replace heating, ventilation, and air conditioning units at multiple facilities across the installation
  - Electrical Improvements – Replace primary and secondary electrical distribution that services the housing areas with buried lines.

Relocation of the 524 SOS from Cannon AFB to Eglin AFB (2016-2018). USAF is currently relocating the 524 SOS, operating C-146A aircraft under the 27 SOW at Cannon AFB, New Mexico, to Duke Field at Eglin AFB, Florida (USAF 2016). The project is relocating 18 C-146A aircraft and approximately 169 personnel from Cannon AFB to Duke Field. Facilities on Cannon AFB used to support the 524 SOS would be reallocated to support other operations on the installation. The USAF addressed impacts from this project on resources in an EA; the FONSI was signed in June 2016.

Table 5-1 summarizes changes in impervious surfaces from the Proposed Action and all other present and reasonably foreseeable future on-installation development activities that have been identified to date. The table presents the estimated total for all known project areas and respective changes in impervious surfaces. Some of the identified installation development cumulative projects are still in the early planning stages, and their designs (i.e., layouts and project area dimensions) have not yet been completed. Therefore, the sums presented in **Table 5-1** are subject to change with availability of new data.

5.1.1.4 OFF-INSTALLATION CUMULATIVE PROJECTS

Several development projects are planned within municipalities in eastern New Mexico during the identified timeframe for cumulative impacts analysis. The list of off-installation cumulative projects identified for this EA includes:

- **Curry County Infrastructure Capital Improvement Plan (ICIP) (2018–2022)** – The Curry County ICIP for 2018 through 2022 identified 35 projects involving building renovations, roadway and parking lot reconstruction and improvements, upgrades

Table 5-1. Cumulative Project Areas and Estimated Changes in Impervious Surfaces at Cannon AFB

Project Type	Total Project Area (ft^2)	Total Change in Impervious Surface (ft^2)
Proposed Action		
• Construction and Infrastructure	1.23M	1.16M
• Demolition	415,000	-175,000
9 SOS Expansion and Growth, 551st Simulator Expansion, 27th SOMXS Munitions Depot Expansion		
• Construction	83,000	33,000
• Demolition	13,000	-13,000
Realistic Military Training		
Does not affect facility space		0
Cumulative Small Installation Development Projects		
• Construction/Renovation/Demolition/ Infrastructure	~1M[a]	0
Relocation of 524th SOS from Cannon AFB to Eglin AFB		
Facility spaces to be made available for other use		0

Sources: CAFB 2016a, CAFB 2016f, USAF 2016

[a] Estimate that includes airfield reconstruction and repair.

supporting improved information technology for the county, upgrades to improve water distribution, and renovation of the existing fire station (Curry County 2017b). Projects would generally occur within and around the city of Clovis (8 miles east of Cannon AFB).

- **Ute Pipeline Project.** The Eastern New Mexico Rural Water System (known locally as the Ute Pipeline Project) is a 20-year project involving phased construction of a 151-mile-long water transmission pipeline, a water intake system, a WTP, several pump stations, and lateral pipelines for the distribution of water to surrounding municipalities (BoR 2011, Utton 2015). The project will supplement the existing Clovis, Portales, Melrose, Texico, Grady, Elida, Cannon AFB, and Curry and Roosevelt County municipal and industrial water supplies. The project was analyzed in an EA and FONSI signed in 2011. Construction of the water intake system began in 2013 (Utton 2015). Three lateral pipelines are proposed, and construction of the first two is slated to begin in 2018. The first pipeline would be along U.S. Highway 60/84 to the north of Cannon AFB and east to Clovis, including 15,000 feet of pipeline on the installation. The second would occur along and outside the western boundary of the installation south to Portales. The third lateral, proposed from Grady, New Mexico, to U.S. Highway 60/84 near Clovis, is currently in the design stage.

5.1.2 Cumulative Impacts on Resources

A cumulative effects analysis must be conducted within the context of the resource areas. The magnitude and context of the effect on a resource area depends on whether cumulative effects exceed the capacity of a resource to sustain itself and remain productive (CEQ 1997). The

following discusses potential cumulative impacts that could occur as a result of concurrently implementing the Proposed Action and other past, present, and reasonably foreseeable future actions. Cumulative projects constructed concurrently with components of the Proposed Action would result in greater cumulative impacts. No significant adverse, cumulative effects were identified in the cumulative effects analysis.

Table 5-2 summarizes in tabular form the potential environmental consequences associated with the Proposed Action and other identified reasonably foreseeable cumulative projects analyzed in this EA.

Table 5-2. Cumulative Impacts from Present, Ongoing, and Foreseeable Future Projects at Cannon AFB and Surrounding Area

Identified Cumulative Projects	Anticipated Contribution to Cumulative Impacts on Resources										
	Noise	Air Quality	Land Use	Infrastructure	Geological Resources	Water Resources	Biological Resources	Cultural Resources	Hazardous Materials and Wastes	Health & Safety	Socioeconomics
Cumulative Impacts (from Proposed Action combined with other past, present, and future reasonably foreseeable actions)	- ◊ ♦	- ◊ ♦	- ◊ ♦	- ◊ ♦	- ◊ □	- ◊ ♦	- ◊ ♦	- ● ♦	- □ ♦	- □ ♦ ■	- ◊
	+ ♦	+ ♦	+ ■	+ ■		+ ♦	+ ●		+ ●	+ ♦	+ ◊ ♦
Proposed Actions at Cannon AFB 2018-2028	- ◊ ♦	- ◊ ♦	- ♦	- ◊ ♦	- ◊ ♦	- ◊ ♦	- ◊ ♦	- ●	- ◊ ●	- □ ♦ ■	- ◊
	+ ♦	+ ♦	+ ■	+ ■		+ ♦					+ ◊ ♦

Sources: CAFB 2016a, CAFB 2016c, CAFB 2016f, CAFB 2017c, USAF 2016, Curry County 2017b, Utton 2015
Impact symbols: (-) – Adverse impacts; (+) – Beneficial impacts; (/) – No impacts; ○ –Short-term, negligible impacts; ● –Long-term, negligible impacts; ◊ –Short-term, minor impacts; ♦ –Long-term, minor impacts; □ –Short-term, moderate impacts; ■ – Long-term, moderate impacts.
Note: columns in rows without white cells have no identified beneficial impacts for that resource.

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

demolition or construction project smaller in scope than those analyzed as selected projects in this EA would be expected to result in less than significant environmental effects.

Noise. Development activities associated with the Proposed Action, expansion of the 9 SOS, Cumulative Installation Development Projects, and the County Curry ICIP projects would occur at different times and different locations over the next several years. If implemented concurrently, construction associated with the cumulative projects, would contribute to cumulative moderate, adverse noise impacts (e.g., from construction vehicles, operation of construction equipment, and shifted traffic patterns to accommodate the development actions) on the installation and immediately surrounding areas. These impacts would be short term (i.e., lasting only the duration of the construction actions), and intermittent.

Many of the on-installation projects would construct new facilities in high noise areas (e.g., 65 dBA airfield noise contour from aircraft operations); however, operation of these new facilities would not cumulatively impact the long-term operational noise on the installation. Implementation of the Proposed Action would contribute negligibly to long-term cumulative operational noise on and around the installation. Changes in flight operations associated with the relocation of the 524 SOS to Eglin AFB and the expansion of the 9 SOS on Cannon AFB would likely have the greatest contribution to long-term operational noise impacts on the installation and surrounding areas.

Air Quality. Implementation of the Proposed Action when combined with other cumulative projects would not be expected to result in significant cumulative impacts on air quality. Concurrent construction and demolition activities associated with the Proposed Action and other identified projects in the same vicinity could have short-term, cumulative, minor, adverse, impacts on air quality from increased emissions increased traffic, presence and operation of construction vehicles and equipment.

The Proposed Action and other cumulative projects would generate emissions that would cumulatively result in minor, adverse, short-term increases of GHG levels on the installation and surrounding areas. It is anticipated that GHG emissions from Cannon AFB projects would be well below 51,000 tpy and that GHG emissions and would remain below major source thresholds when combined with the maximum annual GHG emissions from installation development activities. Therefore, it is expected that GHG emissions from construction and operation of the Proposed Action and other identified cumulative projects would not significantly affect air quality.

Land Use. Land use at Cannon AFB is guided by the Cannon AFB IDP to ensure safe, compatible development. Cumulatively, construction of the Proposed Action projects and other cumulative projects would have short-term adverse impacts from presence of construction operations at the intended facility locations, and long-term beneficial impacts on land use efficiency for the installation in accordance with future planning goals of the Cannon AFB IDP. Minor, adverse cumulative impacts on land use would be expected from the construction of cumulative projects in areas that would be inconsistent with existing land use designations and/or would have an environmental constraint (e.g., floodplain, ESQD arc, ERP site). Proposed Action projects C1, C3, C5, C6 and C8 would be fully or partially constructed within the 100-year floodplain (see Water Resources below). The safety fan buffer for the Project C1

outdoor firing range partially overlaps ERP site AOC E, but that ERP site is closed. Following recommended changes in land use designation, the location of each facility would be compatible with surrounding land use designations and would support the long-term benefits of improved land-use and operational efficiency on the installation as described in the Cannon AFB IDP.

Demolition projects associated with identified the Proposed Action and other identified on-installation cumulative projects would remove aging, outdated facilities and make land available in previously disturbed areas for new construction. These impacts would be minor and beneficial.

Ground-disturbance activities from the Proposed Action and other on-installation cumulative projects in the vicinity of ERP sites could involve encounters with contaminated soil or groundwater. Assessment of ERP sites to determine appropriate Land Use Controls would be required for all project designs, development actions, and future land use plans. No changes to off-installation land use designations or functional land uses would be expected as a result of implementing the Proposed Action, on- and off-installation cumulative projects with the potential to affect the land use.

Infrastructure and Transportation. Individually, the Proposed Action projects would result in temporary, negligible to minor, adverse impacts on utilities (i.e., supply interruptions and increased runoff into the stormwater system), transportation (i.e., increased vehicle traffic, shifted traffic patterns, construction along the airfield), and the solid waste management system (i.e., generation of construction and demolition debris). Long-term, negligible to minor, adverse impacts on the liquid fuel and natural gas supplies from increased consumption of these resources to accommodate the construction and demolition processes, and requirement to heat the additional building spaces. Long-term, minor, adverse impacts on the stormwater management system because construction of Proposed Action project facilities would result in a net increase of approximately 1.16 million ft^2 of impervious surfaces. Demolition of facilities would help to offset these impacts by reducing impervious surfaces by 174,500 ft^2 for a net increase of approximately 991,000 ft^2.

Long-term, minor, adverse impacts on electrical demand would be expected from implementation of the Proposed Action and on-installation cumulative projects. Long-term, moderate, beneficial effects would be realized from implementing the Proposed Action, Ute Pipeline Project, and the Curry County ICIP projects including improved water infrastructure, water flow, and fire-suppression efficiency from construction of the new high-volume capacity water tower; increased water supply modernized pipeline infrastructure for distribution; enhanced capacity and service load of liquid fuels infrastructure; replacement of older, substandard facilities with new, more efficient, buildings; utilities upgrades, facility upgrades, and the consolidation of functions. Additionally, all new construction would be designed to optimize building performance through minimized consumption of electricity/energy and water, and generation of solid waste.

When implemented concurrently with on-installation projects, the Proposed Action would contribute to overall short-term minor impacts on utilities through temporary supply interruptions, and increased consumption of fuel and generation of solid waste to support the development

processes. Adverse impacts on transportation would be short-term, minor, with increased vehicle traffic, and shifted traffic patterns that would be required to accommodate construction sites, lane closures, and alterations to base-wide transportation. The complete upgrade of the main gate and visitor facility, new paved roads, construction of roundabouts at several intersections would result in long-term moderate, beneficial impacts on transportation infrastructure and traffic through improved traffic flow and capacity to accommodate increasing traffic demands. Consolidation of facilities and mission support functions on the installation would also support improved traffic by reducing commuting distances between mission support facilities. Construction of facilities along the runways would result in short-term, minor impacts on the airfield. To minimize potential for impacts on missions, development actions would be planned to avoid periods of increased airfield and flight operations.

Long-term, minor, adverse impacts would be expected for fuel consumption required for expanded operations, natural gas consumption required to heat added office spaces, net increase in impervious surfaces for the installation affecting stormwater management, and increased generation of solid waste affecting solid waste management. Construction actions would increase impervious surface areas on the installation incurring long-term, adverse impacts. Because these projects also involve removal of impervious surfaces through building demolition and facility consolidation actions, the cumulative adverse impacts on stormwater management would be offset, and would likely be minor. Demolition waste is managed by individual contracts, but it is anticipated that much of the clean demolition and construction debris would be recycled to the extent practicable instead of disposed of in a landfill or rubble fill. Construction and demolition waste is a short-term, adverse effect in that it would only be generated during those activities, but the disposal of construction and demolition waste in a landfill would be a permanent effect.

Geological Resources. Individually, many of the proposed construction and demolition activities could have short-term, negligible to minor, adverse effects as a result of vegetation removal, compaction of surrounding soils, and increased soil erosion and sedimentation. Considered cumulatively, concurrent construction activities occurring in the same vicinity could have short-term, minor, adverse cumulative effects on soil resource. However, implementation of the erosion and sedimentation control plans would be expected to minimize potentially adverse cumulative effects. Additionally, implementation of the Proposed Action and the other identified on-installation cumulative projects would result in increased impervious surfaces on the installation. These changes would have long-term, adverse effects on soils.

Demolition of pavements and facilities and reconstructing new facilities at those locations would partially offset potentially long-term, adverse, cumulative effects from construction of facilities by providing areas of previously disturbed soil that would require minimal grading.

Ground-disturbing activities associated with the Proposed Action and cumulative projects in or around ERP sites could involve encounters with contaminated soil or groundwater. Prior to construction activities near areas of known contamination, soils would be sampled to determine the extent of contamination, and remediated in accordance with Federal, state, and installation regulations prior to commencement of construction activities. Cumulative long-term, negligible,

beneficial, impacts (i.e., improved soil quality) would be expected from the removal of contaminated soils.

The Proposed Action when combined with other cumulative projects would not impact geology and would, therefore, not contribute to cumulative impacts on this resource. New facilities are proposed in areas of Cannon AFB that are disturbed by previous development or are immediately surrounded by existing facilities or infrastructure; these areas are not considered available for agricultural use. No cumulative impacts on prime farmland would occur.

Water Resources. Construction and demolition activities associated with the Proposed Action would not affect ground or surface water. However, population growth on the installation associated with the Proposed Action and other on- and off-installation cumulative projects would translate into added personnel, visitor, and facility requirements for water consumption. These actions would cumulatively contribute to long-term, moderate, adverse impacts on groundwater, as the draw from potable water sources would be increased to meet demands of the installation and surrounding areas. It is expected that the surface water source provided by the Ute Pipeline would be a major contributor of potable water on the installation and replace groundwater wells currently in use, which would help alleviate the current and projected rates of groundwater aquifer drawdown.

Construction of the Proposed Action projects would result in a net increase of approximately 1,000,000 ft^2 of impervious surface for the installation. Demolition of existing facilities and pavements would help to offset additions of impervious surfaces that would be constructed for the Proposed Action and other cumulative projects.

Biological Resources. Considered cumulatively, planned installation development activities have the potential for short- and long-term, minor, adverse effects on vegetation and wildlife.

Concurrent construction and demolition activities associated with the Proposed Action and other identified on-installation cumulative projects occurring in the same vicinity could have short-term, minor, adverse cumulative effects on wildlife as a result of noise and habitat disturbance. Construction-related noise would only temporarily last during those activities and would be cumulatively minor. Installation development projects could generate noise from operation, such as new mechanical equipment or vehicle traffic accessing different facilities; these changes in noise would have negligible long-term, cumulative effects on wildlife because wildlife species inhabiting the installation are accustomed to noise disturbances in developed areas.

Implementation of the Proposed Action and other installation development activities would not affect threatened or endangered species, so cumulative effects would not occur. Proposed development actions would be conducted in a manner to avoid adverse effects on migratory birds to the extent practicable. Implementation of environmental protection measures (see **Section 5.2**) would minimize the potential for adverse effects on migratory birds from individual projects. Should a transient listed species or species of concern be identified on-site during construction activities, development actions would halt and the Cannon AFB natural resources manager would be immediately informed. The species would also be given sufficient time to move away from the project area on its own before resuming activities.

Cultural Resources. As noted in **Section 3.8.2**, all buildings constructed before the end of the Cold War (i.e., 1991) have been evaluated for NRHP eligibility. Only one structure, Building 2 (flagpole), is eligible for NRHP listing. All other buildings on Cannon AFB are not eligible for the NRHP and would not be affected by proposed projects. Visual changes from demolition of Building 1, which is adjacent to Building 2, would have a long-term, negligible, adverse effect on Building 2. Other construction, infrastructure, and building demolition projects farther from Building 2 would not be expected to impact the structure since these changes would occur within the context of an active military installation and new construction would be similar to existing architecture. Incremental changes in the visual environment at Cannon AFB, including those presented by on-installation cumulative projects, could have a long-term, minor, adverse impact on Building 2 as increasing numbers of contemporaneous World War II and Cold War-era buildings are demolished. Land areas where new construction for the Proposed Action projects would occur have been disturbed from previous development at Cannon AFB and archaeological resources are unlikely. Considered collectively with the other identified on-installation cumulative projects, cumulative effects on these resources are assumed to be negligibly adverse.

The Proposed Action and other on-installation cumulative projects would not contribute to cumulative effects on architectural or archeological resources off the installation.

Hazardous Materials and Wastes. Hazardous materials (e.g., ACM and LBP) are known or suspected to exist in numerous facilities planned for demolition or renovation under the Proposed Action and other identified on-installation cumulative projects. Use of construction vehicles and equipment to implement the Proposed Action and other identified on-installation cumulative projects could also result in spilled petroleum, oils, or fuel. Adverse impacts from spills or exposure to hazardous materials would be short-term and negligible because contractor operations would be conducted in adherence the Cannon AFB Hazardous Waste Management Plan and SPR Plan. Cumulatively, long-term, beneficial effects would be expected from the removal of ACM and LBP from the installation.

Health and Safety. Cannon AFB complies with all applicable AFOSH and OSHA regulations and munitions safety criteria to provide a safe working environment while supporting military readiness and training activities. Individual installation development projects could pose an increased risk for a safety mishap during construction and demolition activities. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse, cumulative effects by increasing local construction traffic accessing sites, increasing maintenance and repair activities, and creating highly noisy environs that could mask verbal or mechanical warning signals. Adherence to USAF AFOSH and OSHA regulations would minimize the potential for adverse effects on construction workers. Cumulative effects on construction safety would be short-term and negligible to minor.

Installation development activities in some areas of Cannon AFB inherently pose a greater risk because of operational or environmental safety issues and conflicts, such as with ESQD arcs and ERP sites. Construction activities within ESQD arcs must be coordinated with appropriate airfield or weapons safety personnel to ensure the safety of construction workers. In accordance with Air Force Manual 91-201, new construction of non-explosives facilities within

an explosive CZ would require preparation and approval of an explosives site plan. Planned infrastructure improvements within ESQD arcs would have no long-term, adverse effects.

Cumulative short-term, negligible, adverse impacts on safety could occur during ground-disturbing activities near an ERP site, which could result in exposure to contaminated soils or groundwater. To ensure safety of construction crews, and future operational uses, construction actions would follow applicable land use controls. If contaminated soils or groundwater are encountered, construction actions would halt until the site could be evaluated for cleanup requirements. Removal and disposal of contaminated soil or remediation of contaminated groundwater would remove the risk of exposure to hazardous materials and would ensure long-term, negligible, beneficial impacts on safety for the installation. Because this would be the process for any of the identified on-installation cumulative projects involving construction actions near ERP sites, the long-term cumulative beneficial impacts on safety would likely be minor.

Installation development activities associated with the Proposed Action and cumulative projects would be expected to have long-term, minor to moderate, beneficial, cumulative effects on safety by maintaining and improving facilities, pavements, and infrastructure systems. Demolition of old and underused facilities would remove ACM, LBP, and other health and safety concerns. Many of the planned projects would repair degraded roads, improve lighting, repair or install new fire safety systems, and upgrade force protection and security measures. Cumulatively, these projects would contribute to a safer working environment for all personnel at Cannon AFB.

Socioeconomics. Cannon AFB contributes substantially to the local economy. Cumulatively, installation development activities would have short-term, minor, beneficial effects on the local community through the procurement of goods and services. However, construction-related expenditures would not generate any long-lasting cumulative benefits. Implementation of the projects identified in this cumulative effects discussion would occur mostly on Cannon AFB.

5.2 Environmental Protection Measures

The Proposed Action would not result in significant adverse effects on the land or the surrounding area. Environmental protection measures and other minimization measures would be implemented to eliminate or reduce the impacts of non-significant adverse effects.

General environmental protection measures that would be included, as applicable, as parts of installation development projects are summarized as follows:

- Fugitive dust-control techniques such as watering and stockpiling would be used to minimize adverse effects. All such techniques would comply with applicable regulations. These environmental protection measures would minimize adverse effects associated with air quality, soil, and water resources.
- Clearing and grubbing would be timed with construction to minimize the exposure of cleared surfaces. Such activities would not be conducted during periods of wet weather. Construction activities would be staged to allow for the stabilization of disturbed soils. These environmental protection measures would minimize adverse effects associated with soil and water resources.

- Soil erosion-control measures, such as soil erosion-control mats, silt fences, straw bales, diversion ditches, riprap channels, water bars, water spreaders, vegetative buffer strips, and hardened stream crossings, would be used as appropriate. These environmental protection measures would minimize adverse effects associated with soil and water resources.
- Stormwater management would be used as appropriate during construction to minimize offsite runoff. Following construction, stormwater management systems would ensure that predevelopment site hydrology is maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow in accordance with EISA Section 438. These environmental protection measures would minimize adverse effects associated with water resources.
- If construction or demolition is scheduled to start during the period in which migratory bird species are present, steps should be taken to prevent migratory birds from establishing nests in the project area. A site-specific survey for nesting migratory birds should be performed starting at least two weeks prior to site clearing as appropriate. If nesting birds are found during the survey, buffer areas should be established around nests. Construction should be deferred in buffer areas until birds have left the nest. Confirmation that all young have fledged should be made by a qualified biologist. Other steps could include covering equipment and structures and use of various excluders (e.g., noise). Birds can be harassed to prevent them from nesting within the project area. Once a nest is established, they should not be harassed until all young have fledged and are capable of leaving the nest site.
- Disturbance of environmental resources and topography would be minimized by integrating existing vegetation, trees, and topography into site design. These measures would minimize adverse effects associated with soils and biological resources.
- Where feasible, new areas of impervious surfaces should be minimized through shared parking, structured parking, increased building height, or other measures as appropriate. These measures would minimize adverse effects associated with soils and water resources.
- Provisions would be taken to prevent pollutants from reaching the soil, groundwater, or surface water. During project activities, contractors would be required to perform daily inspections of equipment, maintain appropriate spill-containment materials on site, and store all fuels and other materials in appropriate containers. These measures would minimize adverse effects associated with soils, water resources, and hazardous materials and waste management.
- Physical barriers and “no trespassing” signs would be placed around the demolition and construction sites to deter unauthorized personnel from entering the sites. All construction vehicles and equipment would be locked or otherwise secured when not in use. These measures would minimize adverse effects associated with health and safety.

- Construction equipment would be used only as necessary during the daylight hours and would be maintained to the manufacturer's specifications to minimize noise impacts. These measures would minimize adverse effects associated with health and safety.

5.3 Unavoidable Adverse Effects

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

Projects C1, C3, C5, C6, C8, and I1 would be constructed (either fully or partially) within the 100-year floodplain. Cannon AFB has determined that there are no practicable alternatives for these facilities, and where project design cannot avoid the floodplains, these projects require a FONPA.

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

Construction and demolition conducted to implement the Proposed Action would be conducted in accordance with applicable federal, regional, state, and local land use plans, policies, and controls.

Proposed Action projects C1, C3, C4, C5, C6, and C12 would be constructed in areas where their functional land uses would be inconsistent and/or incompatible with exiting land use designations (see **Table 3.6**). The land use designations for these sites would likely be changed, in accordance with the Cannon AFB IDP future land use goals, to more appropriately align with efforts to consolidate land use functions and facilities. Once these changes are made, the projects would be aligned with installation land use policies and controls. All other Proposed Action projects would be functionally compatible with existing land use designations.

Projects C1, C2, C8, C9, C10, C11, C12, C13, I1, and I2 would be constructed within areas of the installation that experience high levels of noise (i.e., the 65 dBA noise contour). According to USAF land use compatibility guidelines, which are outlined in the AICUZ guidance, these operational/infrastructure projects would be considered compatible within the noise zone where they would be built and operated. Measures to reduce noise levels would be incorporated, as appropriate, into the design and construction of each.

5.5 Relationship Between the Short-term Use of the Environment and Long-term Productivity

Short-term uses of the biophysical components of human environment include direct construction-related disturbances and direct effects associated with an increase in activity that occurs over a period of less than 5 years. Long-term uses of human environment are those effects occurring over a period of more than 5 years, including permanent resource loss.

The Proposed Action would not result in an intensification of land use in the surrounding area. Development of the Proposed Action would not represent a significant loss of open space. The long-term beneficial effects of implementing the Proposed Action and other planned installation development activities would support the ongoing and future training missions and other readiness training and operational assignments.

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

5.6 Irreversible and Irretrievable Commitments of Resources

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

Floodplains. The Proposed Action projects C1, C3, C5, C6, C8, and I1 would be constructed either fully or partially within the 100-year floodplain. Presence of these structures on the 100-year floodplain, where there were none prior, would represent long-term, minor, irreversible and irretrievable impacts on floodplains where they cannot be avoided by project design. Construction of these projects would be conducted in accordance with state and federal floodplain management to minimize adverse impacts on the floodplain.

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

Material Resources. Building materials (for renovation or construction of facilities), concrete and asphalt (for parking lots and roads), and various material supplies (for infrastructure) and would be irreversibly consumed from project implementation. Most of the materials are not in short supply, would not limit other unrelated construction activities, and their loss would not be considered significant.

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

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work

activities. However, the use of human resources for the Proposed Action and alternatives represent employment opportunities, and is considered beneficial.

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6. List of Preparers

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A

Public and Stakeholder Coordination

Appendix A: Public and Stakeholder Coordination List

Federal Parties

United States Senate, New Mexico Senators

United States House of Representatives, New Mexico's 2nd and 3rd District Representatives

Bureau of Indian Affairs, Southwest Region

Natural Resources Conservation Service, District Conservationist

U.S. Army Corps of Engineers Albuquerque District, Chief Environmental Resources Section

Bureau of Land Management New Mexico State Office

U.S. Environmental Protection Agency, Region 6

U.S. Fish & Wildlife Service, Southwest Region

State Parties

The Honorable Susana Martinez Governor, State of New Mexico

State Representative, New Mexico House of Representatives, District 64

State Senator, New Mexico Senate, District 27

New Mexico State Historic Preservation Division, State Historic Preservation Officer

New Mexico State Land Office, Clovis District Office

New Mexico Environment Department, District 1 Main Office

New Mexico Indian Affairs Department

New Mexico Office of Military Base Planning and Support

New Mexico Department of Agriculture

New Mexico Game and Fish, Southeast Office

Local Parties

City Manager, City of Clovis

District 3 Commissioner, Curry County

District 3 Commissioner, Roosevelt County

Mayor, City of Clovis

Mayor, City of Portales

Native American Tribal Contacts

Apache Tribe of Oklahoma

Comanche Nation of Oklahoma

Jicarilla Apache Nation

Kiowa Tribe of Oklahoma

Mescalero Apache Tribe

Notice for an Early Public Review published in the *Eastern New Mexico News* on 28 June 2017.

Notice for Early Public Review of a Proposed Action in a 100-Year Floodplain

To: All Interested Agencies, Groups, and Individuals

The U.S. Air Force (USAF) proposes to implement facility improvements necessary to support the Cannon AFB's mission. The Proposed Action includes 15 facility construction and 39 demolition activities that support improvement of the physical infrastructure and functionality of the installation.

The Proposed Action is subject to the requirements and objectives of Executive Order (EO) 11988, *Floodplain Management*, because some of the related support infrastructure would be located in the floodplain. This notice is required by Section 2(a)(4) of EO 11988 and has been prepared and made available to the public by the USAF in accordance with 32 Code of Federal Regulations, Part 989.24(c), and USAF Instruction 32-7064 for actions proposed in floodplains or wetlands. The USAF is preparing an Environmental Assessment in accordance with the National Environmental Policy Act (NEPA) and the USAF's Environmental Impact Analysis Process. Cannon AFB will contact the US Fish & Wildlife Service, State of New Mexico Environment Department, and the New Mexico State Historic Preservation Office for their input on the Proposed Action during preparation of a Draft Environmental Assessment as a part of the NEPA review process.

A number of areas on Cannon AFB are within the 100-year floodplain due to substantial flow of surface drainage from north of the installation, across the cantonment area and flightline, to the southeast. Construction of facilities under the Proposed Action is estimated to modify up to approximately 115,000 ft^2 of floodplain, approximately 0.3 percent of the installation's total acreage located in the floodplain. The proposed construction would be designed to avoid and minimize floodplain impacts to divert water away from the sites of development to the extent possible. The proposed floodplain displacement is expected to have no effect on flooding potential in the area.

The public comment period ends 30 days after the publication of this notice. Address written comments to Ms. Lindsay Dunahee, 27th Special Operations Civil Engineer Squadron, 506 North Commando Way, Cannon AFB, New Mexico 88103, or lindsay.dunahee@us.af.mil.

DEPARTMENT OF THE AIR FORCE
27TH SPECIAL OPERATIONS CIVIL ENGINEER SQUADRON (AFSOC)
CANNON AIR FORCE BASE NEW MEXICO

SEP 1 3 2017

Ronald A. Lancaster
Deputy Base Civil Engineer
27 Special Operations Civil Engineer Squadron
506 North Air Commando Way
Cannon AFB, NM 88103

Dr. Benjamin Tuggle, Regional Director
U.S. Fish and Wildlife Service, Southwest Region
PO Box 1306
Albuquerque, NM 87103

Dear Dr. Tuggle

The U.S. Air Force (USAF) and the 27th Special Operations Wing (SOW) under the Air Force Special Operations Command (AFSOC), headquartered at Cannon AFB, New Mexico have determined that installation development would have no effect on the federally endangered least tern (*Sternula antillarum*). No other federally-listed species would have the potential to occur within the project area.

For this consultation, the USAF has integrated the requirements of the National Environmental Policy Act and Endangered Species Act so that all procedures run concurrently. As such, in accordance with 50 CFR Part 402.06(a), USAF intends to have the Environmental Assessment (EA) addressing installation development stand as the biological resources review for threatened and endangered species that could be affected by the project.

The intent of the ongoing process of installation development at Cannon AFB is to provide installation improvements necessary to support the mission of 27 SOW and tenant units. Currently proposed projects include facility construction, demolition, and infrastructure improvements. The 13 construction projects (totaling 1.2M square feet of development), 2 infrastructure projects (covering 13 acres), and 39 demolition projects (totaling approximately 415,000 square feet) that comprise the Proposed Action being considered in the EA were identified as priorities for installation improvement in the 2016 Cannon AFB Installation Development Plan and various future funding documents over the next 5 to 10 years (2018–2028). These plans identify requirements for the improvement of the physical infrastructure and functionality of Cannon AFB, including current and future mission and facility requirements, improvement constraints and opportunities, and land use relationships. See the tables and maps enclosed for details about the proposed projects.

Construction, demolition, and operation under the Proposed Action would not result in the permanent loss of habitat for the least tern. The least tern is uncommon in the region, but is present in the summer months during breeding and migration to its wintering habitat. The closest known breeding location is Bitter Lake National Wildlife Refuge, approximately 95 miles southwest of Cannon AFB near Roswell, New Mexico. On Cannon AFB, the least tern could use the golf course ponds and playa lakes for foraging and could potentially nest along North Playa Lake. However,

none of these locations are within the installation development project areas and the least tern has not been observed on Cannon AFB to date, making their occurrence unlikely.

If you have any questions or require additional information, please contact Ms. Lindsay Dunahee at (575) 904-6732 or lindsay.dunahee@us.af.mil.

RONALD A. LANCASTER, GS-14

Attachments:
1. DOPAA Tables for Cannon AFB IDEA
2. Figures for Cannon AFB IDEA

Table 1. Purpose and Need for Each Proposed Action

Project ID	Project Name	Fiscal Year	Square Footage	Purpose of the Action	Need for the Action
Construction Projects					
C1	Dangerous Cargo Pad and Combat Arms Training & Maintenance (CATM) Facility	2018+	185,000	Provide new permanent dangerous cargo pad and move CATM and associated safety fan buffer arc currently within proposed pad site to new location.	Permanent dangerous cargo pad would allow transfer of munitions and other hazardous cargo to occur in a location that would not restrict airfield runway access. New CATM would allow for broader range of training activities supporting the Cannon AFB mission based on new Rifle/Carbine Air Force Qualifications Course (AFQC) requirements.
C2	Professional Development Center	2021	71,000	Consolidate educational and recreational facilities used by Cannon AFB personnel.	Cannon AFB's recent population growth necessitates additional space for education and training requirements. Current education facilities are aging and undersized.
C3	Satellite Fire Station	2022	40,000	Provide secondary fire station and emergency communications center in installation's Southeast Development District.	Personnel, aircraft, and facilities are at greater risk for injury or fatality due to the existing fire station in the North Ramp District being unable to meet required response times in the Southeast Development District.
C4	Satellite Fitness Center	2020	18,000	Provide additional recreational resource for installation personnel in Southeast Development District to provide.	Existing fitness center in North Ramp District is over 30 years old, can only serve half the installation population, and experiences facility crowding and limited parking during peak use, which limits the ability for airmen to meet fitness requirements.
C5	Mobility Aerial Delivery Facility (MADF)	2018+	111,000	Provide warehousing function, associated infrastructure, and parachute drying tower for distributing and receiving materiel from aircraft.	Current facility used for this function is in the North Ramp District and needs to be located near the hangars in the Southeast Development District. It is also inconsistent with airfield clear zone criteria. No other facility exists that can provide the necessary support for this mission.

Project ID	Project Name	Fiscal Year	Square Footage	Purpose of the Action	Need for the Action
C6	Deployment Processing Center	2021	35,000	Provide processing center for personnel and cargo departing for and returning from deployment.	Deployment processing of personnel and cargo currently must occur at different locations, resulting in inefficiencies.
C7	Lodging Facility	2025	25,000	Provide additional on-installation lodging for visiting personnel and their families.	The current on-installation lodging is inadequate for meeting the expected volume of visiting personnel to the installation.
C8	Transportation Complex	2026	51,000	Consolidate transportation administrative and operational functions.	Current vehicle operations and maintenance facilities are outdated and require replacement. The colocation of transportation facilities would also increase maintenance efficiency.
C9	Wing HQ/Law Center	2026+	26,500	Consolidate Wing HQ and law center facility.	The existing Wing HQ has deteriorated over time and the exterior requires major repair. The existing law center no longer meets space/operational requirements.
C10	Special Operations Forces (SOF) Squadron Operations Facility	2019+	26,000	Provide squadron operations facility for administration, planning areas, and aircraft equipment storage.	No facilities currently exist to house CV-22 squadron operations because all current squadron operations facilities are occupied by other squadrons. Current operations at multiple temporary facilities are less cohesive and less efficient.
C11	SOF Hangar	2022+	49,500	Provide aircraft maintenance hangar, aircraft maintenance unit facilities, and associated parking for remotely piloted aircraft.	Aircraft hangar space is limited and a doubling of aircraft at the installation is expected. An additional hangar would meet the capacity requirements for the incoming aircraft.
C12	SOF Simulator Facility	2027+	13,000	Provide motion-based aircraft simulator facility.	A new mission training facility of adequate size is required to support new real-world mission rehearsal and crew upgrade training requirements. No existing facilities are available to adequately support these requirements.

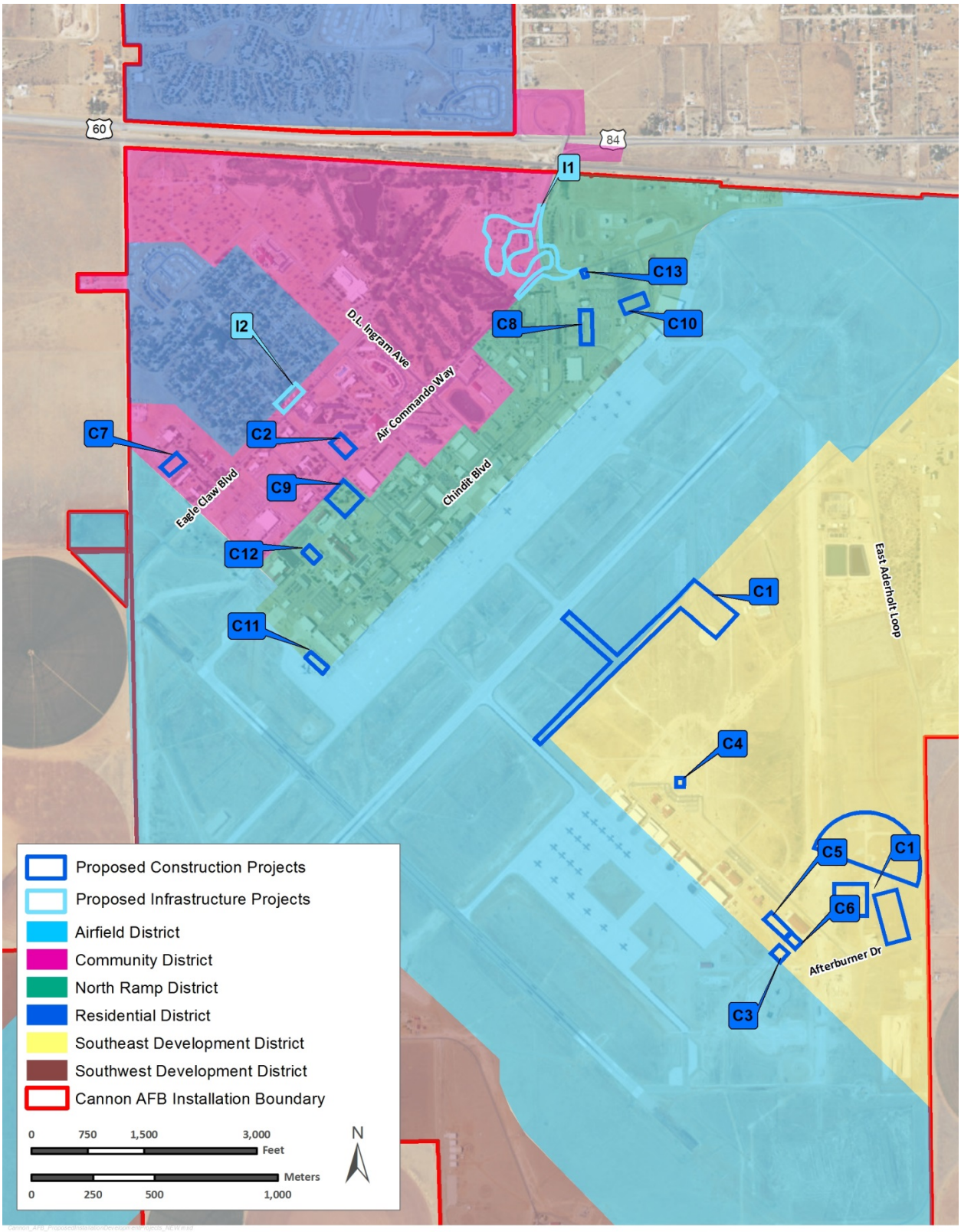
Project ID	Project Name	Fiscal Year	Square Footage	Purpose of the Action	Need for the Action
C13	Refueler Maintenance Facility	2025+	4,250	Provide enough space for refueler vehicles to be serviced in support of the aircraft flying mission.	The current facility is over 50 years old and would not be able to support the doubling of aircraft at the installation in 2017. A new facility within the existing refueler parking area near the airfield is required to meet response times to the airfield.
Infrastructure Improvement Projects					
I1	Reconstruct Main Gate	2020+	5,000 (facilities) 11.3 acres (total footprint)	Provide new entry control facilities with adequate security and safety standards that comply with AT/FP criteria.	The current vehicle inspection facility, identification checkpoint, and visitor control center do not meet AT/FP criteria. In addition, there are not enough traffic lanes at the Main Gate of the installation to accommodate current peak and future projected traffic levels.
I2	Water Tower Replacement	2019+	1.4 acre footprint; 600,000 gallon capacity	Replace three existing water towers that provide flow and water pressure for the installation's potable and firefighting water supply.	The current water tower system is over 65 years old and upgrading the system would eliminate the need for additional towers, booster pumps, and increased maintenance.
Demolition Projects					
D1 to D39	Various	2017+	383,000	Remove outdated and unnecessary facilities throughout the installation.	Several facilities throughout the installation no longer meet mission requirements, are no longer in use, or do not meet AT/FP criteria. These facilities need to be demolished to reduce infrastructure management costs by diverting resources away from excess, obsolete, or underused facilities.

Table 2. List of Proposed Demolition Projects

Project ID	Building Number	Units	Year Built	Description	Reason for Disposal	Covered Under Construction Project
Fiscal Year 2018						
D1	1162	250 ft^2	1974	Support Storage for Building 1156 (Dormitory)	Scheduled for replacement.	No
D2	1154	514 ft^2	1991	Support Storage for Building 1156	Scheduled for replacement.	No
D3	1163	231 ft^2	1974	Support Storage for Buildings 1158/1160 (Dormitories)	Scheduled for replacement.	No
D4	375	1 kg/m^3	1968	Oil/water separator (OWS) at Vehicle Maintenance Facility	The OWS, which has a capacity to treat an oil density of less than 1 kg/m^3, is no longer in use.	No
D5	1801	3,780 ft^2	1968	Lodging Support	Scheduled for replacement.	C7
D6	4029	2,847 linear feet	1943	Steam Heat Mains	No longer meet mission requirements due to age.	No
D7	150	9,900 ft^2	1967	Squadron Operations Facility	Scheduled for replacement.	C10
D8	1399	288 ft^2	1984	Medical Warehouse	Scheduled for replacement.	No
D9	1397	950 ft^2	1987	Ambulance Shelter	Scheduled for replacement.	No
D10	133	32,754 ft^2	1993	Maintenance Hangar	Scheduled for replacement.	C11
D11	2304	240 ft^2	1993	Traffic Check House	Does not meet AT/FP standards; scheduled for replacement.	No
D12	2311	5,200 ft^2	2010	Traffic Check House	Does not meet AT/FP standards; scheduled for replacement.	No
D13	2209	678 ft^2	1987	Visitor Control Center	Does not meet AT/FP standards; scheduled for replacement.	I1
D14	2220	250 ft^2	2004	Traffic Check House	Does not meet AT/FP standards; scheduled for replacement.	I1
D15	2310	256 ft^2	2012	CATM Dust Control Maintenance Building	Scheduled for replacement.	C1
D16	2312	3,350 ft^2	1961	General Purpose Small Arms Range	Scheduled for replacement.	C1

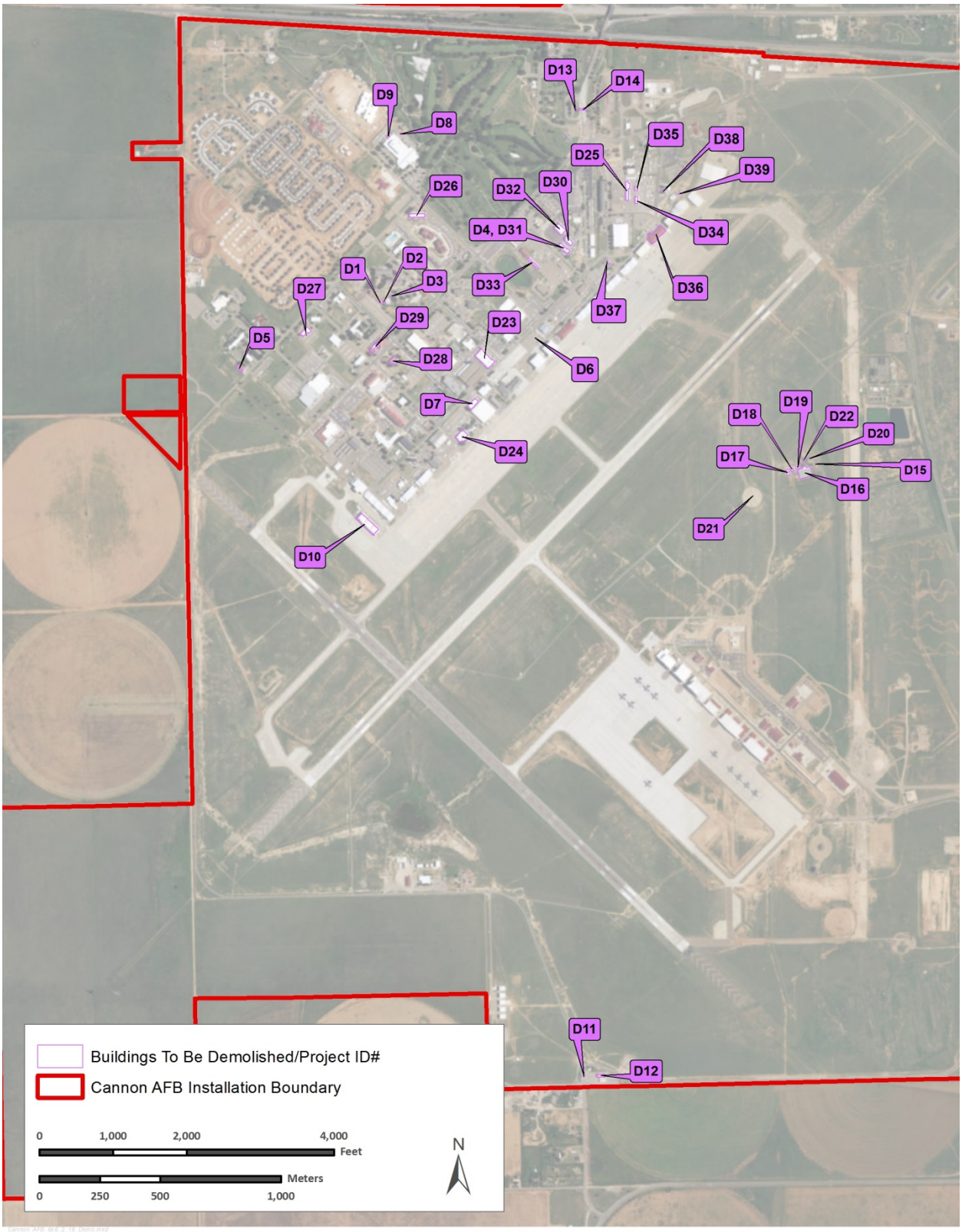
Project ID	Building Number	Units	Year Built	Description	Reason for Disposal	Covered Under Construction Project
D17	2313	3,315 ft^2	2005	Pad for Purchased Storage Building	Scheduled for replacement.	C1
D18	2314	1,677 ft^2	2005	CATM Auxiliary Building	Scheduled for replacement.	C1
D19	2315	2,667 ft^2	1986	CATM Maintenance Building	Scheduled for replacement.	C1
D20	2317	70,000 ft^2	1986	Skeet Range	Scheduled for replacement.	C1
D21	6012	59,400 ft^2	1956	Compass Calibration Pad	No longer required for mission.	C1
D22	2318	756 ft^2	1994	Rod and Gun Club	Scheduled for replacement.	C1
Fiscal Year 2019						
D23	620	32,474 ft^2	1961	Deployment Processing Facility	Scheduled for replacement.	C6
D24	130	16,615 ft^2	1960	EOD Facility	Scheduled for replacement.	No
Fiscal Year 2020+						
D25	215	11,387 ft^2	1960	Defense Reutilization Marketing Office/ Honor Guard/ Lighthouse	No longer meets mission requirements due to age.	C8
D26	1254	16,734 ft^2	1958	Airmen Leadership School	Scheduled for replacement.	C2
D27	76	8,181 ft^2	1976	Thrift Shop	No longer meets mission requirements due to age.	No
D28	1	14,815 ft^2	1960	Wing HQ	Scheduled for replacement.	C9
D29	60	11,643 ft^2	1962	Law Center	Scheduled for replacement.	C9
D30	335	9,620 ft^2	1955	Vehicle Maintenance Facility	Scheduled for replacement.	C8
D31	375	9,058 ft^2	1968	Vehicle Maintenance Facility	Scheduled for replacement.	C8
D32	379	13,426 ft^2	1965	Vehicle Maintenance Facility	Scheduled for replacement.	C8
D33	438	5,848 ft^2	1990	Vehicle Operations Parking Shed	Scheduled for replacement.	C8
D34	226	3,971 ft^2	1985	Base Engineer Warehouse	Scheduled for replacement.	C8
D35	227	2,320 ft^2	1990	Base Engineer Storage Facility	Scheduled for replacement.	C8

Project ID	Building Number	Units	Year Built	Description	Reason for Disposal	Covered Under Construction Project
D36	198	27,580 ft^2	1991	SOF Squadron Operations Facility	Scheduled for replacement.	C10
D37	202	1,124 ft^2	1953	Hazardous Waste Storage Facility	Scheduled for replacement.	C10
D38	218	250 ft^2	1981	Liquid Oxygen Storage Facility	Scheduled for replacement.	C10
D39	229	846 ft^2	1992	Aircraft Maintenance Shop	Scheduled for replacement.	C10



Data Source: World Imagery, Cannon AFB GIS 2017

Figure 1. Proposed Installation Development Projects on Cannon AFB



Data Source: Cannon AFB Aerial Imagery 2015

Figure 2. Proposed Demolition Projects on Cannon AFB

DEPARTMENT OF THE AIR FORCE
27TH SPECIAL OPERATIONS CIVIL ENGINEER SQUADRON (AFSOC)
CANNON AIR FORCE BASE NEW MEXICO

SEP 1 3 2017

Ronald A. Lancaster
Deputy Base Civil Engineer
27 Special Operations Civil Engineer Squadron
506 North Air Commando Way
Cannon AFB, NM 88103

Dr. Jeff Pappas
New Mexico State Historic Preservation Officer
Bataan Memorial Building
407 Galisteo St, Suite 236
Santa Fe, NM 87501

Dear Dr. Pappas

The United States Air Force (USAF) and the 27th Special Operations Wing (SOW) under the Air Force Special Operations Command (AFSOC) at Cannon Air Force Base (AFB), New Mexico, have initiated development of an Installation Development Environmental Assessment (IDEA) addressing selected projects from those programmed and reasonably foreseeable during installation development over the next 5 to 10 years (2018–2028). The purpose of this letter is two-fold: to initiate consultation pursuant to Section 106 of the National Historic Preservation Act and provide you an opportunity to review and comment on this Proposed Action.

Cannon AFB seeks to improve its understanding of the potential environmental consequences associated with the continuing process of installation development by evaluating these projects in a single Environmental Assessment (EA). The projects comprising the Proposed Action to be analyzed in this IDEA fall under three categories: 39 demolition projects (totaling approximately 415,000 square feet), 13 construction projects (1.2 million square feet of development), and two infrastructure improvement projects (covering 13 acres). Tables and maps of the projects are presented in the attached enclosure.

The Area of Potential Effects (APE) is defined as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. Taking into account the scale and nature of the undertaking, the APE for the Proposed Action is defined as an irregular area that encompasses all the projects presented on the attachments.

Four archaeological sites have been identified on the Cannon AFB main base, all of which are recommended not eligible for listing on the National Register of Historic Places. All proposed construction areas have been surveyed. Proposed construction would also occur primarily in heavily disturbed areas at the airfield and adjacent developed portions, and previously undiscovered archaeological resources are unlikely to be present.

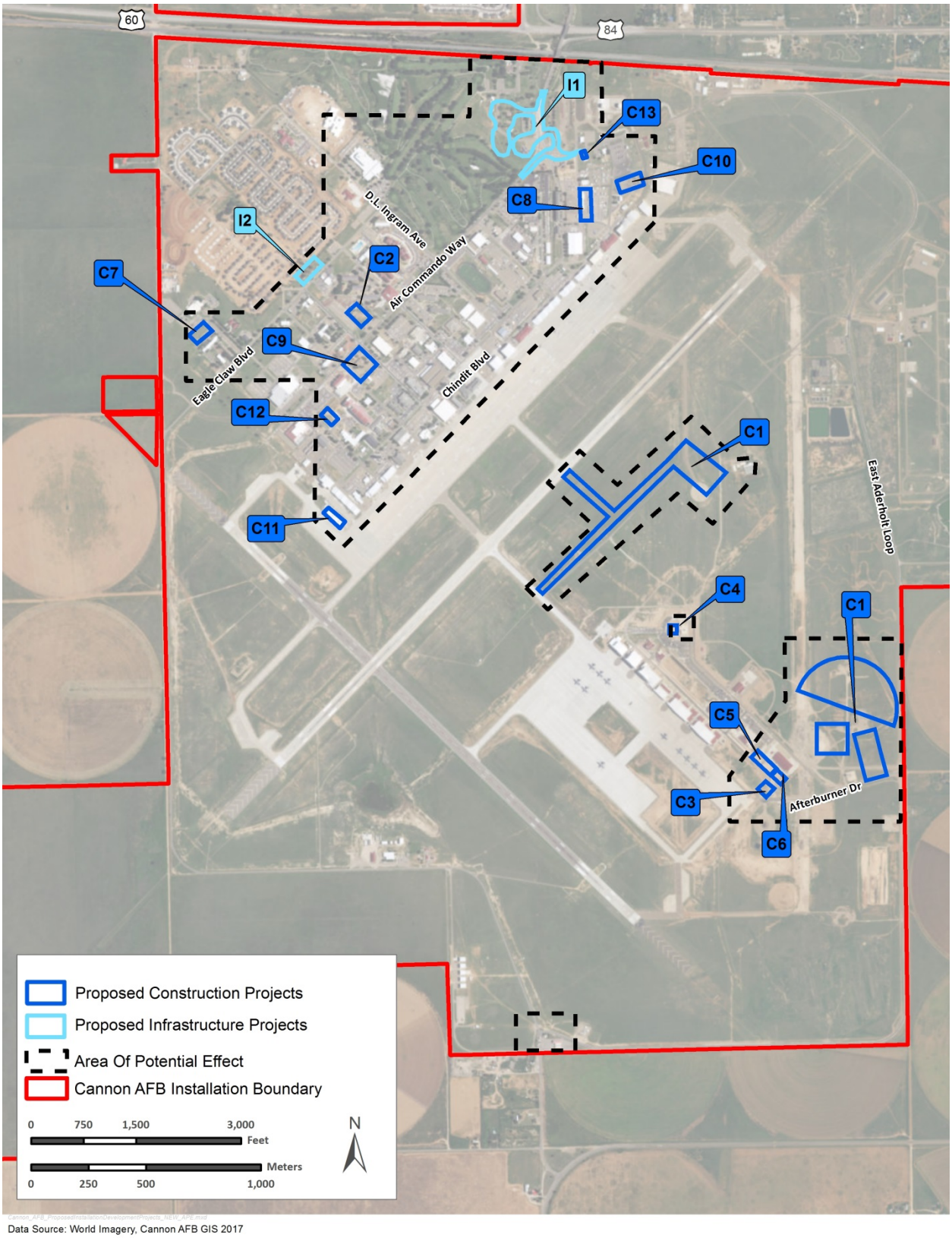
One eligible historic resource (Building 1 flagpole) is adjacent to Building 1, which is proposed for demolition. To ensure no impacts on this resource occur, a 20-foot buffer around the flagpole would be fenced off and maintained during demolition and construction activities. Cannon AFB identified 21 buildings in the APE that would be demolished as part of the undertaking and would reach at least 50 years of age prior to demolition. All 21 buildings were evaluated for NRHP eligibility in 2006 by Geo-Marine, Inc. and were determined not eligible.

Pursuant to Section 106 of the National Historic Preservation Act, 36 CFR Part 800, Cannon AFB is requesting your review of the attached materials and of any concerns or suggestions you may have regarding the Proposed Action. Your comments will help us develop the scope of our environmental review, which is being conducted in accordance with the National Environmental Policy Act and its implementing regulations. The USAF anticipates publishing the complete Draft EA in the in the fall of 2017 and the Final EA in 2018.

Please provide your written questions or comments and concurrence on the APE and approach for identifying historic properties. Please address all questions and comments to Ms. Lindsay Dunahee, 27 Special Operations Civil Engineer Squadron, 506 North Air Commando Way, Building 355, Cannon AFB, NM 88103. Comments are encouraged to be sent by email to lindsay.dunahee@us.af.mil.

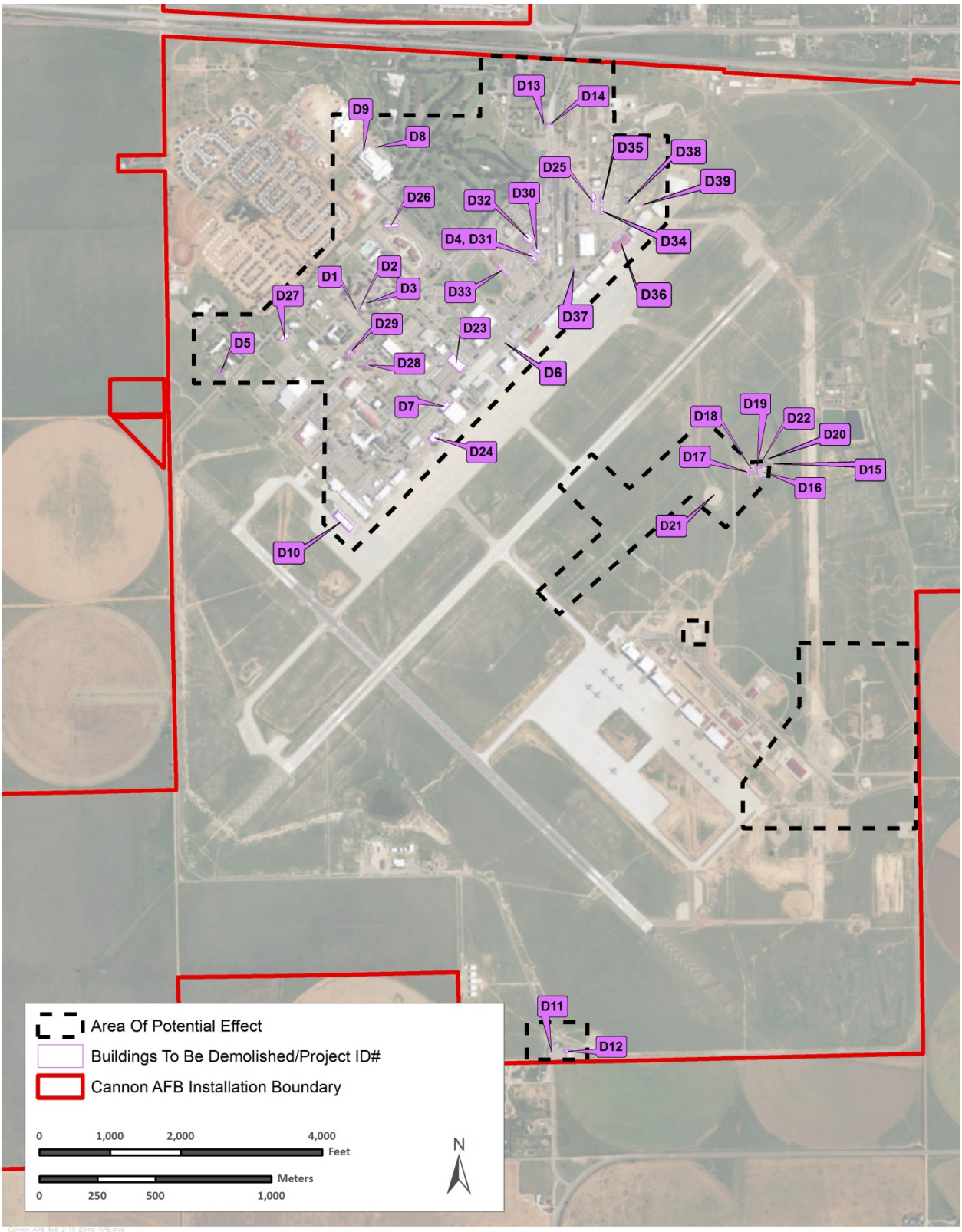
RONALD A. LANCASTER, GS-14

Attachments:
1. DOPAA Tables for Cannon IDEA
2. Project Figures for Cannon IDEA



Data Source: World Imagery, Cannon AFB GIS 2017

Figure 1. APE and Proposed Installation Development Projects on Cannon AFB



Data Source: Cannon AFB Aerial Imagery 2015

Figure 2. APE and Proposed Demolition Projects on Cannon AFB

DEPARTMENT OF THE AIR FORCE
27TH SPECIAL OPERATIONS CIVIL ENGINEER SQUADRON (AFSOC)
CANNON AIR FORCE BASE NEW MEXICO

SEP 13 2017

Ronald A. Lancaster
Deputy Base Civil Engineer
27 Special Operations Civil Engineer Squadron
506 North Air Commando Way
Cannon AFB, NM 88103

Danny Breuninger, Sr.
Tribal President
Mescalero Apache Tribe
P.O. Box 227
Mescalero, NM 88340

Dear Tribal President Breuninger

The United States Air Force (USAF) and the 27th Special Operations Wing (SOW) under the Air Force Special Operations Command (AFSOC) at Cannon Air Force Base (AFB), New Mexico, have initiated development of an Installation Development Environmental Assessment (IDEA) addressing selected projects from those programmed and reasonably foreseeable during installation development over the next 5 to 10 years (2018–2028). The projects analyzed in this IDEA include demolition construction, and infrastructure, all within Cannon AFB.

The USAF is complying with Section 106 of the National Historic Preservation Act (NHPA) concurrently with development of the EA as recommended by NEPA's implementing regulations, Title 40 Code of Federal Regulations (CFR) Part 1502.25(a). Government-to-government consultation between the USAF and your tribe for this effort is also in accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments;* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002 *Air Force Interactions with Federally-Recognized Tribes*.

The USAF anticipates publishing the complete Draft EA in the fall of 2017 and the Final EA in 2018. Please direct any questions and comments to Ms. Lindsay Dunahee, 27 Special Operations Civil Engineer Squadron, 506 North Air Commando Way, Building 355, Cannon AFB, NM 88103. Comments are encouraged to be sent by email to lindsay.dunahee@us.af.mil. Comments are respectfully requested within 30 days from the date of receipt of this letter.

RONALD A. LANCASTER, GS-14

Attachments: Installation Development Tables and Maps

COMANCHE NATION

27th Special Operations Civil Engineer Squadron (AFSOC)
Attn: Ms. Lindsay Dunahee
506 north Air Commando Way, Building 355
New Mexico 88103

October 19, 2017

Re: Installation Development Environmental Assessment (IDEA)

Dear Ms. Dunahee:

In response to your request, the above reference project has been reviewed by staff of this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, where an indication of ***"No Properties"*** have been identified. (IAW 36 CFR 800.4(d)(1)).

Please contact this office at (580) 595-9960/9618) if you require additional information on this project.

This review is performed in order to identify and preserve the Comanche Nation and State cultural heritage, in conjunction with the State Historic Preservation Office.

Regards

Comanche Nation Historic Preservation Office
Theodore E. Villicana, Technician
#6 SW "D" Avenue, Suite C
Lawton, OK. 73502

B

Air Quality ACAM Summary

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: CANNON AFB
County(s): Curry
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Cannon AFB Installation Development Environmental Assessment

c. Project Number/s (if applicable): HDR Project No. 32430-100343984-3

d. Projected Action Start Date: 10 / 2017

e. Action Description:

This EA evaluates the potential environmental impacts that may arise from implementation of 54 projects identified in the 2016 Cannon AFB IDP, various future funding documents, and approved installation development priorities for the next 5 years (2017–2021).

f. Point of Contact:

Name: Steven Peluso
Title: Senior Air Quality Project Manager
Organization: HDR, Inc.
Email: steven.peluso@hdrinc.com
Phone Number: 571-327-5853

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:

Air Conformity Applicability Model Report
Record of Air Analysis (ROAA)

2017

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.052	100	No
NOx	0.330	100	No
CO	0.313	100	No
SOx	0.001	100	No
PM 10	0.044	100	No
PM 2.5	0.019	100	No
Pb	0.000	100	No
NH3	0.000	100	No
CO2e	53.8		

2018

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.569	100	No
NOx	10.126	100	No
CO	8.456	100	No
SOx	0.018	100	No
PM 10	30.234	100	No
PM 2.5	0.522	100	No
Pb	0.000	100	No
NH3	0.004	100	No
CO2e	1769.0		

2019

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.159	100	No
NOx	11.745	100	No
CO	10.801	100	No
SOx	0.024	100	No
PM 10	8.770	100	No
PM 2.5	0.580	100	No
Pb	0.000	100	No
NH3	0.008	100	No
CO2e	2299.8		

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.423	100	No
NOx	9.528	100	No
CO	10.026	100	No
SOx	-0.487	100	No
PM 10	32.177	100	No
PM 2.5	0.000	100	No
Pb	0.000	100	No
NH3	0.008	100	No
CO2e	2347.1		

Air Conformity Applicability Model Report
Record of Air Analysis (ROAA)

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.197	100	No
NOx	2.437	100	No
CO	4.259	100	No
SOx	-0.864	100	No
PM 10	17.587	100	No
PM 2.5	-0.653	100	No
Pb	0.000	100	No
NH3	0.004	100	No
CO2e	1167.1		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.170	100	No
NOx	6.079	100	No
CO	9.133	100	No
SOx	-0.855	100	No
PM 10	11.155	100	No
PM 2.5	-0.475	100	No
Pb	0.000	100	No
NH3	0.008	100	No
CO2e	2040.5		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.250	100	No
NOx	0.601	100	No
CO	3.163	100	No
SOx	-0.869	100	No
PM 10	-0.240	100	No
PM 2.5	-0.721	100	No
Pb	0.000	100	No
NH3	0.005	100	No
CO2e	679.7		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-1.010	100	No
NOx	-4.135	100	No
CO	-2.686	100	No
SOx	-0.869	100	No
PM 10	-0.922	100	No
PM 2.5	-0.922	100	No
Pb	0.000	100	No
NH3	0.000	100	No
CO2e	-466.5		

Air Conformity Applicability Model Report
Record of Air Analysis (ROAA)

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.428	100	No
NOx	-1.148	100	No
CO	1.845	100	No
SOx	-0.858	100	No
PM 10	4.536	100	No
PM 2.5	-0.819	100	No
Pb	0.000	100	No
NH3	0.002	100	No
CO2e	658.4		

2026

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.463	100	No
NOx	1.917	100	No
CO	6.110	100	No
SOx	-0.848	100	No
PM 10	26.448	100	No
PM 2.5	-0.702	100	No
Pb	0.000	100	No
NH3	0.005	100	No
CO2e	1593.6		

2027

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.172	100	No
NOx	0.469	100	No
CO	4.054	100	No
SOx	-0.854	100	No
PM 10	1.222	100	No
PM 2.5	-0.758	100	No
Pb	0.000	100	No
NH3	0.005	100	No
CO2e	1020.3		

2028

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.273	100	No
NOx	-2.823	100	No
CO	-0.718	100	No
SOx	-0.865	100	No
PM 10	-0.324	100	No
PM 2.5	-0.875	100	No
Pb	0.000	100	No
NH3	0.002	100	No
CO2e	-57.7		

Air Conformity Applicability Model Report
Record of Air Analysis (ROAA)

2029 - (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-1.032	100	No
NOx	-4.255	100	No
CO	-2.841	100	No
SOx	-0.869	100	No
PM 10	-0.929	100	No
PM 2.5	-0.929	100	No
Pb	0.000	100	No
NH3	0.000	100	No
CO2e	-492.1		

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.

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Steven Peluso, Senior Air Quality Project Manager

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