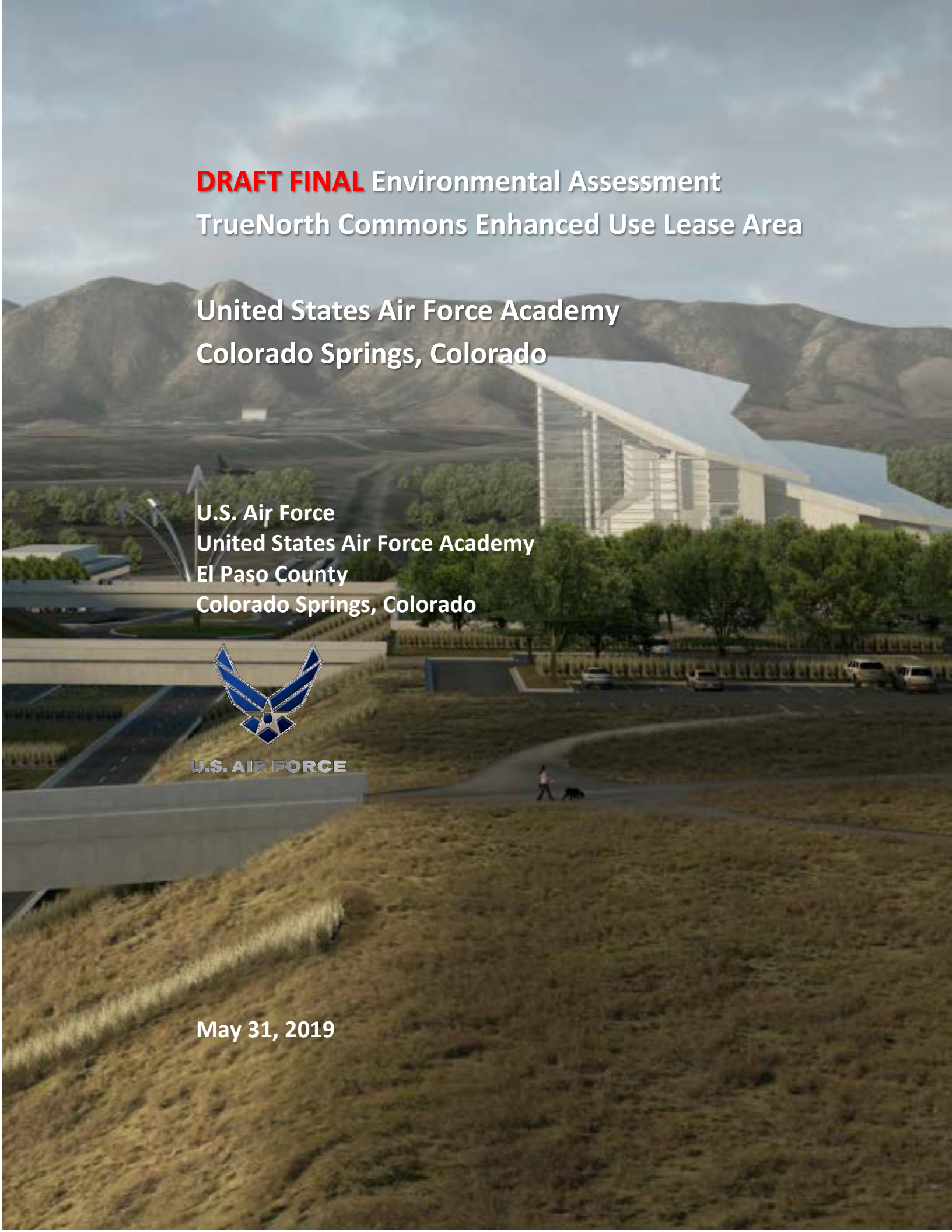

DRAFT FINAL Environmental Assessment
TrueNorth Commons Enhanced Use Lease Area

United States Air Force Academy
Colorado Springs, Colorado

U.S. Air Force
United States Air Force Academy
El Paso County
Colorado Springs, Colorado

U.S. AIR FORCE

May 31, 2019

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DRAFT FINAL Environmental Assessment

TrueNorth Commons Enhanced Use Lease Area

United States Air Force Academy
El Paso County
Colorado Springs, Colorado

Prepared for:
U.S. Department of the Air Force
U.S. Air Force Academy
Colorado Springs, Colorado

Prepared by:
Matrix Environmental Services, LLC
2435 Research Parkway, Suite 300
Colorado Springs, Colorado 80920

May 2019

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Privacy Advisory

This Draft EA is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR Parts 1500-1508), and 32 CFR Part 989, Environmental Impact Analysis Process (EIAP). The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

Public commenting allows the Air Force to make better, informed decisions. Letters or other written or oral comments provided may be published in the Final EA. Providing personal information is voluntary. Any personal information provided will be used only to identify your desire to make a statement during the public comment portion of any public meetings or hearings 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 specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

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DRAFT FINDING OF NO SIGNIFICANT IMPACT
TRUENORTH COMMONS ENHANCED USE LEASE AREA

Pursuant to provisions of the National Environmental Policy Act (NEPA), Title 42 United States Code (USC) Sections 4321 to 4347, implemented by Council on Environmental Quality (CEQ) Regulations, Title 40, Code of Federal Regulations (CFR) Parts 1500-1508, and 32 CFR Part 989, Environmental Impact Analysis Process (EIAP), the United States Air Force (Air Force) assessed the potential environmental consequences associated with the United States Air Force Academy (USAFA) entering into an Enhanced Use Lease (EUL) agreement with Blue & Silver Development Partners, LLC (Blue & Silver) to construct the TrueNorth Commons that would include the new Gateway Visitor Center and supporting commercial development on 52 acres of undeveloped open space, non-excess real property at USAFA in Colorado Springs, El Paso County, Colorado.

The Environmental Assessment (EA), incorporated by reference into this finding, analyzes the potential environmental consequences of activities associated with design, construction, and operation of the TrueNorth Commons, a mixed-use commercial complex, in the proposed EUL Area, and provides environmental protection measures to avoid or reduce adverse environmental impacts.

The EA considers all potential impacts of the action and no action alternatives and considers cumulative environmental impacts within the Region of Influence (ROI).

Proposed Action (Preferred Alternative)
USAFA would enter into an EUL agreement for the completion of the TrueNorth Commons commercial development project, an area of commercial development located within USAFA property, but outside the USAFA secured perimeter, near the North Gate entrance to USAFA that would be highlighted by a 32,000 square foot Visitor Center, a luxury destination hotel and conference center, a business hotel, office space, open space, and supporting retail/recreational development.

Alternative 1, Eliminated from Consideration
USAFA would renovate and update the existing 31,984 square foot Barry Goldwater Visitor Center (BGVC), located at Building 2346, within the USAFA secured perimeter. The renovation of the existing facility was removed from further consideration because there was no opportunity to change the existing footprint, which limits the options for the renovation to address long-term sustainment of visitor programs; and was not the best choice for safe and reliable access due to the location within the controlled perimeter of the base because of varying levels of security that change as needed. Following evaluation in the February 2014 Business Care Analysis (BCA), this alternative

was not selected as the Preferred Alternative (Proposed Action) in the subsequent AF Form 813.

Alternative 2, Eliminated from Consideration

USAFA would construct a new 25,000 square foot Visitor Center at the current location of Falcon Stadium, located at 2196 Field House Drive, within the USAFA secured perimeter. A new Visitor Center at Falcon Stadium was eliminated from further consideration because the construction would require extensive site work that would conflict with ongoing events and activities at the stadium, and the options for development would be limited due to the presence of existing facilities and limited availability of land area. Operation of the Visitor Center at the stadium would increase the potential for user conflicts based on a substantially increased number of visitors at the stadium for multiple uses and purposes, and substantially increased levels of traffic on Stadium Boulevard entering stadium access roads. In addition, the site was not a viable choice for safe and reliable access due to the location within the controlled perimeter of the base, which may be subject to varying levels of security that change as needed. Following evaluation in the February 2014 BCA, this alternative was not selected as the Preferred Alternative (Proposed Action) in the subsequent AF Form 813.

No Action Alternative

Under the No Action Alternative, the Preferred Alternative (Proposed Action) would not occur and the BGVC would continue to operate within the USAFA secured perimeter. USAFA would not be able to optimize the value of existing real property assets to increase tourism at USAFA and the Pikes Peak Region.

SUMMARY OF FINDINGS

The analyses of the affected environment and environmental consequences of implementing the Preferred Alternative presented in the EA concluded that by implementing standing environmental protection measures and operational planning, the Air Force would be in compliance with all terms and conditions and reporting requirements for implementation of the reasonable and prudent measures stipulated by the United States Fish and Wildlife Service (USFWS) in the Biological Opinion issued February 19, 2019, and with the conditions stipulated in the Programmatic Agreement with Colorado SHPO signed _____ and the Approved Jurisdictional Determination (AJD) issued by the US Army Corps of Engineers (USACE) on May 3, 2019.

The Air Force has concluded that no significant adverse effects would result to the following resources as a result of the Preferred Alternative (Proposed Action) : land use, aesthetics, noise, air quality, water, safety and occupational health, hazardous materials, biological, earth,

utilities/infrastructure, socioeconomic, transportation and traffic. The Air Force has also resolved the potential adverse effect of the Preferred Alternative (Proposed Action) through the establishment of a Programmatic Agreement for the project, which will ensure continued compliance with NHPA. As a stipulation of the EUL agreement and the project Programmatic Agreement, each building associated with the Preferred Alternative (Proposed Action) would undergo review and approval with SHPO and the Design Review Board prior to construction; therefore, for the purposes of this EA, the evaluation of potential adverse effects to cultural resources only considers the lease associated with the Preferred Alternative (Proposed Action) and does not attempt to evaluate any potential adverse impacts from the proposed development. Therefore, when considering only the lease associated with the Proposed Action, no significant adverse effects would result to cultural resources as a result of the Air Force leasing the proposed EUL Area to Blue & Silver. Additionally, no significant adverse cumulative impacts would result from activities associated with the Proposed Action when considered with past, present or reasonably foreseeable future projects.

Cultural Resources: In compliance with NHPA, the Air Force has completed the Section 106 review process for the action of leasing the proposed EUL Area's 52 acres to Blue & Silver with the Colorado SHPO and all stakeholders. As a result of the Section 106 consultation, various agencies and tribes were engaged, and a project Programmatic Agreement was established between USAFA, Colorado SHPO and Blue & Silver to resolve any adverse effects that could result from the lease and associated unknowns, ensuring NHPA continues to be upheld. While the impact to cultural resources from the physical development of the TrueNorth Commons is not addressed within this EA, each building associated with the Proposed Action would undergo review with SHPO and the Design Review Board prior to construction; therefore, any potential adverse effects associated with construction of the TrueNorth Commons facilities would be managed through the Design Review Board approval process and mitigated by the appropriate parties following review of detailed design plans, as stipulated in the EUL agreement and the project Programmatic Agreement.

Biological (Natural) Resources: A Biological Assessment (BA) dated January 2019 concluded that the Proposed Action may affect, and is likely to adversely affect, Preble's Meadow Jumping Mouse (PMJM) and its habitat with long-term impacts to PMJM being negligible since the majority of proposed habitat disturbance would be temporary. A Section 7 consultation with USFWS concluded with a Biological Opinion dated February 19, 2019 which agrees with the BA determinations and stipulates the mitigation measures that must be implemented in the identified low quality PMJM habitat during implementation of the Proposed Action.

Wetlands: A wetland delineation completed in October 2018 identified approximately 0.873 acres of wetlands that would be impacted or eliminated by development activities associated

with implementation of the Proposed Action; including approximately 0.59 acres within Parcels A, B, and D. The delineation report was submitted to the USACE along with a request for an approved jurisdictional determination. Following review of the delineation report, a site visit by USACE staff, and a 30-day EPA review period, an Approved Jurisdictional Determination (AJD) was finalized for the proposed EUL Area on May 3, 2019. The AJD designates all wetlands identified within the EUL Area as non-jurisdictional. As a result, mitigation and a CWA Section 404 permit are not required for the Proposed Action.

FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)

Pursuant to Executive Order 11990, Air Force regulation 32 CFR § 989.14(g), Air Force delegations of authority and in consideration of the findings of the EA, incorporated herein, I find that there is no practicable alternative to implementing the Proposed Action in wetlands and that the Proposed Action includes all practicable measures to minimize harm to wetlands.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Based on my review of the facts and analyses contained in the attached EA, conducted under the provisions of NEPA, CEQ Regulations, and 32 CFR Part 989, I conclude that the Proposed Action, entering into an EUL agreement for the completion of the TrueNorth Commons commercial development project, would not have a significant environmental impact, either by itself or cumulatively with other known projects. Accordingly, an Environmental Impact Statement is not required. The signing of this Finding of No Significant Impact completes the environmental impact analysis process.

_____ _____

CARLOS R. CRUZ-GONZALEZ, DAFC Date
Director of Logistics, Engineering & Force Protection

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

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ACRONYMS AND ABBREVIATIONS

ACAM	Air Conformity Applicability Model
ACBM	Asbestos Containing Building Materials
ac-ft	acre-feet
ACHP	Advisory Council on Historic Preservation
ADR	Average Daily Rate
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFI	Air Force Instruction
AICUZ	Air Installation Compatible Use Zone
AIRFA	American Indian Religious Freedom Act
AJD	Approved Jurisdictional Determination
AMP	Activity Management Plans
AMR	American Medical Response
AMSL	above mean sea level
APCD	Air Pollution Control Division
APE	Areas of Potential Effect
APZ	Accident Potential Zone
ARPA	Archaeological Resources Protection Act
AST	Above-ground storage tank
AT&SF	Atchison Topeka and Santa Fe (Railroad)
BA	Biological Assessment
BASH	Bird/Wildlife Aircraft Strike Hazards
BCA	Business Case Analysis
BCC	Birds of Conservation Concern
BCR	Bird Conservation Regions
BGEPA	Bald and Golden Eagle Protection Act
BGVC	Barry Goldwater Visitor Center
bgs	below ground surface
BID	Business Improvement District
BLM	Bureau of Land Management
Blue & Silver	Blue & Silver Development Partners, LLC
BMPs	Best Management Practices
BO	Biological Opinion
C4C	City for Champions
CAA	Clean Air Act
CCR	Code of Colorado Regulations
CDLE	Colorado Department of Labor and Employment
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment

CDNR	Colorado Department of Natural Resources
CDW	Colorado Division of Wildlife
CEQ	Counsel on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESQG	conditionally exempt small quantity generator
cfs	cubic feet per second
CFR	Code of Federal Regulations
CH4	methane
City	City of Colorado Springs
CNHP	Colorado National Heritage Program
CO	Carbon monoxide
CO2	Carbon dioxide
CPW	Colorado Parks and Wildlife
CRI	Cultural Resources Inventory
CRM	Cultural Resources Manager
CSFD	Colorado Springs Fire Department
CSU	Colorado Springs Utilities
CWA	Clean Water Act
CZ	Clear Zone
dB	decibels
dBA	A-weighted decibels
Developers	Blue & Silver Development Partners
DNL	day-night average sound level
DoD	Department of Defense
DoDI	Department of Defense Instruction
DOE-EIA	Department of Energy – Energy Information Administration
DOT	United States Department of Transportation
DP	Design Point
DRB	Design Review Board
D&RG	Denver and Rio Grande (railroad)
EA	Environmental Assessment
EDB	Extended Detention Basin
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EO	Executive Order
EPA	United States Environmental Protection Agency
EPCPH	El Paso County Public Health
EPS	Economic & Planning Systems
ERO	ERO Resources Corporation
ERP	Environmental Restoration Program

ESA	Endangered Species Act
EUL	Enhanced Use Lease
FDP	Facility Development Plan
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
ft	feet
ft/ft	vertical feet per horizontal feet
ft/s	feet per second
GHG	greenhouse gases
GLO	General Land Office
HAP	Hazardous Air Pollutant
HASP	Health and Safety Plan
HAZMAT	Hazardous Materials
HRO	Highest Ranked Offeror
HSWA	Hazardous and Solid Waste Amendments
HWMP	Hazardous Waste Management Plan
Hz	Hertz
I-25	Interstate 25
IAR	Interstate Access Request
ICRMP	Integrated Cultural Resources Management Plan
IDP	Installation Development Plan
IF	Isolated Finds
INRMP	Integrated Natural Resources Management Plan
INWMP	Integrated Noxious Weed Management Plan
IPaC	Information, Planning, and Consultation System
IRP	Installation Restoration Program
ITE	Institute of Transportation Engineers
kg	kilograms
lbs	pounds
L_{dn}	day-night average sound level
L_{eq}	equivalent continuous sound level
LOS	Level of Service
LQGs	large quantity generators
Matrix	Matrix Design Group. Inc./Matrix Environmental Services, LLC
MBTA	Migratory Bird Treaty Act
MDA	Master Development Agreement
MGD	million-gallons per day
MMP	Materials Management Plan

MMRP	Military Munitions Response Program
MOA	Memorandum of Agreement
mph	miles per hour
MS4	Municipal Separate Storm Sewer System
N2O	Nitrous oxide
NAGPRA	Native American Graves Protection and Repatriation Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NH_3	Ammonia
NHL	National Historic Landmark
NHLD	National Historic Landmark District
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_2	Nitrogen dioxide
NOA	Notice of Availability
NOx	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O3	Ozone
OAHP	Office of Archaeology and Historic Preservation
OPS	CDLE Division of Oil and Public Safety
OSHA	Occupational Safety and Health Administration
P4	public-public and public-private initiatives
PA	Programmatic Agreement
PCA	Potential Conservation Area
PCB	polychlorinated biphenyls
Pb	Lead
PLSS	Public Land Survey System
PM2.5	Particulate matter less than or equal to 2.5 micrometers in diameter
PM10	Particulate matter less than or equal to 10 micrometers in diameter
PMJM	Preble's Meadow Jumping Mouse
POL	petroleum, oil and lubricants
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCP	reinforced concrete pipe
RCRA	Resource Conservation and Recovery Act
RFQ	Request for Qualifications
ROI	Region of Influence

ROW	right-of-way
RPW	Relatively Permanent Water Body
RTA	Regional Tourism Act
SDDCTEA	Surface Deployment and Distribution Command Transportation Engineering Agency
SDL	Site Development Lease
SDWA	Safe Drinking Water Act
SF	Square Feet
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO2	Sulfur dioxide
SOP	Standard Operating Procedure
SPCC	Spill Prevention Control and Countermeasure
SQGs	small quantity generators
SWCA	SWCA, Incorporated
SWMP	Stormwater Management Plan
SWMU	Solid Waste Management Unit
SWPPP	Storm Water Pollution Prevention Plan
T	tons
TCM	Traffic Criteria Manual
T&E	Threatened and Endangered
THPO	Tribal Historic Preservation Officers
TIF	Tax Incremental Financing
TIS	Traffic Impact Study
TMDL	total maximum daily loads
TNW	Traditional Navigable Waters
TPY	tons per year
TSCA	Toxic Substances Control Act
UCCS	University of Colorado - Colorado Springs
UFC	United Facilities Criteria
µg/m^3	micrograms per cubic meter
ULTO	Ute ladies'-tresses orchid
µm	micrometers
US	United States
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USAFA	U.S. Air Force Academy
USC	United States Code
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank
VOC	Volatile organic compound

WQCC	Water Quality Control Commission
WQCV	Water Quality Capture Volume
WWTP	Waste Water Treatment Plant
ZCTA	Zip Code Tabulation Areas

1.0 PURPOSE AND NEED

1.1 Introduction

USAFA has determined that to ensure safe and reliable access to visitors and AF personnel and to enhance the visitor experience to complement the AF Academy's recruiting and outreach efforts, a new Visitor Center is needed. In response, United States Department of the Air Force (USAF) proposes to lease approximately 52 acres of land to Blue & Silver Development Partners, LLC (Blue & Silver) for development, construction, and operation of a mixed-use commercial development that includes a new Air Force Academy Visitor Center (Gateway Visitor Center). The property would be leased to Blue & Silver by the USAFA and Air Force Civil Engineer Center (AFCEC) in accordance with the United States (US) Enhanced Use Lease (EUL) Program under authority of Title 10 US Code (USC) Section 2667. This parcel is currently underutilized open space, non-excess real property along the eastern boundary of USAFA and near the North Security Gate and I-25 at North Gate Boulevard, as shown in **Figure 1.1**. The EUL area is currently vacant except for a parking area for public access to the New Santa Fe Regional Trail. The proposed development (TrueNorth Commons) would include improved access to the New Santa Fe Regional Trail and would be highlighted by the iconic Gateway Visitor Center (Parcel A), a luxury destination hotel and conference center (Parcel B), a business hotel (Parcel B), office space (Parcel D), open space (Parcel E), and supporting retail/recreational development (Parcel C). **Figure 1.2** includes the layout of the EUL Area and identifies parcels within the proposed development designated for various uses.

Figure 1.1: Location of USAFA and the Proposed EUL Area

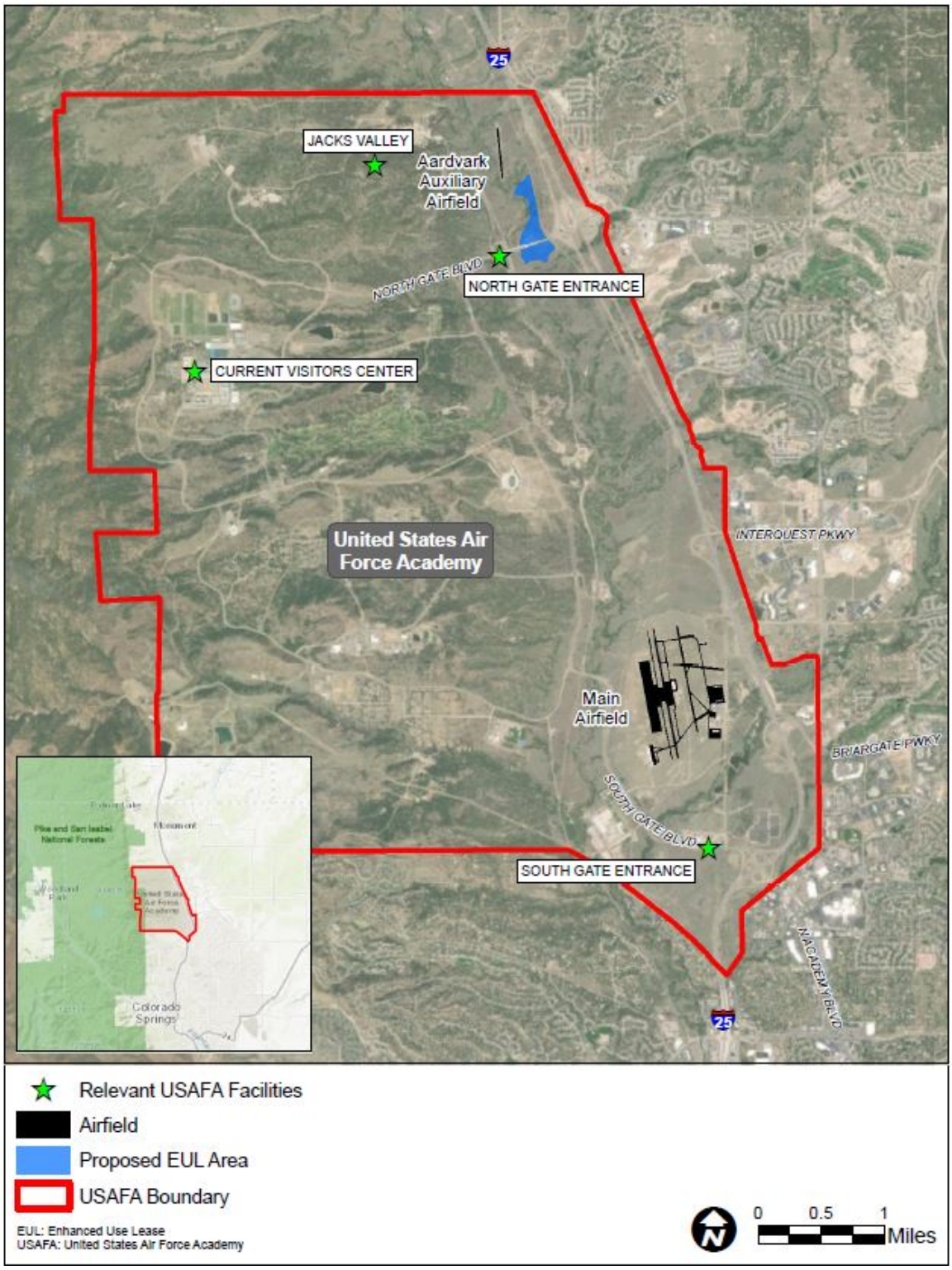

Figure 1.2: Proposed EUL Area

1.2 Background

In 2018, USAFA released a draft Installation Development Plan (IDP) which was undertaken to determine how and where development should occur to best meet the ongoing mission needs and the long-term USAFA vision (BMCD, 2018). This IDP is expected to be finalized in 2019 and USAFA intends the IDP be a guidance document for all development decisions at USAFA for the next two decades. Applying the guidelines in the IDP will assist USAFA in meeting the USAF goals for mission capability, sustainability, readiness and modernization. In addition, the IDP was created in cooperation with key stakeholders and in accordance with Air Force Instruction (AFI) 32-7062, *Comprehensive Planning* and the applicable the United Facilities Criteria (UFC) 2-100-01, *Installation Master Planning*.

As part of the development of USAFA's Strategic Vision in the IDP, a set of specific goals and objectives were identified. Goal 5 on that list is to "Improve & expand outreach through the enhanced visitor experience." (BMCD, 2018) The first objective identified for meeting this goal is to relocate the USAFA visitor center to the North Gate. In the process of evaluating future development plans, various constraints to development were evaluated and a group of planning districts were identified that serve to guide development in a way that is compatible with established land use patterns.

The IDP further evaluates USAFA projects identified in separate Activity Management Plans (AMP) and evaluates each for alignment with the IDP goals. Projects that align are categorized as short, mid or long range. The visitor center project meets the criteria of alignment with IDP goals and is categorized as a short-range project. Finally, the plan recognizes that funding is a critical element for successful completion of any project and recognizes that traditional Air Force funding sources are limited for a project such as the visitor center. To meet this challenge, the Facility Development Plan (FDP) portion of the IDP specifically identifies public-public and public-private (P4) initiatives as an avenue to engage support from the community and from donors to achieve IDP goals. The visitor center relocation project is identified in the FDP as an EUL opportunity.

The EUL program allows the US Department of Defense (DoD) and its branches and agencies to, under the authority of 10 USC §2667, lease real property under its control that is not needed for public use and is not excess property, and which would meet the specified lease conditions in the statute. This mechanism then allows a private party to use development proceeds resulting from development on the leased property to support a goal stipulated by the DoD. In this case, the goal is the relocation of the visitor center and would be pursued through a Master Development Agreement (MDA) and Site Development Lease (SDL) subject to completion of negotiation requirements including this EA. Requirements, authorities, and procedures for Air Force real property transactions are established in AFI 32-9002, *Use of Real Property Facilities*, and AFI 32-9003, *Granting Temporary Use of Air Force Real Property*.

In alignment with the P4 strategy, TrueNorth Commons would provide much needed and unique amenities to USAFA, its associates, and the growing local market in northern Colorado Springs. The development will include additional hotel rooms and conference space close to the USAFA property for families, tourists, USAFA contractors, and prospective students; desirable office space capturing USAFA's unparalleled view of Pikes Peak; and commercial/recreational opportunities including an indoor skydiving facility where cadets could train with convenience. Most importantly, these ancillary developments and project support from the City of Colorado Springs (City) approximating $13.25 million in funding would allow for the development's most prominent element, the Gateway Visitor Center, which would spotlight the honor and contributions of cadets to the US Air Force. The development's facilitation of the new Visitor Center would meet USAFA's need to provide adequate visitor facilities and experiences in an environment of increased security requirements, encourage an increased interest and tourism at USAFA and the Pikes Peak Region, and support USAFA's strategic goal of optimizing its existing real property asset value. Revenues generated from the development would provide an economic benefit to the City and would also provide USAFA with an additional income source, which would serve as long-term support for USAFA's mission.

For the purpose of this EA, the visitor center relocation includes leasing of 52 acres of USAFA property under an EUL to Blue & Silver for the design, construction, and operation of the 36-acre TrueNorth Commons development complex, which includes the relocated USAFA Gateway Visitor Center. The development footprint is based on the current scope and size of the proposed Gateway Visitor Center and the supporting commercial development required to make the project economically feasible for USAFA. The following subsections provide additional information on the economic conditions and regional development strategy that is instrumental in the success of the visitor center relocation effort.

1.2.1 Economic Considerations

As identified in an initial fiscal analysis, commercial market conditions in Colorado Springs are strong, particularly in the north submarket, bisected by Interstate 25 (I-25) extending from the northern part of Colorado Springs to the southern border of Monument, Colorado (north submarket). Notably, occupancy levels for lodging, retail, and office uses are stronger in this submarket than the overall Colorado Springs market, and have been escalating at generally higher rates than the overall Colorado commercial market.

Driven by population growth and increased household incomes, the demand for retail in the north submarket is also stronger than it is for the rest of the Colorado Springs market area. A 10-year historical analysis (2007-2017) indicates that vacancies have been lower (and are trending lower) in the north submarket since the 2008 recession. Market equilibrium, the threshold at which the supply of inventory and rates of turnover are insufficient to meet market demand for new space, generally sits between 8% and 12% for commercial markets. Research and analysis

of the north submarket show that commercial vacancies have averaged below 5% since the first quarter of 2014. This has led to rising lease rate pressures and more demand for commercial space.

Demand for office space is also on the rise, driven by employment growth in the north submarket area. Following the recession of 2008, vacancy rates in office space spiked, and lease rates dropped considerably. The economic recovery following the recession combined with growing industry and a rise in population has resulted in steady absorption of the existing inventory to the point where vacancies have averaged below 10% since the second quarter of 2016.

1.2.2 City for Champions Initiative

TrueNorth Commons is being developed under a public-private partnership between Blue & Silver, the City, El Paso County and USAFA. This project is part of Colorado Spring's City for Champions (C4C) Regional Tourism Act initiative to construct four venues with a goal of attracting tourists to the Pikes Peak Region.

In July 2013, the City began its pursuit of supplemental funding with the Regional Tourism Act (RTA) of the Colorado Office of Economic Development and International Trade. The RTA provides a financing mechanism for attracting, constructing, and operating large scale regional tourism projects which, in turn, would promote diversification of the state's economic base and attract non-local investment and revenue. The four C4C venues that would receive funding under the RTA include:

- *The USAFA Gateway Visitor Center*: "A destination for engaging visitor experience, providing a way for visitors to experience the honor and contributions of Cadets to the US Air Force."
- *The United States Olympic Museum*: "An iconic destination museum dedicated to highlighting the values, historic moments, and collective memories of the Olympic and Paralympic movement."
- *Colorado Sports and Event Center*: "A destination for professional and aspiring athletes, this new, one-of-a-kind stadium would host regional and national sporting events associated with the Olympic movement in Colorado Springs.
- *Sports Medicine and Performance Center at UCCS:* "The Sports Medicine and Performance Center at the University of Colorado - Colorado Springs has the ability to draw out-of-state patients to Colorado Springs for acute sport-related healthcare."

In addition to providing four unique venues that would celebrate and accentuate the Pikes Peak Region, the C4C initiative is expected to significantly boost the region's annual tourism industry, attract an additional 1.2 million visitors each year, increase retail sales by $140 million annually,

create more than 5,100 new jobs, and increase sales tax revenue by more than $6.0 million annually.

The C4C initiative will be funded, in part, by $120.5 million in sales tax money provided over 30 years under the Regional Tourism Act (RTA). USAFA would receive approximately $13.25 million for the TrueNorth Commons development as part of the C4C initiative. TrueNorth Commons is the northern most of the four tourism venues proposed under C4C and is predicted to enhance and improve the "gateway" to Colorado Springs, attracting millions of visitors per year.

1.3 Purpose and Need for the Action

The statement of purpose developed by USAFA during the EIAP Request for Environmental Impact Analysis (Form 813) for the Visitor Center (USAFA, 2014) is to provide adequate facilities for the development, operation, and long-term sustainment of visitor programs at the US Air Force Academy." The Form 813 evaluation also stated that the need for this project is "To ensure safe and reliable access to visitors and AF personnel, and to enhance the visitor experience to complement the AF Academy's recruiting and outreach efforts."

The USAFA has completed an extensive planning process described in the IDP, that identified the need to provide facilities and experiences that improve and expand outreach through an enhanced visitor experience beyond that provided by the current visitor center (BMCD, 2018). The USAFA further identified the property proposed for an EUL as a preferred location for the relocation of the visitor center.

As identified during the IDP planning process, development under the EUL process would promote the efficient and economical use of real property assets at USAFA pursuant to the directives of Executive Order EO13327, *Federal Real Property Asset Management (EO 13327)*. In seeking development of this property, USAFA is also pursuing objectives outlined in the 14 February 2007, Department of the Air Force memorandum titled: *Pursuing "Value-Based" Transactions Involving Air Force Real Property Assets*. This memorandum directs the Air Force to optimize the value of real property assets using authorized tools such as the EUL program.

1.4 Scope of the Environmental Assessment

The National Environmental Policy Act (NEPA) requires federal agencies to consider environmental consequences in their decision-making process. The Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA at Title 40 of the Code of Federal Regulations (CFR) Parts 1500-1508 (40 CFR Parts 1500-1508) mandate that all federal agencies use a systematic, interdisciplinary approach to environmental planning and the evaluation of actions that might affect the environment. The Air Force Environmental Impact Analysis Process (EIAP) is accomplished through adherence to CEQ regulations and 32 CFR Part

989. These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action.

This EA is intended to provide the USAFA decision-maker and the public with the information required to understand the potential environmental consequences of developing, constructing, and operating TrueNorth Commons within the proposed EUL Area. Development of the proposed 36-acre TrueNorth Commons mixed-use development complex would only commence upon satisfactory completion of this EA and issuance of a Finding of No Significant Impacts (FONSI) and any required Findings of No Practicable Alternative (FONPA) for construction in either wetlands or floodplains, as defined in EO 11990, *Protection of Wetlands*, or EO 11988, *Floodplain Management*. Additionally, if the EA cannot sufficiently analyze the proposed project, or if the EA process identifies potentially significant impacts, an Environmental Impact Statement (EIS) would need to be conducted and the project would only proceed upon its satisfactory completion and issuance of a Record of Decision.

This document has been prepared in accordance with the NEPA of 1969 (42 USC 4321 et seq.), the CEQ's regulations for implementation of NEPA procedures (40 CFR Parts 1500-1508), and the Air Force's EIAP policy and procedures (32 CFR Part 989).

1.5 Resources Retained for Further Analysis

Resources that have a potential to be impacted from the Proposed Action are considered in detail in this EA in order to provide the Air Force decision-maker with sufficient evidence and analysis pursuant to 40 CFR Part 1508, EA, and 32 CFR Part 989, EIAP, on whether to approve a FONSI or prepare an EIS. The resources analyzed in this EA are air quality, water resources, biological resources, cultural resources, hazardous materials and wastes, geology and soils, land use, noise, transportation, utilities, socioeconomics, and personal and occupational health and safety. These resources are described in detail in Section 3.0, *Affected Environment,* and the potential environmental consequences relative to these resources are evaluated in Section 4.0, *Environmental Consequences.*

1.6 Resources Dismissed from Further Consideration

The following resources are eliminated from further considerations because there would be no effects from the proposed action or the effects of the Proposed Action would be insignificant. The details and rationale for dismissing each resource from further evaluation are provided in the following subsections.

1.6.1 Environmental Justice

All federal agencies are required by EO 12898 to incorporate environmental justice into their missions. The requirement includes identifying and addressing any disproportionately high adverse human health or environmental impacts of federal agency programs on minorities and low-income populations. The EUL is entirely within USAFA property and the there are no environmental justice populations present on the USAFA. The property immediately adjacent to the EUL property is either dedicated open space or transportation right-of-way including Interstate Highway 25. There would be minor impacts to utilities and less than significant impacts to transportation as a result of the Proposed Action, but these would not result in significant adverse impacts to human populations- minority, low income, or otherwise. Therefore, Environmental Justice is eliminated from detailed analysis in this EA.

1.6.2 Airspace and Range Management

The Proposed Action would be implemented entirely within USAFA installation boundaries and would not involve or affect flying operations at the active USAFA airfield, nor the use of airspace by USAFA aircraft. In addition, USAFA designated ranges are at least 10,000 feet from the EUL property and activities resulting from the Proposed Actions do not involve or affect range operations. As a result, USAFA anticipates no short or long-term adverse impacts, and this resource area was not carried forward for detailed analysis. There would be no impacts to Airspace and Range Management.

1.6.3 Air Installation Compatible Use Zone

The Air Installation Compatible Use Zone Study (AICUZ) includes areas immediately adjacent to an air field installation that are managed for compatible uses (USAFA, 2005). The Proposed Actions would be implemented entirely within USAFA installation boundaries and are outside of critical AICUZ use zones for the active USAFA airfield. The Aardvark airfield located northwest of the EUL property was closed in 2008 and there are no current operations that require an AICUZ. The short-term construction and long-term use activities would not violate land use restrictions imposed by the AICUZ and as a result, USAFA anticipates no short or long-term impacts to airfield operation. This resource area was not carried forward for detailed analysis.

1.6.4 Safety & Occupational Health – Mishaps, BASH, Explosive/Ordnance

Typical safety issues at Air Force installations include aircraft mishaps (i.e., crashes), strikes between aircraft and animals or birds, ordnance and explosives safety, fire management and personnel safety and occupational health. The Proposed Action would not involve or affect flying operations at the USAFA airfield. Cadet training range locations are more than 10,000 feet from the EUL property and the proposed action will not involve use of ordnance or explosives therefore there is no impact on ordnance and explosives safety. As a result, the Air Force

anticipates no short or long-term adverse impacts on mishaps, Bird/Wildlife Aircraft Strike Hazards (BASH), and explosive/ordnance safety, and these aspects of safety and occupational health were not carried forward for detailed analysis. The remaining elements of Safety and Occupational Health are carried forward and evaluated in Sections 3.5 and 4.5.

1.6.5 Security

The EUL Area is located outside the secure perimeter of USAFA and none of the design elements will result in a change to that perimeter. While the proposed action would increase the number of public in the area immediately outside the security perimeter and potentially increase the number of public passing through the North Security Gate these are both intended consequences that were considered acceptable to USAFA prior to offering the property for an EUL (see Section 2.3). Since there are no changes to the North Security Gate or the associate perimeter resulting from the proposed action there are no impacts to the Security resource. This resource is not carried forward for detailed analysis.

1.6.6 Hazardous Materials and Waste

1.6.6.1 Hazardous Substances

"Hazardous substances" are defined in Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund) Section 101(14) and are codified in 40 CFR § 302.4 to include:

- Any element, compound, mixture, solution, or substance designated pursuant to Section 102 of CERCLA.
- Any hazardous substance designated under Section 311(b)(2)(A) of the CWA, or any toxic pollutant listed under Section 307(a) of the CWA. There are more than 400 substances designated as either hazardous or toxic under the CWA.
- Any hazardous waste having the characteristics identified under or listed pursuant to Section 3001 of the RCRA.
- Any HAP listed under Section 112 of the CAA, as amended. There are over 200 substances listed as HAPs under the CAA.
- Any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action pursuant to Section 7 of the Toxic Substances Control Act (TSCA).

The definition of hazardous substance specifically excludes petroleum, including crude oil and any fraction thereof, unless specifically listed (40 CFR § 300.5). Spills of oil and other petroleum products are regulated under the CWA when in areas where they will, or eventually could, enter waterways.

As the proposed action does not involve the demolition, renovation, or modification of structures or infrastructure that could contain asbestos containing materials (ACM), lead based paints (LBP), or polychlorinated biphenyls (PCBs), no adverse effects associated with potential releases of these toxic materials is likely and this resource is not carried forward for detailed analysis.

1.6.6.2 Environmental Restoration and Military Munitions Response Programs

The ERP is used by the Air Force to identify, characterize, and remediate potentially hazardous material disposal sites on DoD property prior to 1984. Past procedures for managing and disposing wastes, although accepted at the time, resulted in contamination of the environment. The ERP has established a process to evaluate past disposal sites, control the migration of contaminants, identify potential hazards to human health and the environment, and remediate the sites to allow for the beneficial reuse of the property. ERP sites include landfills, underground waste fuel storage areas, solid waste management units (SWMUs) and maintenance generated wastes. The Military Munitions Response Program (MMRP) is designed to clean up discarded military munitions, unexploded ordnance, and their chemical residues at closed historic ranges and munitions disposal sites.

USAFA has 13 closed ERP sites and one closed MMRP site for which No Further Action is recommended. In addition, one MMRP site (Abandoned Skeet Range or Site -TS014) and two ERP sites (Landfill Numbers 1 and 2 referred to as ERP Sites 6 and 7, respectively) have ongoing corrective action or have land use controls associated with them. The ERP Sites include two former municipal landfills located north and south of USAFA's Main Airfield, which USAFA closed under CERCLA with oversight from CDPHE and EPA; however, as a condition of closure, no development or construction is permitted at these locations.

The Proposed Action does not involve development or construction on any of USAFA's closed ERP or MMRP sites and is not within the ROI for potential hazardous materials and wastes from ERP/MMRP sites; therefore, ERP/MMRP sites are not carried forward for detailed analysis.

1.7 Cooperating Agency and Intergovernmental Coordination/Consultations

1.7.1 Cooperating Agency

As defined in 40 CFR 1508.6, a potential cooperating agency is any other federal agency which has jurisdiction by law or special expertise with respect to any environmental issue. In special instances, non-federal entities may seek and be granted cooperating agency status. For this Proposed Action, no cooperating agencies were identified.

1.7.2 Interagency and Intergovernmental Coordination and Consultations

EO 12372, Intergovernmental Review of Federal Programs, requires intergovernmental notifications prior to making any detailed statement of environmental impacts. Federal, state, and local agencies with jurisdiction that could be affected by the alternative actions were notified and consulted during the development of this EA. **Appendix A** contains the list of agencies consulted during this analysis and copies of correspondence.

1.7.3 Government to Government Consultations

EO 13175, Consultation and Coordination with Indian Tribal Governments (6 November 2000), 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. To comply with legal mandates, federally recognized tribes that are affiliated historically with the USAFA 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 coordination process is distinct from NEPA consultation or the interagency and intergovernmental coordination processes and requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of intergovernmental consultations. The USAFA point-of-contact for Native American tribes is the Installation Commander. The USAFA point-of-contact for consultation with the Tribal Historic Preservation Officer (THPO) and the Advisory Council on Historic Preservation is the Cultural Resources Manager. The Native American tribal governments that were coordinated with regarding this action are listed in **Appendix A**.

1.8 Public and Agency Review of the EA

A Notice of Availability (NOA) of the Draft EA and Draft FONSI/FONPA was published in the newspapers of record (listed below), announcing the availability of the EA for review on June 1, 2019 and June 2, 2019. The NOA invited the public to review and comment on the Draft EA and Draft FONSI/FONPA. The Draft EA and Draft FONSI/FONPA were made available for a 30-day public comment period to solicit the input of the public, agencies, and other interested parties. The public and agency review period ended on July 1, 2019.

The NOA and early notice of project execution in a wetland area were published in the following newspapers: Colorado Springs Gazette and the Monument/Palmer Lake Our Community News.

Copies of the Draft EA and Draft FONSI/FONPA were also made available for review at the following locations:

- Pikes Peak Library District Penrose Branch
  20 N Cascade Ave
  Colorado Springs, CO 80903

- USAFA Base Library, 10 FSS/FSDL
  5136 Redtail Drive, Suite H103
  USAF Academy, CO 80840-2600

- Monument Library
  1706 Lake Woodmoor Dr.
  Monument, CO 80132

- USAFA's website (http://www.usafa.af.mil/Units/Mission-Support-Group/Civil-Engineering-Squadron/Environmental-Management)

Comments received during the public comment period will be reviewed and addressed, when applicable, and will be included in their entirety in **Appendix G** of the Final EA.

1.9 Decision to Be Made

This EA evaluates whether the Proposed Action would result in significant impacts on the environment. If significant impacts are identified, USAFA would undertake mitigation to reduce adverse impacts to levels less than significant, select an alternative for implementation, undertake the preparation of an EIS addressing the Proposed Action if significant adverse impacts remain or abandon the Proposed Action by selecting the no alternative action.

This EA is a planning and decision-making tool that will be used to guide USAFA in implementing the Proposed Action in a manner consistent with Air Force requirements for environmental stewardship.

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2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

The Air Force proposes to relocate the USAFA visitor center according to the goals developed in the IDP (BMCD, 2018) by leasing approximately 52 acres of non-excess, undeveloped open space property to Blue & Silver using an EUL agreement. Blue & Silver would leverage commercial opportunities to financially support design and construction of the new Gateway Visitor Center by developing TrueNorth Commons, a 36-acre multi-use commercial development in the southern portion of the EUL area. TrueNorth Commons design and layout is punctuated by the Gateway Visitor Center.

The TrueNorth Commons development complex would also include a 4-star hotel and conference center, a 3-star hotel, office space, and commercial/recreational opportunities, all of which would significantly increase public exposure to USAFA and provide an additional source of income for the developers, USAFA, the City, and local businesses. The details of the entire development associated with the Proposed Action are provided in **Section 2.3.5** Preferred Alternative – TrueNorth Commons. For this EA, the term Proposed Action is synonymous with the phrase Preferred Alternative.

2.2 Selection Standards

NEPA and the CEQ regulations mandate the consideration of reasonable alternatives for the Proposed Action . Reasonable alternatives are those that also could be utilized to meet the purpose of and need for the Proposed Action. Per the requirements of 32 CFR Part 989, the Air Force EIAP regulations, selection standards are used to identify alternatives for meeting the purpose of and need for the Proposed Action .

Any proposed development on Air Force-owned properties must support the Purpose of and Need for the Action and meet the following baseline requirements to be advanced for proposal for leasing under the EUL program:

- Be compatible with the existing, ongoing military mission and commercial activities at USAFA and other DoD installations in the area.
- Comply with Air Force and DoD planning and design manuals, design standards, and safety requirements for Air Force facilities and use industry and city standards for development outside the USAFA perimeter fence.
- Be economically feasible and financeable at reasonable market rates.

- Enhance the quality of life for USAFA personnel, contractors with the DoD, and private employees working within the EUL area.

In selecting possible candidate parcels to lease under an EUL, USAFA looked for sites that met the following selection standards:

1. *Compatible with Existing USAFA and DoD Mission:* USAFA has identified a need for adequate visitor facilities to increase interest and tourism at USAFA and in the Pikes Peak Region and to support USAFA's strategic goal of optimizing the value of its existing real property assets and to generate revenues that benefit USAFA, thereby supporting the mission and providing an economic benefit to the City.

2. *Complies with USAFA Design and Marketing:* The new visitor center should comply with USAFA and DoD planning and design manuals, design standards, and safety requirements for Air Force facilities and should be readily accessible to the general public, be marketable to USAFA and the City, and increase exposure to USAFA and its mission.

3. *Is Economically Viable and Financeable:* Creating a public-private partnership through the implementation of a EUL would make the development of a new visitor center both economically viable and financeable.

4. *Enhances Quality of Life for USAFA Personnel:* The visitor center should be designed so that daily operations at USAFA would be minimally impacted. Privacy of USAFA cadets and personnel should be considered in the design and placement of the new visitor center. Keeping USAFA missions mostly separated from the increased number of tourists would increase the quality of life and experience for USAFA cadets and personnel.

5. *Avoids Development Constraints:* The location of the EUL Area avoids natural development constraints such as wetlands, floodplains, critical habitat for statutorily protected species, site topography, development area (size and accessibility), explosives safety arcs, Environmental Restoration Program (ERP) sites, and areas of incompatible land uses.

6. *Offers Sufficient Site Access and is Outside the Perimeter Gate:* The visitor center would ideally be located on USAFA property outside of the secure perimeter and traffic to and from the Visitor Center would ideally maintain an acceptable level of service (LOS). This would significantly reduce the amount of non-military traffic on USAFA, reduce congestion at the USAFA entry gates, increase safety for USAFA cadets and personnel, and decrease the potential for terroristic acts. In addition, having a visitor center that is located outside the security gates would increase the number of visits by tourists, thereby increasing positive exposure to USAFA and its mission.

7. *Is Compatible with the Goals of the C4C Initiative:* The purpose of the C4C Initiative is to increase tourism in Colorado Springs and the Pikes Peak region by adding four new venues including a US Olympic museum, a sports medicine facility affiliated with the US Olympic Committee, a sports stadium, and the USAFA Visitor Center. The visitor center project is also envisioned by the C4C Initiative as being a "Gateway to Colorado Springs" and would house a center for tourist information on the Pikes Peak region, making it the front door for tourists coming into town from I-25. The C4C Initiative has projected an additional 160,000 out-of-state tourists would visit on an annual basis. The design of the visitor center should be bold enough to announce a visitor's arrival into the Pike Peak region and yet retain the characteristics of USAFA by accentuating and complementing the architectural design scheme at USAFA.

8. *Is Easily Accessible and Visible to the General Public:* Accessibility to the visitor center should be readily available for the expected number of annual visitors.

9. *Utilizes non-USAFA Financing Options:* The new visitor center should optimize the value of USAFA existing real property assets and promote the efficient and economical use of real property assets at USAFA. An EUL is considered to be a value-based transaction involving Air Force real property assets.

10. *Retained for Consideration as part of the EIAP:* In 2014, USAFA completed AF Form 813 as part of the EIAP to identify the need for further analysis of proposed alternatives as part of the EA (See Section 2.31 for additional detail).

2.3 Alternatives

2.3.1 Alternatives Developed in the 2014 Business Case Analysis

A Business Case Analysis (BCA) developed by USAFA in February 2014 provided five potential alternatives, consisting of four action alternatives and a No Action alternative, for a visitor center based on factors that considered safety and security, mission effectiveness, community relations, life-cycle costs, risks and benefits, and funding sources. The factors were compiled to produce a weighted benefit score for each alternative.

- *Renovate the Existing Barry Goldwater Visitor Center (BGVC)* - This alternative provides for renovation of the existing 31,984 square foot BGVC (Building 2346). The interior would be upgraded to museum quality, including lighting designed to preserve historical displays. The renovation of the existing facility would require minimal site work and has adequate existing utility infrastructure. The alternative was assigned a weighted benefit score of 20.3.

- *Construct New Visitor Center West of I-25 at North Gate Boulevard* **-** This alternative proposes building a new visitor center outside USAFA's North Gate. The new facility would include exhibits, a gift shop, food service, and a theater. The alternative was assigned a weighted benefit score of 20.7.

- *Construct New Visitor Center at Falcon Stadium* **-** This alternative would include construction of a new visitor center directly east and adjacent to the Falcon Stadium. The new facility would be 34,350 SF and include exhibits, a gift shop, and a theater. The renovation of the new facility at Falcon Stadium would provide adequate existing utility infrastructure. The alternative was assigned a weighted benefit score of 19.0.

- *Construct New Visitor Center East of I-25 at North Gate Boulevard* **-** This alternative would involve construction of a new visitor center north and east of USAFA, on the east side of I-25. The new facility would include exhibits, a gift shop, and a 4,000 SF theater. This alternative would require off-base land acquisition for the facility, parking lot, and entrance. This alternative had the lowest weighted benefit score of 12.1 and was removed from further consideration for analysis.

- *No Action Alternative* **-** Under the No Action Alternative, current operations would continue at the existing BGVC. It is anticipated that visitation would decline due to security requirements, which would conflict with the USAFA purpose to provide safe and reliable access, and the best possible visitor experience. The no action alternative was assigned a weighted benefit score of 18.3.

The three action alternatives identified in the BCA with the highest weighted benefit score were carried forward for analysis in the EIAP in addition to the No Action alternative as required by 32 CFR Part 989. These alternatives were evaluated to determine their potential for significant impacts to the environment and to identify the need for further analysis in an EA as documented on AF Form 813 in 2014 (USAFA,2014).

2.3.2 Alternatives Considered in the USAFA Request for Environmental Impact Analysis

The following three action alternatives and a no action alternative were forwarded from the BCA and considered during the 2014 Request for Environmental Impact Analysis, AF Form 813 (USAFA, 2014) to address the Purpose and Need of the Proposed Action:

- Preferred Alternative (Proposed Action) - Utilizing an EUL to provide a new Visitor Center surrounded by supporting development (Preferred Alternative). Construct a New Visitor Center west of I-25 at North Gate as part of an EUL. This alternative proposes building a new visitor center outside USAFA's North Gate on the west side of I-25. The

new facility would be 36,350 SF and includes exhibits, a gift shop, food service, and a theater.

- Alternative 1 - Renovate the existing BGVC using existing USAFA budgeting. This alternative provides for renovation of the existing 31,984 square foot BGVC (Building 2346). The interior would be upgraded to museum quality, including lighting designed to preserve historical displays. The renovation of the existing facility would require minimal site work and has adequate existing utility infrastructure.

- Alternative 2 - Construct a new 25,000 square foot Visitor Center at the current Falcon Stadium. This alternative includes construction of a new visitor center directly east of and adjacent to the Falcon Stadium. The new facility would be 34,350 SF and would include exhibits, a gift shop, and a theater. The renovation of the new facility at Falcon Stadium would provide adequate existing utility infrastructure.

- No Action Alternative

The screening evaluation included in AF Form 813 is summarized in Table 2.1.

Table 2.1. Screening the Alternatives

	Selection Standards									
	Compatible with existing USAFA and DoD Mission	Comply with AF and USAFA Design and Marketing	Economically Viable and Financeable	Enhance Quality of Life for USAFA personnel	Avoids existing development constraints	Offers sufficient site access outside the Perimeter gate	Compatible with the goals of the C4C Initiative	Easily accessible/visible to the general public	Utilizes non-USAFA financing options	Retained for consideration as part of the 2014 EIAP
Preferred Alternative	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Alternative 1	No	No	Yes	No	Yes	No	No	No	No	No
Alternative 2	Yes	Yes	No	Yes	No	No	Yes	No	No	No

Based on results of the BCA and the Form 813, construction of a new visitor center west of I-25 at North Gate Boulevard was identified for further analysis through an EA. This alternative was identified as the Proposed Action in the AF Form 813 analysis and determined to be the best and only feasible choice for the proposed Visitor Center development, as it met the stated purpose and need for the provision of adequate facilities for visitor programs, ensured safe and adequate access, and provided the best opportunities to enhance the visitor experience. This was the only alternative that would provide access to the Visitor Center outside of the controlled perimeter of the base regardless of changes to security levels. The parcel at North Gate as assessed in the AF Form 813 is carried forward as part of the proposed EUL site for development of the Visitor Center and other facilities; and further analysis as the Proposed Action in this EA. The EUL parcel and the facilities proposed for development that would be evaluated in this EA are located at approximately the same site that was evaluated for the AF Form 813 Proposed Action, and is presented in greater detail in this EA.

2.3.3 Alternatives Eliminated from Further Consideration

The following two action alternatives evaluated in the AF Form 813 were eliminated from further consideration as part of the screening process:

- *Renovate the Existing BGVC* - The renovation of the existing facility was removed from further consideration because there was no opportunity to change the existing footprint, which limits the options for the renovation to address long-term sustainment of visitor programs; and was not the best choice for safe and reliable access due to the location within the controlled perimeter of the base because of varying levels of security that change as needed. The weighted benefit score of 20.3 was the second lowest score of the three action alternatives evaluated in the BCA and this alternative was not selected as the proposed action in the subsequent AF Form 813.

- *Construct New Visitor Center at Falcon Stadium* - A new Visitor Center at Falcon Stadium was eliminated from further consideration because the construction would require extensive site work that would conflict with ongoing events and activities at the stadium, and the options for development were limited due to the presence of existing facilities and limited availability of land area. Operation of the Visitor Center at the stadium would increase the potential for user conflicts based on a substantially increased number of visitors at the stadium for multiple uses and purposes, and substantially increased levels of traffic on Stadium Boulevard entering stadium access roads. In addition, the site was not a viable choice for safe and reliable access due to the location within the controlled perimeter of the base, which may be subject to varying levels of security that change as needed. The weighted benefit score of 19.0 was the lowest score of the three action alternatives evaluated in the BCA and this alternative was not selected as the proposed action in the subsequent AF Form 813.

2.3.4 Alternatives Carried Forward for Analysis

2.3.4.1 No Action Alternative

CEQ regulations require evaluation of the no action alternative under NEPA. The no action alternative serves as a baseline for evaluating the impacts of the Proposed Action under the preferred alternative.

Under the No Action Alternative, the proposed development activity would not occur, a new USAFA visitor center would not be constructed, and the proposed lease property would remain underutilized non-excess property at the USAFA.

2.3.4.2 Preferred Alternative – TrueNorth Commons

The Preferred Alternative is to lease approximately 52 acres of non-excess, undeveloped open space property to Blue & Silver under an EUL agreement (EUL Area) for the design, construction, and operation of the relocated visitor center and the 36-acre TrueNorth Commons supporting development. The TrueNorth Commons development footprint is based on the current scope and size of the proposed Gateway Visitor Center and includes the supporting commercial development required to make construction of the new USAFA visitor center economically feasible. The Preferred Alternative is shown in **Figure 2.1**, the TrueNorth Commons Conceptual Development Plan.

The terms "EUL Area" and "EUL Property" are used interchangeably to describe the 52 acres designated for proposed or future development by the EUL agreement. The terms "Development Area" and "TrueNorth Commons" are specific to the currently-designed 36-acre multi-use commercial development footprint within the EUL Area (Parcels A-D on **Figure 1.2**). Finally, the term "Project Area" refers to the approximate 58-acre area where physical disturbance resulting from construction of TrueNorth Commons and the surrounding utilities corridors and stormwater management facilities is proposed. The Project Area includes the Development Area, approximately 20 acres of land along North Gate Boulevard from the western edge of the Development Area eastward to Struthers Road, and approximately 2 acres of land immediately west of the EUL Area that would experience short and long-term impacts associated with construction and operation of TrueNorth Common's stormwater infrastructure. Note that the Project Area defined for the EA is larger than that defined in the BA because of addition of the utilities construction area which does not include PMJM habitat and was not considered relevant to the BA.

Figure 2.1: Conceptual Development Plan for TrueNorth Commons

2.3.5 Description of Facilities

Gateway Visitor Center

The anchor for the proposed development is the 120-foot tall, 34,350-square foot Gateway Visitor Center, which would showcase numerous historical exhibits and would provide tourist information on USAFA and the Pikes Peak region. The Visitor Center would be situated on 8.74-acres of TrueNorth Commons north of North Gate Boulevard in the eastern portion of the EUL area (**Figure 1.2**, Parcel A) so that it would be clearly visible and easily accessible from I-25.

Current development plans for the Gateway Visitor Center complex include:

- A museum and Pikes Peak Welcome Center with a planned 7,800-square foot exhibit space and theater
- A 7,000-square foot glass-enclosed atrium offering a triple height exhibit space for welcoming visitors to USAFA and group gatherings, and promoting natural light and air circulation throughout the new Visitor Center facility

- Polaris Plaza, an open-air terrace surrounding the Visitor Center, extending approximately 15,000 square feet and linking the Gateway Visitor Center to elevated walkways spanning North Gate Boulevard, connecting the Visitor Center and the westerly adjacent commercial retail with the hotels and office space proposed for the EUL development area south of North Gate Boulevard.
- A 225-space parking lot, encompassing approximately 36,450 square feet, that can also accommodate tour buses.

Hotel Development

Based on a need for more hotel space as identified in the 2017 Market Study (EPS 2017), especially in the north submarket area, two hotels totaling 400,000 square feet are included in the Master Development Plan across 11 acres within Parcel B (**Figure 1.2**). The first hotel identified in the conceptual site design is a 250-room, full-service, 4-star luxury hotel. This hotel would also include a parking lot with 250 parking spaces, spanning approximately 40,500-square feet. The second hotel would be a 125-room, 3-star hotel with an approximate 28,350-square foot parking lot consisting of 175 parking spaces. The maximum height of the hotels is proposed to be 100 feet.

Restaurants, Commercial, and Recreational Development

Commercial development including restaurant, retail, and recreational space is planned for the western portion of the development north of North Gate Boulevard, encompassing approximately 6.43 acres of the development area (**Figure 1.2**, Parcel C). Blue & Silver has proposed a total of 40,000 square feet of restaurant space and small-scale retail operations to provide food service, gas and convenience services, and other retail options for hotel guests, visitors, and on-site employees. One of the proposed facilities within this area is an indoor skydiving facility, which would complement adjacent Visitor Center and offer tourists and locals a unique experience. The proposed indoor skydiving facility would also provide training support for USAFA cadets and alleviate the need for cadets to travel to more distant indoor training venues to achieve educational goals. The maximum height for the retail and restaurant building is proposed to be 45 feet; however, the indoor skydiving tower would extend to a maximum height of 60 feet. The development's restaurant and retail area would also include a 160-space parking lot, covering 25,920 square feet. The Proposed Action also calls for construction of a 2,400-square foot trailhead center for the New Santa Fe Regional Trail, a recreational trail for bikers, runners, and hikers, which is proposed for the northeast corner of the development area (**Figure 1.2**, Parcel A).

Office Development

Development of approximately 200,000 square feet of professional office space is planned across 9.8 acres of land south of North Gate Boulevard on the western portion of the development area (**Figure 1.2**, Parcel D). The development plan identifies three pad sites with two-story office buildings that offer exceptional views of USAFA and the Front Range. Terraced and landscaped parking with approximately 500 spaces is included in the current conceptual design, which would cover approximately 81,000 square feet. The maximum height of the office buildings is proposed to be 60 feet.

Open Space

Approximately 15.58 acres of the EUL Area (**Figure 1.2**, Parcel E); is currently planned for preservation of open space and no development will occur as part of this Proposed Action. In accordance with 32 CFR Part 989, any future development of Parcel E will need to go through the NEPA process to evaluate potential impacts from changes in land use.

2.3.5.1 Development Management

To implement this development concept, Blue & Silver would enter into a land lease with the USAF. The terms of the lease are still being negotiated however the duration would vary by land use with the shortest term being 50 years and the longest being 99 years. The lease would establish a plan for orderly and efficient development of the EUL property and would provide right of entry, enable environmental characterization and compliance, and memorialize the development concept and plan. It would also describe utility corridors and general access points

and provide for the intent to cooperatively work together with USAFA and the Air Force to solve contingencies for the mutual benefit of the development.

The Gateway Visitor Center and surrounding development activities would follow the mid-century modern design intent of the Cadet Area and would be reviewed and approved by a Design Review Board (DRB) composed of representatives from Business Improvement District (BID) established to manage TrueNorth Commons and the USAFA Architect.

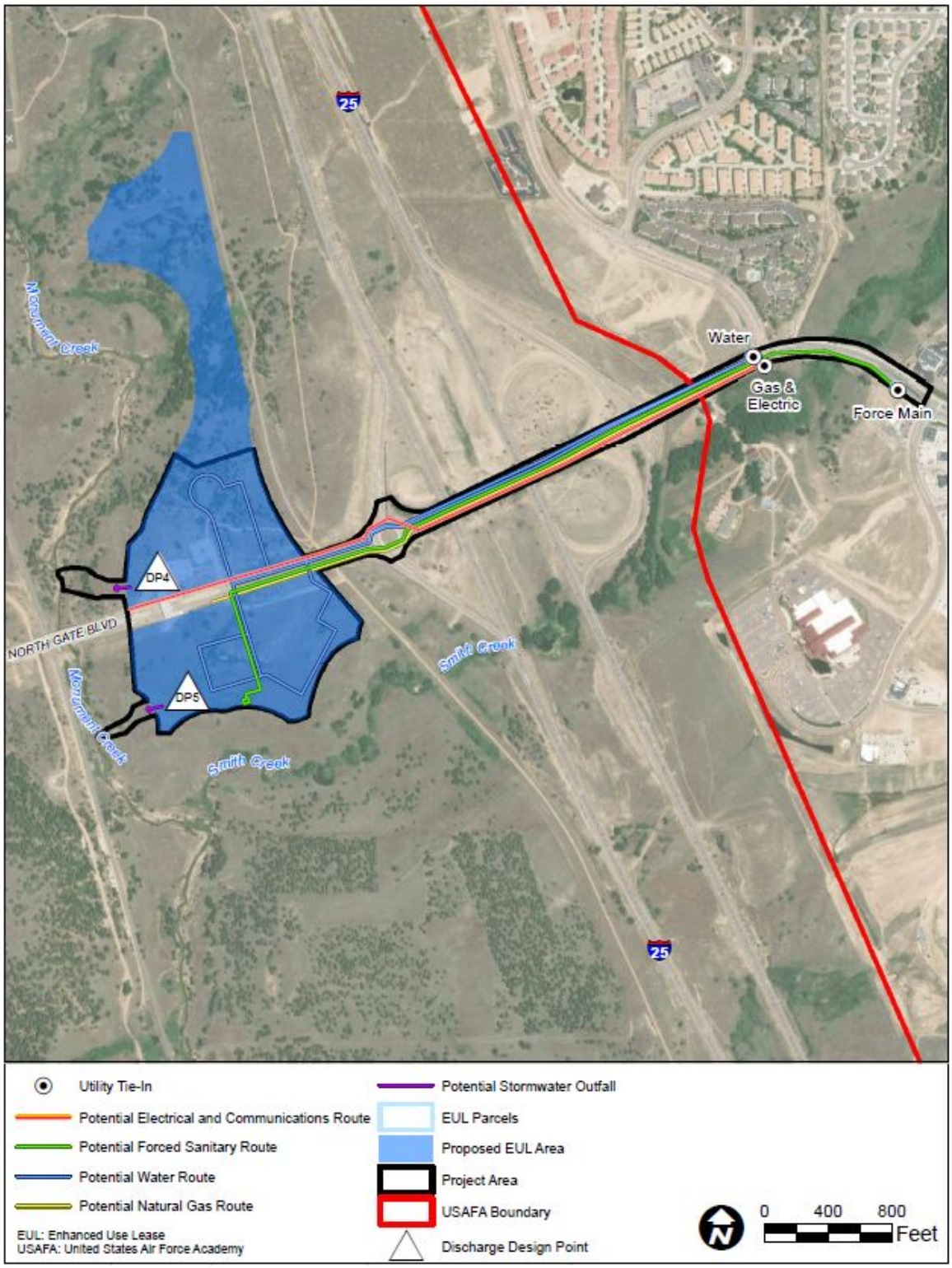
Blue & Silver would work with the prospective tenants through typical design phases consisting of predesign, schematic design, design development and construction documents. The plans would reflect Air Force design, adhere to the mid-century modern design of the Cadet Area and the TrueNorth Commons Design Guidelines (Matrix, 2019), which have been reviewed and approved by USAFA. Plans would also be reviewed and approved by a DRB. Throughout these phases, Blue & Silver would submit supporting documentation to USAFA for review. Blue & Silver would also comply with applicable building codes adopted by El Paso County Planning and Zoning and the City as appropriate. Blue and Silver's contractor(s) for the development would be required to schedule and submit information for required inspections and approval procedures for construction materials and design requirements, including engineering design submittals.

2.3.5.2 Utility Infrastructure Installation

The Proposed Action would necessitate the expansion and buildout of utility infrastructure within and immediately north and south of North Gate Boulevard, as shown in **Figure 2.2**. The utility infrastructure needed to support the planned development would include electric, gas, water, sewer, and telecommunications. These utilities would be supplied to the TrueNorth Commons by tying into existing utilities near Struthers Road and North Gate Boulevard and extending the main lines to reach the development area.

The development's sewer infrastructure would consist of a 2,300-linear foot gravity sanitary main running north to south across the site and draining to a lift station proposed for construction at the southern end of the TrueNorth Commons' footprint. From the lift station, approximately 1,400 linear feet (ft) of sanitary force main line would be installed within the development footprint to pump sanitary waste northeast to North Gate Boulevard, while an additional 3,100 linear ft of sanitary force main line would be installed along North Gate Boulevard to connect to Colorado Springs Utilities' (CSU's) existing force main near the intersection of North Gate Boulevard and Struthers Road. Additionally, 3,000 linear ft of dual water mains would be installed under North Gate Boulevard to connect the development to CSU's existing water main in Struthers Road east of I-25, while an additional 5,700 linear ft of water main would be installed within the TrueNorth Commons' footprint to connect future development pads to CSU's water main system.

Figure 2.2: Proposed Utility Infrastructure for Preferred Alternative



Gas and telecommunications would be supplied to the TrueNorth Commons in the same alignment as CSU's existing electric line along the north shoulder of North Gate Boulevard. Gas lines would be installed within USAFA property adjacent to North Gate Boulevard, connecting the Site to CSU's existing dead-end main east of I-25 located 2,800 ft east of the development area, while an additional 1,700 linear ft of gas main would be installed within the TrueNorth Commons' footprint to connect future development pads to CSU's gas system. Telecommunications would be supplied to the development area by Comcast and CenturyLink using North Gate Boulevard as a utility corridor with installation lengths approximating those calculated for CSU's gas line. An existing CSU electric line adjacent to North Gate Boulevard would be upgraded to support the development, which would involve improvement of 2,500 linear ft of electric line east of the Site along North Gate, while an additional 1,700 ft of electric main would be installed within the TrueNorth Commons footprint to connect future developments pads to CSU's electric supply.

2.3.5.3 Storm Water Management Facilities

The Proposed Action entails construction of storm water management facilities within the development area to manage and mitigate additional storm water flow resulting from the increase of impervious surfaces at the site. The storm water management facilities proposed to accommodate the planned development include two storm water detention ponds outfitted with drainage pipes directing released storm water to dispersion basins. The general drainage patterns for the Site would consist of positive drainage from the structures, across landscaping and open space, to curb and gutter within the internal roadways/parking areas and along North Gate Boulevard. Subsequently, storm water from the roadways would be directed to inlet collection points, where it would be captured and conveyed through an onsite pipe network to a pair of full-spectrum detention ponds. The full-spectrum detention ponds are proposed for construction in the natural low points of the development and have been sized and designed in accordance with the City's Drainage Criteria Manual to ensure developed flows from the site do not exceed the maximum historic peak flows. Specifically, the detention ponds would be constructed along the western boundary of the development area, with a 3.835-acre-foot (ac-ft) detention pond located immediately north of the North Gate Boulevard security checkpoint, 500 feet east of Monument Creek, and a 3.208-acre-foot detention pond positioned at the southwest corner of the development area, 400 feet east of Monument Creek and 350 feet north of Smith Creek.

To ensure compliance with City of Colorado Springs Drainage Criteria Manual (DCM) standards, calculations were completed for several design points at the site to determine existing peak flows and evaluate the impact of the Proposed Action on potential developed flows. Design Points 4 and 5 (DP4 and DP5), which correspond to the site's natural low points located north of North Gate Boulevard and south of North Gate Boulevard respectively, are the proposed locations of the site's full-spectrum detention ponds (Figure 2.2). These locations were

evaluated to ensure the proposed storm water management facilities are properly sized to meet the City's developed storm water requirements. Based on those Design Points, existing undeveloped flow conditions during a 100-yr storm event result in discharges of 38 cubic feet per second (cfs) (DP4) and 15.4 cfs (DP5) flowing into upland areas east of Monument Creek, as shown in Figure 1 of the 2018 Biological Assessment. The hydrological analysis of the site also determined that if the Proposed Action did not incorporate storm water runoff mitigation features such as the planned detention ponds and dispersion basins, the developed 100-year storm discharges expected at DP4 and DP5 would be 104.8 cfs and 100.8 cfs, respectively. However, the detention ponds included in the Proposed Action are designed to detain the site's developed storm water runoff, releasing 97-percent of collected waters within 72 hours (and 99-percent within 120 hours) at a maximum rate of 0.30 cfs per acre in accordance with City standards. Additionally, the detention ponds are intended to improve water quality by allowing particulates and impurities to settle out of suspension and to reduce off-site discharge by facilitating infiltration of storm water into soil underlying the ponds. As a result of the detention ponds' extended release and infiltration capacity, the projected 100-year storm discharge for the developed site is calculated to be 12 cfs from the northern pond (DP4) and 6.2 cfs from the southern pond (DP5), a reduction in flow rate upwards of 60 percent relative to the current undeveloped site conditions. The proposed flows and detention pond sizing are included in **Table 2.2**.

Table 2.2. Water Quality/Detention Pond Sizing

	North of North Gate Boulevard (DP4)	South of North Gate Boulevard (DP5)
Watershed Area	41.00 Acres	20.50 Acres
5-Year Developed Flow	56.9 cfs	55.3 cfs
100-Year Developed Flow	104.8 cfs	100.8 cfs
WQCV Provided	0.705 ac-ft	0.764 ac-ft
100-Year Detention Provided	3.835 ac-ft	3.208 ac-ft

During the extended release of collected and treated storm water runoff, storm drain pipes connected to each detention pond would convey water west of the EUL boundary and discharge to uplands east of Monument Creek via a flared end section into a riprap-lined dispersion basin. The flared end section and riprap-lined dispersion basin, in combination with the upstream detention and infiltration, are intended to lower flow velocities, promote sheet flow, and mitigate against erosion that would be caused by the point discharge of the developed runoff. The weir of each dispersion basin is approximately 40 feet long; therefore, 100-year storm discharges released from the weirs would approximate a flow depth of 0.21 ft and a velocity of 1.41 feet per second (ft/s) at the northern basin and a depth and velocity of 0.14 ft and 1.06 ft/s, respectively, at the southern basin.

Due to the proposed locations of the two storm-drain pipes and dispersion basins, the Proposed Action requires installation of additional infrastructure outside the EUL boundary including reinforced concrete pipe (RCP), which would connect the onsite detention ponds to the offsite dispersion basins. Temporary disturbance from grading and excavation outside of the EUL boundary would occur across approximately 0.40 acres of the westerly adjacent USAFA lands, including a 100-foot wide area of disturbance centered along the entirety of each storm drain pipe run as well as a 50-foot buffer extending beyond the downstream edge of each dispersion basin. Temporary impacts associated with the grading and installation of the storm outfall pipes and dispersion basins outside of the EUL boundary would approximate 17,500 square feet; however, a small portion of the temporarily impacted area outside of the EUL boundary would also be permanently impacted from the installation of the two dispersion basins, which total 1,000 square feet.

2.3.5.4 Construction Activities

Construction disturbance within the EUL property boundary would be limited to the 36-acre Development Area; however, the installation of two storm water drainage pipes and dispersion basins would require the disturbance of an additional 0.4-acre of land directly west of the development area to release treated water from the site's two proposed detention ponds to uplands east of Monument Creek. Additionally, installation of utility infrastructure would necessitate temporary disturbance of approximately 20 acres of land along and under North Gate Boulevard.

The construction activities planned for the Project Area are consistent with conventional construction methodology associated with the development of a multi-use commercial/retail/hospitality project within the southern Colorado regions. A City Grading and Erosion Control Plan would be processed with a Colorado Department of Public Health and Environment (CDPHE) Construction Activity Permit, which in addition to a Storm Water Pollution Prevention Plan (SWPPP), would govern construction practices on the property including access, grading, erosion control best management practices (BMPs), pollution prevention, and final stabilization of the construction activities on the site. Specifically, storm water BMPs would be implemented throughout the duration of the project, which may include interim diversion dams/ditches, silt fencing, sediment control logs, sediment ponds, and biweekly inspections (or inspections based on significant rainfall events).

In preparation for the construction activities, a staging area would be constructed within the Project Area to serve as a parking lot for worker vehicles during the work day and a storage lot for heavy equipment after-hours and on weekends. Additionally, dedicated haul routes would be established for earthworks equipment to encourage efficient and safe redistribution of soil on-site, while the re-use of excess soil within contiguous parcels of the Project Area would be

prioritized to minimize heavy equipment traffic across North Gate Boulevard. Gravel pads would also be installed where haul roads intersect North Gate Boulevard to minimize offsite transport of dirt or debris.

Following receipt of all necessary permits, construction within the Project Area would begin with grading operations, which would entail the clearing and grubbing of the 36-acre Development Area as well as an additional approximately 0.4-acres associated with the Site's two proposed storm water detention ponds and dispersion basins, which abut the western boundary of the development area. During the grading process, trees would be cleared and mulched, tree stumps would be removed using heavy equipment, and the first 6-inches of topsoil would be salvaged and stored on-site for incorporation into the final landscaping and stabilization of the property.

Once grading operations are concluded, installation of the Site's utility infrastructure would commence. All utilities would be installed in accordance with the requirements of CSU standard specifications, including sanitary sewer, water main, building service lines, and dry utilities (gas, electric, telecommunications). More specifically, utility installation would involve excavation of open trenches using conventional construction machinery with trench widths approximating 2-4 feet, while trench depths and over-excavation would vary by utility. Trench depths would approximate 8-14 feet for the sanitary sewer, 5-6 feet for the water main, and 18-36 inches for dry utilities, while trench over-excavation would be dependent on the utility depth in compliance with CSU and Occupational Health and Safety Administration (OSHA) regulations for open trench excavation procedures. Following completion of utility installation, the utility trenches would be backfilled, compacted, and revegetated in locations not associated with roadway infrastructure.

All infrastructure is to be reviewed and approved through the City prior to commencing any roadway or storm drain installation. Additionally, a geotechnical analysis of onsite soils would be completed by a licensed engineer to provide technical direction on pavement design, materials, thickness, subgrade and compaction requirements. Critical features of the Proposed Action's storm water management infrastructure, including the full-spectrum detention ponds, dispersion basins, and trunk lines, would be installed concurrently with other utility infrastructure; however, roadway infrastructure and inlet storm drainage would be sequenced with the subarea development.

The master development activities include site grading, installation of utility infrastructure, construction of the storm water trunk line and detention ponds, and delivery of the pad lots, which is projected for spring 2020. Following delivery of the pad lots, subarea development would commence and would entail the phased construction of building foundations and other vertical improvements, paving of parking lots and interior access roads, utility hook ups, and

final landscaping, which is anticipated to be completed with the opening of the Visitor Center forecasted for late fall 2023.

Within 30 days of completing stockpiling or construction, the Site would be reseeded with native vegetation mix for final stabilization in accordance with USAFA's *Standard Specifications for Site Restoration, Revegetation and Trees* (USAFA, 2019). Also see **Appendix E**, Conservation Measures. Stabilization would be monitored by the BID, and a final acceptance would be issued once the defined parameters have been achieved in accordance with City rules and regulations.

2.3.5.5 Operations and Maintenance Activities

Following subarea development, it is assumed that the proposed businesses would be successful in attracting and retaining clientele, and therefore, operation of the facilities would continue on a daily basis in perpetuity. The BID would own, operate, and maintain the TrueNorth Commons development. The BID would be responsible for management and control of the noxious weeds, erosion, and stormwater infrastructure.

2.3.5.6 Development Schedule

It is anticipated that construction activities related to site grading and utility infrastructure installation would begin in summer 2019 following completion of this EA and finalization of the EUL. The initial construction phase would span approximately 9 months at which time the pad lots would be delivered for subarea development. Subsequent to the completion of the pad lots, phased subarea development would begin. It is anticipated that construction activities associated with the phased completion of subarea development would persist for approximately three years, with completion of the office buildings projected for early spring 2021, completion of the hotels expected in fall 2021, completion of the retail spaces predicted for summer 2022, and completion of the Visitor Center forecasted for late fall 2023.

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3.0 AFFECTED ENVIRONMENT

This Section of the EA describes the relevant existing environmental conditions at the EUL Area and surrounding properties as described in **Section 2.3.5** as the Preferred Alternative and shown on **Figure 2.1**. Baseline data were compiled from consultation with base personnel, queries of resource-specific databases, and previous environmental, planning and policy documents including USAFA's Integrated Cultural Resources Management Plan (ICRMP) and Integrated Natural Resources Management Plan (INRMP). In addition, several site-specific studies were performed that also provide information regarding the current conditions for the Preferred Alternative. These studies include:

- A Biological Assessment (BA),
- A Cultural Resources Inventory (CRI),
- A Traffic Study,
- A Wetland Delineation

The EUL Area currently includes approximately 52 acres of undeveloped property located adjacent to North Gate Boulevard at the USAFA North Gate. The property is vacant except for a parking lot and trail access for the New Santa Fe Regional Trail. USAFA occupies approximately 18,500 acres of land in El Paso County. The current Development Area includes approximately 36 of the 52 acres of land near the USAFA North Gate as designated in the EUL area, however impacts to surrounding properties must also be taken into consideration when evaluating impacts to some resources (e.g. water resources).

The region of influence (ROI) is defined for each resource as the area affected by the proposed project. The resource specific ROI determines the geographical area to be addressed as the Affected Environment. The ROI for most resources is the proposed Development Area and its associated area of disturbance including utility corridors along North Gate Boulevard east of the EUL property and stormwater management structures west of the proposed EUL boundary. Potential impacts associated with certain issues (e.g., noise) may extend beyond the project direct disturbance area. Therefore, the ROI is identified for each resource analyzed in this EA and is described in the following sections.

For purposes of this EA, any land or area that has a potential to be impacted by development of the EUL property will be considered a part of the Preferred Alternative. The terms "EUL Area" and "EUL Property" are used interchangeably to describe the 52 acres designated by the EUL boundary. The term "TrueNorth Commons" is specific to the currently-designed footprint (Parcels A-D) of proposed development within the Proposed Action (**Figure 2.1**). The Project Area is the area that includes the Development Area and the identified construction disturbance areas east and west of the EUL boundary (**Figure 2.2**).

3.1 Land Use and Aesthetics

The ROI for land use for the Proposed Action is the Project Area. The ROI for Aesthetics includes an area larger than the Project Area and includes an emphasis on key vantage points of USAFA and the Rampart Range.

3.1.1 Definition of the Resources

3.1.1.1 Land Use

Air Force guidance on comprehensive planning for land use establishes the IDP as the primary document for defining a framework that informs decision-making regarding the physical development on Air Force installations. The most recent IDP for the USAFA was published in 2018 as a draft and defines the vision for the built environment for the long-range future. (BMCD, 2018). This IDP is expected to be approved and adopted as final in 2019.

3.1.1.2 Aesthetics/Visual Effects

Visual effects (aesthetics) are generally defined as the natural and man-made features of a landscape or other area that comprise its aesthetic qualities. Those features define the landscape character of an area and form the overall impression that an observer receives of that area. A visual resources assessment requires the identification of visually sensitive locations based on visual quality, uniqueness, cultural significance and/or viewer sensibility and evaluation of potential impacts in relation to the Proposed Action. A visual resource's sensitivity level, or measure of public concern for scenic quality and changes in the landscape, can vary from low to high based on the type of users, amount of use, public interest, adjacent land uses and the occurrence of special areas that may be protected for scenic values. Public concern tends to be highest for notable scenic sites and wilderness areas because these areas are expected to provide scenic settings for public use, while public concern for landscapes with little diversity in terrain and/or vegetation is typically low.

3.1.2 Existing Conditions

3.1.2.1 Land Use

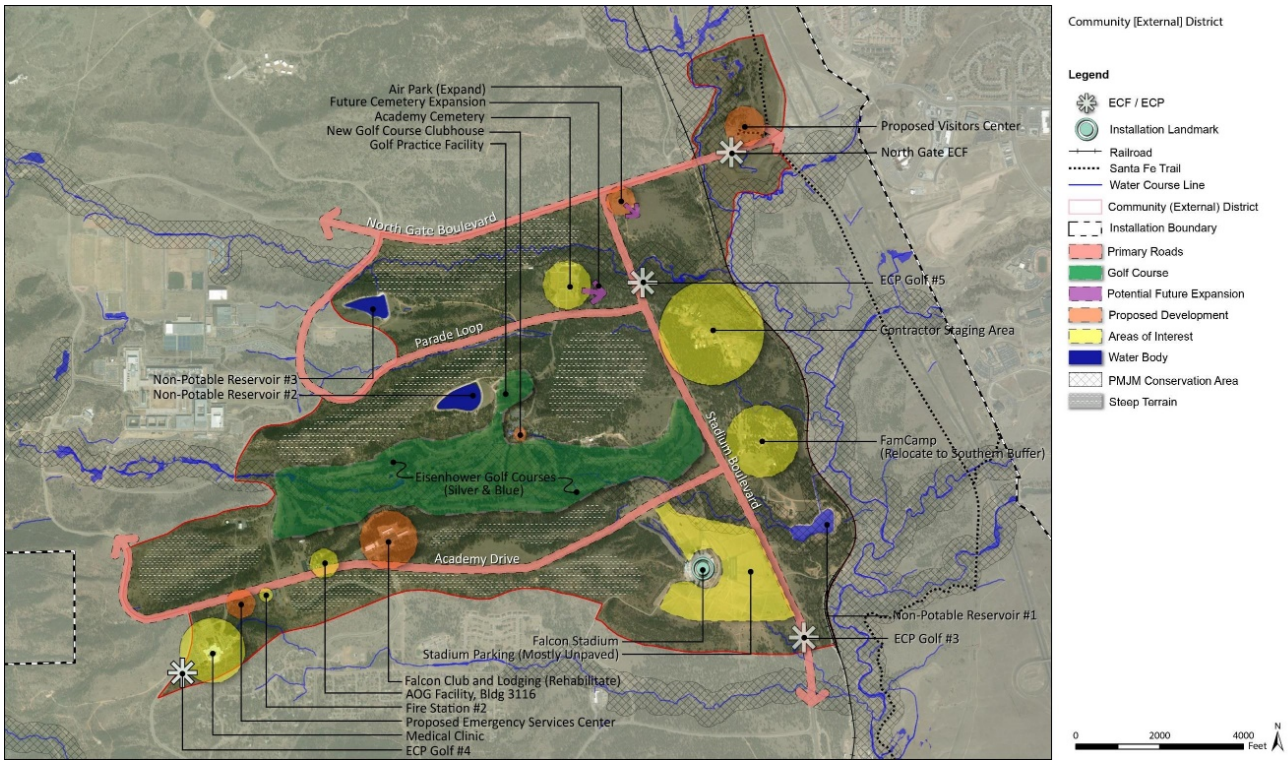
As the primary guidance for future development planning and programming decisions, the IDP includes a future land use plan that defines district-specific land use and form-based development standards. These plans and standards have been developed in accordance with USAFA strategic vision and adopted by USAFA leadership.

The existing land uses at USAFA are summarized and identified for reference in Section 9 of the IDP. Existing land use for the EUL Area includes primarily Open Space with a small zone of Tourist Area.

The Future Land Use Plan presented in the IDP is the result of a combining of future planning vision and the existing land use. As an important part of developing the Future Land Use Plan, the USAFA planners considered the identification of recommended land use changes intended to guide specific development activities envisioned for USAFA. One such change to the existing land use recommended in accordance with installation planning initiatives is the North Gate Visitor Center.

The Future Land Use Plan component of the IDP includes identification of 12 land use categories which are distributed over 8 future planning districts in order to best address existing land use patterns and future development initiatives. The EUL Area is within the Commercial External planning district which includes the following land use categories: Medical, Community Service, Lodging, Outdoor Recreation, Open Space, Community Commercial, Small-Scale Retail and Service. **Figure 3.1** is taken from the IDP and illustrates the Community External planning district within the USAFA and highlights the inclusion of the Visitor Center as part of the future land use plan.

Figure 3.1 Commercial External Planning District



In addition to land use guidance, the IDP also provides a framework for guiding future decision regarding form-based planning standards. This guidance is intended to supplement and support implementation of the most recent USAFA Design Standards. Design elements including building form and scale, streetscape elements, pedestrian circulation and parking elements are included in the form-based planning standards.

3.1.2.2 Aesthetics

USAFA, including the proposed EUL Area, is in a transitional area between the eastern Great Plains and the western Rocky Mountains, with a landscape typical for the Front Range. Rolling hills to the east of the proposed EUL Area begin to rise steadily towards the west from the relatively flat valley floor of Monument Creek and form rugged landforms at the base of the Rampart Range, which serves as a scenic backdrop to views of USAFA. The proposed EUL Area landscape is characterized by gentle to moderately-sloped hills and swales dominated by grasslands dotted with sagebrush, cacti, yucca, mullein, snowberry, willow and currants with stands of ponderosa pine (*Pinus ponderosa*) and Gambel oak (*Quercus gambelii*) and rocky outcrops. The dark green pines contrast with the bright green oaks and willows to break the swaths of yellow-green grass and give height and dramatic color to the landscape, offsetting the light yellow-brown of exposed soils and rock faces and creating a mosaic of texture, forms, and color. The landscape setting is predominantly natural and rural in character; however, manmade features within and adjacent to the proposed EUL Area include transportation routes such as North Gate Boulevard and I-25, the North Gate security facilities, a former railroad converted into a recreational trail, the New Santa Fe Regional Trail, and a 35-space parking lot that services the New Santa Fe Regional Trail. The scenic component of the landscape consists of long views of rugged terrain rising to the Cadet Area and Cadet Chapel with a dramatic backdrop of the Rampart Range; however, the scenic quality of the proposed EUL Area is considered moderate because the transitional landscape is common to the region.

Critical locations where the proposed EUL Area would be visible to the public are referred to as key observation areas and include I-25 at North Gate Boulevard, westbound North Gate Boulevard, and the Santa Fe Regional Trail proximal to North Gate Boulevard. Typical users of the area's visual resource include recreationists (hikers and bikers) along the New Santa Fe Regional Trail and motorists along I-25 and westbound North Gate Boulevard.

Recreationists typically have a high level of concern for scenic quality; however, the landscape currently in the foreground near the proposed EUL Area is considerably modified by North Gate Boulevard, the North Security Gate, I-25 and the former Atchison, Topeka and Santa Fe railroad line. Additionally, the number of viewers of the proposed EUL Area on the New Santa Fe Regional Trail is minor relative to the number of viewers on I-25 and North Gate Boulevard. Conversely, the largest group of viewers of the proposed EUL Area are motorists traveling on I-25 who have a low level of sensitivity to the visual quality of the landscape at the proposed EUL

Area, since the line of sight from a moving vehicle is generally limited to a 60- to 90-degree cone centered on the front of the vehicle, depending on the speed of the vehicle. As a result, the proposed EUL Area is only visible for a brief period of time before motorists move beyond the viewshed. Additionally, views of the proposed EUL Area to motorists on I-25 are wholly or partially blocked by intervening ridges and vegetation along portions, further reducing sensitivities to alterations of the proposed EUL Area. Finally, motorists on westbound North Gate Boulevard currently encounter a modified foreground landscape when passing through the proposed EUL Area that is dominated by the roadway and the North Gate security facility.

3.2 Noise

3.2.1 Definition of the Resource

According to the EPA, the traditional definition of noise is unwanted or disturbing sound**.** Sound can become unwanted when it interferes with activities such as sleeping or conversation, or otherwise disrupts everyday life. Any sound that injures or annoys would also be considered noise. Noise can occur as intermittent or continuous, steady or impulsive and stationary or transient. The ROI for noise as it relates to the EUL property includes the Project Area and area immediately adjacent to the Project Area in all directions at a distance equal to the distance to the closest residential population. The residential area immediately east of the North Gate Boulevard and Struthers road intersection is approximately 3,000 feet from the Project Area.

Sound is the result of pressure changes in air caused by vibration or turbulence at the source of the sound. The size or amplitude of these pressure changes results in the size of sound or loudness and the speed of these changes creates the sound's frequency. The sound level is measured in decibels (dB), and sound frequency is stated in cycles per second, or Hertz (Hz). Decibels are a logarithmic measure of the change in pressure with respect to a reference pressure level. This means a small increase in decibels can represent a large increase in sound energy. For example, an increase of 3 dB represents a doubling of sound energy, and an increase of 10 dB represents a tenfold increase in that energy. The human ear is less precise and perceives a 10-dB increase as doubling of loudness.

Standards developed for noise include the day-night average sound level (L_{dn} or DNL) which describes the cumulative noise exposure from all events occurring during a 24-hour period and the equivalent continuous sound level (L_{eq}) which describes sound levels that vary over time and consider the total sound energy over the duration of interest, usually 1 hour. For development of this standard the events occurring between 10:00 PM and 7:00 AM (“environmental night”) are increased by 10 dB to account for greater nighttime sensitivity to noise events. Based on an EPA report (EPA,1974), hearing loss is not expected in people exposed to 75 DNL or less. As stated in the AICUZ Study (USAFA,2005) The Air Force considers areas with DNL less than 65 to be acceptable for any use.

3.2.2 Existing Conditions

Noise in the ROI is consistent with residential activities, commercial areas and limited access highway uses. The immediate Project Area within the ROI consists of a more natural landscape; however, it is strongly influenced by noise associated with traffic on I-25 and North Gate Boulevard. In addition, the 306th Flight Training Group conducts flight training activities at the USAFA and noise associated with aircraft operation is also present. Based on the most recent AICUZ study, the boundary of the ROI is beyond the 65-dB noise area for the USAFA airfield. USAFA flight operations are restricted to daylight hours only. Other noise sources in the ROI are typically temporary and associated with occasional construction activities which are commonly limited to daytime hours.

Because of the distance to all other potential noise sources in the area and the relatively low frequency of train traffic, the lower volume and speed of traffic on North Gate Boulevard compared to I-25 the highway traffic noise from I-25 is the major contributor to background noise levels at the project site. Project specific noise studies have not been conducted as part of this project, however data and model predictions are available for the vicinity as the result of past investigations performed by CDOT on I-25 construction projects. Measurements made in 2001 for an EA on highway improvements along the I-25 corridor through the USAFA were used by CDOT to evaluate future impacts from traffic noise into the year 2025. The measurements were 1 hour averaged L_{eq} values in A-weighted decibels (dBA). Those measurements and predictions indicate a measured value at the Baptist Road interchange north of the EUL area of 55 dBA 1,270 feet from the highway and a predicted value of 57 dBA in 2025 at the same distance from the highway. Similarly, near Pulpit Rock south of the USAFA, measurements during the same study indicate a value of 60 dBA and a predicted value of 62 dBA at a point 638 feet from the highway. Although a noise study for the Proposed Action has not been completed these predicted values from the CDOT noise model provide reasonable expected background noise levels between 55 and 62 dBA in the Project Area and less than that at locations further west and more distant from the highway. Residential receptors located east of the Project Area and at the edge of the ROI are further from the highway than the Project Area. In fact, the distance from the highway very nearly matches the distance measured at Baptist road during the CDOT study. The predicted L_{eq} value of 57 dBA is a likely background level for this residential area. Since the relevant sound level for a residential area is the L_{dn}, an estimation of L_{dn} can be provided from a single L_{eq} measurement using methods described in the Transit Noise and Vibration Impact Assessment Manual (FTA, 2018). For L_{eq} measurements taken between 7 am and 7 pm, the L_{dn} values are approximately equal to the L_{eq} value minus 2 dBA. The existing condition L_{dn} for the residential area on the eastern edge of the ROI is 55 dBA (57 dBA – 2 dBA).

3.3 Air Quality

3.3.1 Definition of the Resource

Air quality is determined by the type and concentration of pollutants in the atmosphere, the size and topography of the air basin, and local and regional meteorological influences. The significance of local pollutant concentrations is determined by comparing them to national and/or state ambient air quality standards. Under authority of the Clean Air Act (CAA), the EPA has established nationwide air quality standards (40 CFR Part 50), more commonly known as the National Ambient Air Quality Standards (NAAQS) (**Table 3.1**). These standards represent maximum allowable atmospheric concentrations for seven “criteria” pollutants: carbon monoxide (CO), nitrogen dioxide, sulfur dioxide (SO2), particulate matter less than or equal to 10 micrometers in diameter (PM10), particulate matter less than or equal to 2.5 micrometers in diameter (PM2.5), ozone (O3), and lead (Pb). Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. NAAQS are defined in terms of concentration determined over time. Short-term standards (1-hour, 8-hour, or 24-hour periods) have been established for acute health effects and may be exceeded only once per year for an area to be considered “in attainment”. Long-term standards for chronic health effects are never to be exceeded. Based on measured ambient air criteria pollutants, the EPA designates areas of the US as having air quality equal to or better than the NAAQS (attainment) or worse than the NAAQS (non-attainment). To help ensure that current standards are appropriate, the CAA requires the EPA to review the standards set for each of the six criteria pollutants about every five years based on the latest scientific data.

States may establish their own standards as long as they are at least as stringent as the national requirements. Colorado has adopted the federal EPA standards and an additional standard for sulfur dioxide. A State Implementation Plan (SIP) is a detailed description of the program that a State proposes to use to enforce the CAA regulations. The CAA requires EPA to review and approve each SIP. The Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division (APCD) develops and implements the SIP, monitors air quality, and inventories air pollution sources. Regulations are key components of the SIP and address issues such as particulates, smoke, carbon monoxide, sulfur oxides, wood burning, volatile organic compounds (VOCs), the emissions trading program, and transportation conformity, while program implementation is conducted through permit terms and conditions and enforcement actions. El Paso County Public Health (EPCPH) works under an agreement with the APCD to provide local response to complaints related to fugitive dust sources and other air quality concerns such as odors. EPCPH also administers a permitting process for minor emissions sources related to open burning and construction activity and provides educational information to the public regarding emissions requirements. The current EPCPH Air Quality Program began

on May 23, 2012, when the El Paso County Board of Health adopted Chapter 5, Air Quality Regulations. In El Paso County, enforcement of the Colorado Air Quality Control Commission regulations remains within the purview of the APCD (PPACG, 2013).

Section 176(c) of the CAA is known as the General Conformity Rule and is codified as 40 CFR Part 51, Subpart W. Under the General Conformity Rule, no federal agency can approve any activity that does not conform to an applicable SIP. Specific conformity criteria are listed in 40 CFR § 51.858. The General Conformity Rule only applies in areas that are in non-attainment or maintenance (40 CFR 51.853 [k]).

Table 3.1. NAAQS for Criteria Pollutants

Pollutant	Primary/ Secondary	Averaging Time	Concentration	Criteria
Carbon Monoxide	Primary	8-hour	9 ppm	Not to be exceeded more than 1x per year
		1-hour	35 ppm	Not to be exceeded more than 1x per year
Lead	Primary/ Secondary	Rolling 3-month Avg	0.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide	Primary	1-hour	100 ppb	98th percentile, 3-yr average
	Primary/ Secondary	1-year	53 ppb	Annual mean
Ozone	Primary/ Secondary	8-hour	0.070 ppb	Annual 4th highest daily max 8-hour concentration, 3-yr average
Particulate Matter (2.5 µm)	Primary	1-year	12 µg/m^3	Annual mean, 3-yr average
	Secondary	1-year	15 µg/m^3	Annual mean, 3-yr average
	Primary/ Secondary	24-hour	35 µg/m^3	98th percentile, 3-yr average
Particulate Matter (10 µm)	Primary/ Secondary	24-hour	150 µg/m^3	Not to be exceeded more than 1x per year, 3-yr average
Sulfur Dioxide	Primary	1-hour	75 ppb	99th percentile of 1-hour daily max, 3-yr average
	Secondary	3-hour	0.5 ppm	Not to be exceeded more than 1x per year

ppb – parts per billion *µg/m^3 – micrograms per cubic meter* *ppm – parts per million*

Title V of the CAA Amendments of 1990 requires states to issue Field Operating Permits for major stationary sources of air emissions. A major stationary source would include a military base that emits more than 100 tons per year (TPY) of any one criteria air pollutant, 10 TPY of a hazardous air pollutant (HAP), or 25 TPY of any combination of HAPs. Emissions below these quantities are considered "*de minimis*". The Prevention of Significant Deterioration (PSD) requirements of the CAA affect construction of new major stationary emission sources in areas that attain the NAAQS and serves as a pre-construction permitting system.

Greenhouse gases (GHG) are gases that trap heat in the atmosphere. These emissions occur from natural processes as well as human activities, with the most common GHG being carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). The accumulation of GHG in the atmosphere regulates, in part, the earth's temperature; therefore, federal agencies are addressing emissions of GHG by reductions mandated in federal laws and EOs. In 2015, EO 13693, *Planning for Federal Sustainability in the Next Decade* was enacted with an objective of maintaining Federal leadership in sustainability and GHG emission reductions. On June 23, 2014, in *Utility Air Regulatory Group v. EPA*, the U.S. Supreme Court issued a decision concluding that the EPA may not treat GHG as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit; however, PSD permits that are otherwise required (due to emissions of criteria pollutants) may continue to require limitation on GHG based on applications of the Best Available Control Technology. Therefore, on January 21, 2016, Colorado's Air Quality Control Commission revised its Regulation Number 3 (5 CCR 1001-5) to state that a project determined to be a major source for a criteria pollutant will trigger PSD review for GHG if it is a new major source and has greater than 75,000 TPY of CO2 emissions or if it is an existing major source and has an increase of 75,000 TPY of CO2 emissions.

3.3.2 Existing Conditions

USAFA is within El Paso County, which in conjunction with Teller County, forms the Pikes Peak Region, one of eight multi-county areas used by Colorado Air Pollution Control Division of CDPHE to monitor local air pollution conditions within the state. According to CDPHE's 2016 Annual Report, the Pikes Peak Region currently has four active monitoring stations, which monitor for one or more of CO, SO2, O3, PM10, and PM2.5. One of the four Pikes Peak Region monitoring stations is located at the USAFA (near the south entrance along Monument Creek) and has monitored for O3 since June 1996. The Pikes Peak Region is considered to be in compliance with federal air quality standards. One exceedance of the SO2 standard occurred at the Pike Peak Region's Highway 24 monitoring station in 2015; however, the one-time exceedance did not result in a violation of the NAAQS. Nevertheless, Colorado Springs has been designated as a maintenance area for CO according to EPA's *Nonattainment Areas for Criteria Pollutants* (Green Book) which was last updated in September 2016. Colorado Springs designation as a maintenance area has been in place since 1999, following seven consecutive years of non-attainment between 1992 and 1998. The General Conformity Rule (40 CFR Part 51,

Subpart W) requires federal facilities in maintenance areas to complete an air conformity determination. Since Colorado Springs and El Paso County are both designated maintenance areas, the Proposed Action requires a conformity review or determination per 40 CFR § 93.153(b)(2). A conformity determination is completed for the Proposed Action to determine if the *de minimis* emission levels by pollutant or regional significance thresholds are exceeded. The corresponding *de minimis* level and threshold criteria for air quality for CO is 100 tons per year.

Annual reviews are conducted at each DoD installation in the Pikes Peak Region to ensure compliance with all State and federal regulations. According to CDPHE, USAFA currently emits approximately 30.898 TPY of CO, 36.55 TPY of NOx, 2.95 TPY of PM10, 2.89 TPY of PM2.5, 0.47 TPY of SO2, and 18.95 TPY of VOCs, an ozone precursor. Air emission source areas within USAFA include boilers, water heaters, fuel storage tanks, fuel service stations, and paint booths; however, USAFA is considered a synthetic minor source area and is not required to have Title V operation permits. Because the requirements of the General Conformity Rule and the focus on Colorado by CDPHE and El Paso County, only Colorado needs to be considered for the conformity applicability determination.

The EUL Area is currently vacant except for a small parking lot; therefore, no air pollutant emitter sources currently exist within the EUL Area. The EUL Area's nearest air emission sources include the USAFA North Gate and vehicles using North Gate Boulevard and I-25.

3.4 Water Resources

3.4.1 Definition of the Resource

Water resources include surface water, groundwater, wetlands, and floodplains, and stormwater management. The principal laws governing pollution of the nation's water resources are the federal Water Pollution Control Act of 1972, or Clean Water Act (CWA), and the federal Safe Drinking Water Act (SDWA) of 1974, which use water quality standards, permitting requirements, and monitoring to protect water quality. The CDPHE's Water Quality Control Commission (WQCC) is the administrative agency responsible for developing Colorado-specific water quality policy that complies with the federal CWA and SDWA, by authority granted in the Colorado Water Quality Act and its predecessor, the Colorado Water Pollution Control Act. The WQCC adopts water quality classifications and standards to protect beneficial uses of waters of the State, as well as various regulations aimed at achieving compliance with those classifications and standards. These standards are set forth in WQCC Regulations 11 and 31-43 (5 CCR 1002) and are used for assessing the quality of Colorado waters and for establishing regulatory requirements for activities that may impact water quality. The Water Quality Control Division is the agency principally responsible for implementing Colorado's discharge permit program and other regulations adopted by the WQCC.

3.4.1.1 Groundwater

Groundwater is the water that is stored in, and moves slowly through, spaces in underground layers of soil, sand, and rock. The speed at which water moves through an aquifer is dependent on size of the spaces in the soil or rock and how well these spaces are connected. The groundwater is discharged to the surface through springs into lakes and streams. It can also be brought to the surface through man-made wells. Groundwater is recharged by rain and snow melt and shortages occur when groundwater is used faster than it is recharged. The principal law governing pollution of the nation's groundwater is the federal SDWA. The SDWA is primarily administered by the EPA, which sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The CDPHE's WQCC establishes statewide standards and a system for classifying groundwater and adopting water quality standards for such classifications to protect existing and potential beneficial uses of groundwater in commission regulations 41-43 (5 CCR 1002).

3.4.1.2 Surface Water

Surface waters include lakes, rivers, streams, reservoirs, and wetlands. Surface waters and their associated ecosystems serve as habitat to many plant and animal species and also provide an easily used water source throughout the US. The principal laws governing pollution of the nation's surface water resources are the federal CWA and the federal SDWA. The EPA sets the standards for water pollution abatement for all waters of the US under the programs contained in the CWA; however, the CDPHE's WQCC provides basic standards, an antidegradation rule, and a system for classifying state surface waters and assigning water quality standards in commission regulations 31-39 (5 CCR 1002).

Impaired waters are those surface waters that fail to meet one or more state water quality standards. Every two years, states must publish lists (referred to as 303[d] lists) of those rivers, streams, and lakes that do not meet their designated uses because of excess pollutants. Total maximum daily loads (TMDLs) of pollutants for the listed water bodies are established by the CDPHE.

3.4.1.3 Wetlands

The United States Army Corps of Engineers (USACE) defines wetlands (in 33 CFR § 328.3[c]) 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 Wetland Delineation Manual defines wetlands as areas that have positive indicators for hydrophytic vegetation, wetland hydrology, and hydric soils (Environmental Laboratory, 1987). Water saturation (hydrology) largely determines how the soil develops and the types of plant and animal communities living in and

on the soil, which include both aquatic and terrestrial species. The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes) and promote the development of characteristic wetland (hydric) soils. Additionally, wetlands provide rich habitat for a diverse range of plant and animal species, protection from flooding and erosion, and are also important to the nutrient cycle.

Section 404 of the CWA authorizes the Secretary of the Army, acting through the USACE, to issue permits for the discharge of dredged or fill material into waters of the US, including wetlands. Waters of the US (33 CFR § 328.3[a]) are those waters used (currently or in the past) or susceptible to use in interstate or foreign commerce, subject to ebb and flow of tide, all interstate waters including interstate wetlands, territorial seas, tributaries to these waters, and waters adjacent to these waterbodies. Traditional navigable waters (TNWs), their adjacent wetlands, non-navigable tributaries of TNW that are relatively permanent waters (RPWs) and typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and wetlands that directly abut such non-navigable tributaries are also jurisdictional. In general, a seasonal RPW is described as intermittent, while a year-round RPW is described as perennial.

In accordance with USAFA's INRMP, a wetland delineation and an approved jurisdictional determination from USACE are necessary for any proposed projects that could affect a wetland or water of the United States, and any project that is anticipated to impact wetlands must acquire approval and the appropriate permits from USACE, the EPA, and the Colorado Department of Natural Resources (CDNR).

3.4.1.4 Floodplains

Floodplains are flat or nearly flat lands adjacent to a river or stream that experience occasional or periodic flooding. Floodplains comprise a floodway, which consists of the stream channel and adjacent areas that carry flood flows; and the flood fringe, which is the area drowned by the flood that does not experience a strong current. Floodplains typically are described as areas likely to be inundated by a particular flood. For example, a flood that has a 1-percent chance of occurring in any 1-year period is considered a 100-year floodplain.

The Federal Emergency Management Agency (FEMA) Flood Map Service Center is the official public source for flood hazard information. Because flood hazards are dynamic and can change frequently for a variety of factors including weather patterns, erosion and new development, FEMA flood maps are continually updated.

3.4.1.5 Stormwater Management

Stormwater runoff from construction activities can have a significant impact on water quality. As

stormwater flows over a construction site, it can pick up pollutants like sediment, debris, and chemicals and transport these to a nearby drainage system or directly to a river, lake, or coastal water. Polluted stormwater runoff can harm or kill fish and other wildlife. Sedimentation can destroy aquatic habitat, and high volumes of runoff can cause stream bank erosion.

Section 438 of the 2007 Energy Independence and Security Act (EISA) mandates that federal agencies protect water resources by reducing stormwater runoff from federal development projects. EISA's Section 438 requires that any federal development with a footprint exceeding 5,000 square feet maintain or restore pre-development hydrology with regard to temperature, rate, volume, and duration of flow to the maximum extent technically feasible using site planning, design, construction, and maintenance strategies. To comply with Section 438, agencies have two options: 1) manage rainfall on-site and prevent the offsite discharge of stormwater from rainfall events less than or equal to the 95th percentile rainfall event, or 2) manage rainfall on-site to meet pre-development runoff conditions using a site-specific hydrologic analysis. Federal agencies can comply with Section 438 by using a variety of stormwater management practices that are low impact including, for example, reducing impervious surfaces by using vegetative landscapes, porous pavements, cisterns and green roofs.

The CWA also regulates point discharge of pollutants to receiving waters of the US under the National Pollutant Discharge Elimination System (NPDES) program administered by the EPA or authorized states. In Colorado, CDPHE is authorized to implement the NPDES program except on federally-owned facilities and tribal lands where an NPDES permit is issued by EPA. The NPDES stormwater program requires construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more, including smaller sites in a larger common plan of development or sale, to obtain coverage under an NPDES permit for their stormwater discharges. Generally, construction sites can be covered under the state's General Permit for Construction, which requires, in most cases, the preparation and implementation of a SWPPP. DoD environmental regulations require installations to have detailed spill control and response procedures and to implement stormwater pollution prevention BMPs. Each installation maintains base-wide stormwater protection measures; Spill Prevention, Control, and Countermeasure (SPCC) Plans; and Hazardous Materials Management Plans. Compliance with these plans reduces the potential for adverse effects on water quality.

3.4.2 Existing Conditions

3.4.2.1 Groundwater

Groundwater beneath the EUL Area generally occurs in the heterogeneous, unconfined, unconsolidated Quaternary sediments (collectively referred to as alluvium) found on top of the underlying Dawson Arkose geologic unit. Based on surface water features and geological characteristics in the area, shallow groundwater is likely influenced by topography and major

surface water features including Monument Creek, located approximately 400 feet west of the EUL Area, and Smith Creek, located approximately 300 feet south of the EUL Area. Therefore, shallow groundwater in the EUL Area is expected to flow towards the west and south. Below the shallow groundwater-bearing alluvium, groundwater is stored within the Denver Basin, which is comprised of four aquifers including (from shallowest to deepest) the Dawson, Denver, Arapahoe, and Laramie-Fox Hills. Confining layers isolate the individual aquifers from each other and surficial recharge which limits inter-connection and results in the aquifer-bound groundwater being considered non-renewable. Wells installed proximal to the EUL Area extend to depths between 300 ft and 1,100 ft tapping the Dawson, Denver, and Arapahoe aquifers and are primarily used for irrigation or monitoring with the nearest well located approximately 1,900 ft to the southwest of the EUL Area.

Based on the geotechnical borings advanced by Kumar & Associates within the EUL Area in December 2018 and January 2019, the first groundwater encountered at the site is in the alluvial material and appears to be between 19.5 and 24 feet below the ground surface (bgs) south of North Gate Boulevard (within the EUL Area's Parcel B). Water was also encountered at 5.5 feet bgs north of North Gate Boulevard (within Parcel A of the EUL Area). The shallow groundwater observed within Parcel A occurred immediately above a sandstone bedrock, likely indicating a localized, perched condition which is limited in horizontal extent. This perched condition in shallow unconsolidated sediments is a common occurrence in the Denver Basin hydrogeologic setting and does not suggest a significant shallow source of groundwater. The limited extent of shallow saturated conditions is further supported by the lack of observed groundwater in the northeast portion of the EUL Area's Parcel A. Overall these geotechnical boring observations indicate shallow groundwater beneath the EUL property occurs as discontinuous lenses of saturated unconsolidated alluvial material or potentially weathered bedrock that is not immediately connected to the deeper regional scale groundwater present in the Dawson formation. The shallow groundwater is instead expected to be discharging to the nearby Monument and Smith Creeks.

3.4.2.2 Surface Water

The predominant surface water feature at USAFA is Monument Creek, which runs from north to south on the east side of the campus and west of the EUL Area, and it is one of the best remaining plains streams in the upper Arkansas River drainage (USAFA, 2018). USAFA is within the Arkansas River basin and comprises 12.4% of the 148,830-acre Monument Creek Watershed. The EUL Area is within Monument Creek's 32,090-acre Jackson Creek sub-watershed. The headwaters of Monument Creek are in springs in the Rampart Range north and west of USAFA, and nearly 75% of the watershed's drainage flows through USAFA in Monument Creek before exiting the southern boundary of the campus.

Smith Creek is a tributary to Monument Creek flowing from east to west and is south of the EUL Area. All tributary streams flowing into Monument Creek from the east, including Smith Creek,

have been impacted by urban development which produces increased stormwater runoff. Erosion and sedimentation have been severe in nearly all of the eastern tributaries, and some western tributaries have been degraded by increased runoff from on-base developments. Monument Creek and Smith Creek are perennial streams and among the most important natural resource features at USAFA, representing areas of concentrated biodiversity and important habitats, with Monument Creek and its tributaries serving as a refuge for the Preble's meadow jumping mouse, a federally listed (threatened) species (USAFA, 2018).

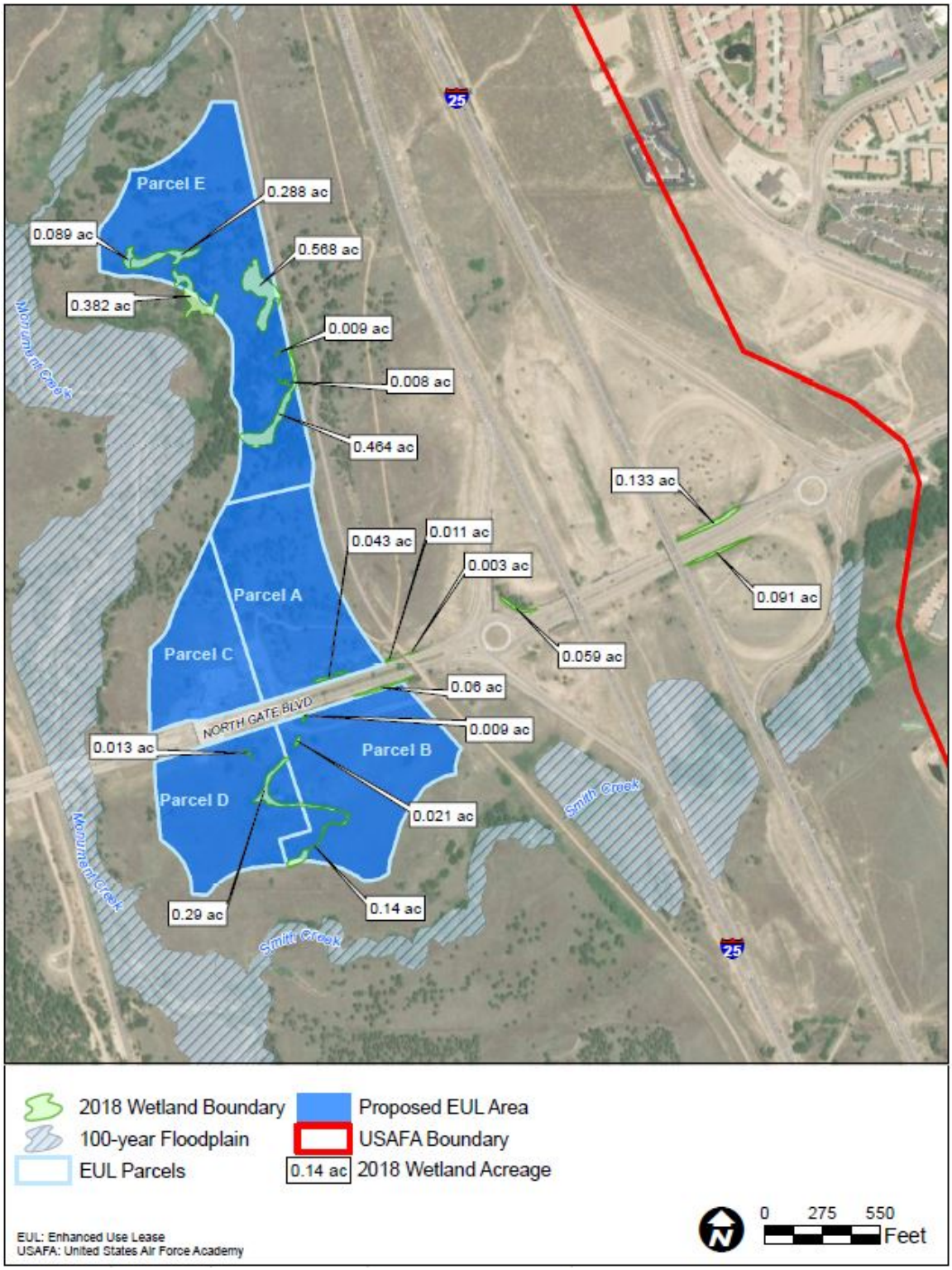
3.4.2.3 Wetlands

A wetland delineation was conducted within the EUL Area in October 2018. The 2018 delineation effort identified approximately 2.672 acres of wetlands within the EUL Area and 0.873 acres of wetlands within the TrueNorth Commons development footprint and confirmed the majority of the wetland boundaries previously identified in 2002. Approximately 1.8 acres of wetlands were identified within Parcel E of the EUL Area, which would not be impacted by the Proposed Action; however, approximately 0.59 acres of wetlands were identified within Parcels A, B, and D which would be eliminated from implementation of the Proposed Action. Furthermore, an additional approximately 0.29 acres of wetlands within roadside drainage ditches to the north and south of North Gate Boulevard would be impacted from installation of utility infrastructure for the Proposed Action. **Figure 3.2** identifies the 2018 boundaries and acreage of wetlands within or near the EUL Area, while **Appendix B** includes the 2018 wetland delineation report for the EUL Area. The delineation report was submitted to the USACE along with a request for an approved jurisdictional determination. Following review of the delineation report and a site visit by USACE staff, an Approved Jurisdictional Determination (AJD) was finalized on May 3, 2019. The AJD designates all wetlands identified within the EUL Area as non-jurisdictional and as a result, a CWA Section 404 permit is not required for the Proposed Action.

3.4.2.4 Floodplains

Floodplains at the Academy are found along riparian corridors and are most prevalent along Monument Creek. The applicable FEMA flood map for the area does not include a floodplain designation within the USAFA property, however the 10-year and 100-year floodplains were mapped in 2003 as identified in **Figure 3.2**. As outlined in the INRMP, any projects that are anticipated to significantly impact floodplains must undergo the NEPA process per 32 CFR Part 989, and any projects that permanently alter the hydrology of a floodplain must be reported to FEMA. None of the disturbance area for the Proposed Action is within the 100-year floodplain.

Figure 3.2 Wetlands and Floodplains within or near the Proposed EUL Area



3.4.2.5 Stormwater

In an effort to protect against sedimentation, USAFA adheres to NPDES permits that require certain soil erosion/construction BMPs. USAFA operates under an EPA-issued Multi Sector General Permit (an Industrial NPDES permit) that requires the development of a SWPPP. USAFA has also been issued a Municipal Separate Storm Sewer System (MS4) NPDES permit that requires the development of a Stormwater Management Plan (SWMP). Both plans work in tandem to identify potential contaminations sources, physically protect stormwater inlets through the implementation of BMPs, and conduct preventative stormwater pollution education and awareness among USAFA personnel.

USAFA's SWPPP identifies BMPs that prevent hazardous materials from contacting and contaminating stormwater runoff. Examples of BMPs include secondary containment structures, covered (sheltered) work areas, and personnel training. Stormwater BMPs were developed for several locations including Jacks Valley, the Cadet Area, the Community Center, the Main Airfield, and the USAFA composting facility, while the Monument Creek Watershed Restoration Master Plan (Matrix, 2016) identifies on-base and off-base projects and priorities for controlling erosion and sedimentation (USAFA, 2018).

The EUL Area is currently primarily undeveloped grassland and shrubland with a small paved parking area located in the area just north of North Gate Boulevard. Stormwater runoff currently flows relatively unencumbered to the west and southwest across the majority of the proposed EUL Area toward Monument Creek (west) and Smith Creek (south). Runoff is partially captured by grassy drainage ditches on the north and south sides of North Gate Boulevard, which divides the proposed EUL Area. Runoff captured in these ditches eventually feeds into Monument Creek and a drainage ditch that runs south from North Gate Boulevard in a circuitous route to terminate near the southwest corner of the proposed EUL Area's Parcel B.

3.5 Safety and Occupational Health

3.5.1 Definition of the Resource

Safety and Occupational Health, also commonly referred to as health and safety or workplace health and safety, is a multidisciplinary field concerned with the safety, health, and welfare of people at work. A safe environment is one in which there is little or no potential for death, severe injury, illness, or property damage. Construction activities are inherently dangerous and are overseen by OSHA, an agency of the U.S. government under the Department of Labor.

Title 32 CFR § 989.27 mandates that the EIAP for a proposed action assess direct and indirect impacts of proposed actions on the safety and health of Air Force employees and others at a

work site. The EIAP document is not required to specify compliance procedures; however, the EIAP documents should discuss impacts that require a change in work practices to achieve an adequate level of health and safety. Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and potentially susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. Activities that can be hazardous include transportation, maintenance and repair activities, and the creation of extremely noisy environments. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation process creates an unsafe environment for nearby populations. Extremely noisy environments can also mask verbal or mechanical warning signs such as sirens, bells, or alarms.

3.5.2 Existing Conditions

Because of the immediate nature of health and safety threats the ROI for this resource is defined as the area physically impacted by either construction or operations of the Proposed Action. The Project Area as previously defined is shown in **Figure 2.2**.

As described in **Section 2.3.5,** the current conditions at the EUL Property include a parking area and open space. The opportunity for death, severe injury, illness, or property damage to occur is limited to vehicular incidents in the parking area or on the adjacent roadway, slips, trips or falls typically associated with pedestrian activity, weather related issues typical of any outdoor activity or fire hazard in the semiarid grassland and woodland environmental endemic to the USAFA overall. None of the other type of health and safety risks (e.g. noise or chemical exposure) currently exist at the Project Area and those risks that are present are within the normal level of risk acceptable to the population and the existing environment in the Project Area is not considered unsafe. It should be noted on Northgate Boulevard prior to passing through gate, when USAFA receives a rare shipment of explosive material, the vehicle carrying the explosives is stopped and inspected on the northern most lane of the west bound side. This will require further review and a different solution.

3.6 Hazardous Materials and Waste

3.6.1 Definition of the Resource

The terms “hazardous material,” “hazardous waste,” and “hazardous substance” have very specific legal and scientific definitions in federal regulations.

3.6.1.1 Hazardous Materials Definition

"Hazardous materials" are defined under the US Department of Transportation (DOT) regulations (49 CFR Parts 100 through 199) as materials or substances the Secretary of Transportation has determined to present an unreasonable risk to safety, health, and property during transportation. Hazardous materials include hazardous substances, hazardous chemicals, and toxic chemicals. In general, these materials pose hazards because of their quantity, concentration, physical, chemical, or infectious characteristics. Hazardous materials are defined in AFI 32-7086 Hazardous Materials Management dated February 2015, to include any substance with special characteristics that could harm people, plants, or animals. DOT regulations include requirements for shipping papers, package marking, labeling, transport vehicle placarding, and training of personnel handling hazardous materials. Hazardous materials are also regulated by the Emergency Planning and Community Right-to-Know Act (40 CFR Parts 355 and 370). Transportation of hazardous materials is regulated by DOT under 49 CFR and CDOT under 8 Code of Colorado Regulations (CCR) 1507-9.

3.6.1.2 Hazardous Wastes Definition

"Hazardous wastes" are defined and regulated by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA considers a solid waste to be hazardous if it has properties that make it dangerous or capable of having a harmful effect on human health or the environment through specific attributes including certain levels of reactivity, ignitability, corrosivity, or toxicity, or is otherwise listed as a hazardous waste in 40 CFR Part 261. In general, RCRA regulations establish a federal program to manage hazardous wastes from cradle to grave, ensuring that hazardous waste is handled in a manner that is protective of human health and the environment. RCRA regulations include very detailed and specific requirements for facilities that generate, transport, treat, store, or dispose of hazardous wastes. The majority of RCRA-regulated hazardous waste in the U.S. is generated by large quantity generators (LQGs), defined as facilities that produce 1,000 kilograms (kg) (2,200 pounds [lbs]) or more of hazardous waste per calendar month or 1 kg (2.2 lbs) or more of acutely hazardous waste per calendar month. Small quantity generators (SQGs) are facilities generating greater than 100 kg (220 lbs) but less than 1,000 kg (2,200 lbs) of hazardous waste per calendar month and accumulating 6,000 kg (13,200 lbs) or less of hazardous waste on-site at any one time. All generators, unless they are "conditionally exempt" SQG (CESQGs) (those generating less than 100 kg of hazardous waste per calendar month or 1 kg or less of acutely hazardous waste per calendar month), are subject to RCRA requirements to obtain an EPA ID number, comply with hazardous waste accumulation and storage requirements, follow the manifest system, and meet recordkeeping and reporting requirements; however, CESQGs are subject to limited generator waste management standards and may be subject to DOT requirements.

3.6.2 Existing Conditions

3.6.2.1 Hazardous Materials

The operations at USAFA require the use of hazardous and nonhazardous materials such as fuels, solvents, lubricants, and caustics, which, if released to the environment, have the potential to impact air, soil, and water quality. The most common threat of hazardous materials at USAFA is the release of petroleum, oils, and lubricants (POLs) during the transfer and storage of fuels for aircraft, generators, or vehicles. In response, USAFA manages hazardous materials in accordance with 29 CFR § 1910.1200, Hazard Communication, and AFI 32-7086, Hazardous Materials Management (e.g., spill control, hazardous waste management, and stormwater pollution prevention). Additionally, contractors working at USAFA must follow these regulations.

USAFA's Hazardous Materials (HAZMAT) Emergency Planning and Response Plan (HAZMAT Plan) was prepared in accordance with AFI 32-7043, Hazardous Waste Management Guide, and describes preventive actions that are designed to lower the potential for hazardous material spills and prevent hazardous materials from entering the environment. The HAZMAT Plan also provides required notification procedures and details response actions in the event of a release. This plan also complies with AFI 32-4002, Hazardous Material Emergency Planning and Response Compliance; EPA requirements for SPCC plans; Emergency Planning and Community Right-to-Know Act; and Occupational Safety and Health Administration requirements. In addition, USAFA's Hazmat Management System minimizes and organizes the use of HAZMAT, facilitating the reduction of USAFA's hazardous waste generation.

The proposed EUL Area is predominantly undeveloped and unoccupied; therefore, hazardous materials including fuels are not known to be generated or used within the proposed EUL Area.

3.6.2.2 Hazardous Wastes

Hazardous waste from operations and facilities construction (including construction and demolition) at the USAFA is managed in accordance with AFI 32-7042 USAFA-Supplement, Solid and Hazardous Waste Compliance (November 2014) and RCRA regulations adopted and implemented under corresponding regulations found at Title 6 Code of Colorado Regulations [CCR] 1007-3. USAFA's *Waste Management Plan* outlines procedures for the proper accumulation, collection, transportation, and disposal of hazardous waste, ensuring disposal is legal and timely. Any hazardous waste generated at USAFA must be coordinated for turn in at the USAFA Hazardous Waste Site. Hazardous wastes are not known to be generated within the proposed EUL Area.

3.7 Biological Resources

3.7.1 Definition of the Resource

Biological resources include plants, animals, and the habitats in which these species occur. Vegetation and wildlife at USAFA have been well documented by USAFA staff and through cooperative programs with the Colorado Parks and Wildlife (CPW), the Nature Conservancy, the Colorado Natural Heritage Program (CNHP), and the USFWS. For this EA, biological resources are segregated into the following subcategories: vegetation, wildlife, and special status species. Vegetation and wildlife refer to the plant and animal species, respectively, that characterize the region, while special status species are plants and animals in need of protection to prevent extinction.

3.7.1.1 Vegetation

Noxious weeds are plant species that are ecologically and economically damaging, non-native and invasive. Historically, invasive, non-native plants have also been used for erosion control or landscaping; however, areas invaded by noxious weeds are often largely dominated by that species, displacing native species and ecosystems, reducing the quality of wildlife forage, and often increasing the risk of fire. Non-native invasive plants have subsequently been determined to be a major contributor to destabilization of sensitive habitats resulting in the promulgation of various regulations to control noxious, exotic, and invasive species. The Federal Noxious Weed Act (7 USC §2801 et seq.), enacted in January 1975, established a federal program to control the spread of noxious weeds. It gave the Secretary of Agriculture authority to designate plants as noxious weeds by regulation, and to inspect, seize and destroy products, and to quarantine areas, if necessary to prevent the spread of such weeds. The Act also prohibited movement of all such weeds through interstate and foreign commerce unless permitted. Additionally, Section 1453 of the 1990 Farm Bill (Public Law 101-624) added Section 15 to the Act establishing provisions for the management of undesirable plants on Federal lands, defining undesirable plant species as undesirable, noxious, harmful, exotic, injurious, or poisonous but excluding any federally listed threatened or endangered species or species indigenous to the area in question. AFI 32-7064, *Integrated Natural Resource Management*, requires the control of noxious, exotic, and invasive species, and as specified in paragraph 16.4, special natural areas that contain natural resources warranting special protection efforts may, where consistent with the military mission, be designated in the INRMP as Special Natural Areas. EO 13112, *Invasive Species*, was issued in 1999 to enhance federal coordination and response to the complex and accelerating problem of invasive species, requiring Federal agencies to prevent the introduction of invasive species, detect and control populations of invasive species, and restore native species and habitat conditions in ecosystems that have been invaded. The EO defines an invasive species as a species not native to the ecosystem whose introduction as a result of human activity causes or is likely to cause economic or environmental harm or harm to human health (NISC, 2005).

The 1990 Colorado Weed Management Act (as amended in 1996 and 2003 and renamed the Colorado Noxious Weed Act) requires the adoption of management plans for undesirable plants, authorizes the State to list and publish designated noxious weeds, and develops management objectives for noxious weed species classified as List A or List B species. The 2003 Colorado Noxious Weed Act specifies that certain noxious weeds (List A species) must be eradicated, while others (List C species) will no longer be mandated for control by the State. DoD installations do not formally adopt State noxious weed lists and management priorities; however, State noxious weed lists do serve as guidance for developing management priorities. Additionally, an El Paso County ordinance regulates the management of undesirable plants on private and public lands within the County, including leafy spurge, diffuse knapweed, Russian knapweed, spotted knapweed, Canada thistle, and purple loosestrife, and designates musk thistle and yellow toadflax as potentially undesirable. The 2017 El Paso County Noxious Weed Management Plan provides guidance on managing the noxious weeds that represent a threat to the natural and agricultural ecosystems of El Paso County.

3.7.1.2 Wildlife

The 1960 Sikes Act, 16 U.S.C. § 670a et seq requires each military installation having significant natural resources to prepare an INRMP in cooperation with the USFWS and the appropriate state fish and wildlife agency. In addition, it is required that the resulting Plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources. Currently, USAFA conducts annual revisions of the INRMP in consultation with its Sikes Act partners, with the latest revision completed in February 2019.

The 1934 Fish and Wildlife Coordination Act (16 USC 661-667e) (as amended) requires consultation with the USFWS and the fish and wildlife agencies of States where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted . . . or otherwise controlled or modified" by any agency under a Federal permit or license. The purpose of the act is to recognize the vital contribution of wildlife resources to the Nation and to require equal consideration and coordination of wildlife conservation with water resources development programs.

3.7.1.3 Special Status Species

Special-status species are subject to regulations under the authority of federal and state agencies. Special status species include species designated as threatened, endangered, or candidate species by state or federal agencies. The 1973 ESA provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found by regulating or prohibiting activities that would adversely impact any listed species or its supporting habitat including harassment, harm, pursuit, hunting, shooting, wounding, killing, trapping, capturing, or collecting any members of the species. The lead federal agencies

for implementing ESA are the USFWS and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS). The law requires federal agencies, in consultation with the USFWS and/or the NMFS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species.

Under the ESA (16 USC §1531 et seq.), an endangered species is defined in the ESA, 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 an endangered species in the foreseeable future. Candidate species are those species for which the USFWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher-priority listing activities. Sensitive habitats include those areas designated by the USFWS as critical habitat protected by the ESA and sensitive ecological areas as designated by state or federal rulings. The USFWS also maintains a species of conservation concern list. This list includes unprotected species that are likely to become candidate species in the future under the ESA. USFWS/NMFS also maintains a list of species considered to be candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, USFWS/NMFS has attempted to advise government agencies, industry, and the public that these species are at risk and might warrant future protection under the ESA. Listed species may be considered threatened or endangered for a variety of reasons although the main reason is typically a need for specialized habitats or habitat destruction.

The USFWS removed the bald eagle from the list of species protected under the ESA in July 2007. However, the bald eagle continues to be protected under the federal Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act. The BGEPA (16 USC §668a-d) was enacted to protect America's national symbol, the bald eagle (*Haliaeetus leucocephalus*). The golden eagle is a similar-appearing eagle, especially in immature life stages, and, therefore, was added to ensure protection of the bald eagle. The BGEPA, originally passed in 1940 and as amended, provides for the protection of the bald eagle and the golden eagle (*Aquila chrysaetos*) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. These provisions protect inactive nests and regulate activities that may cause a disturbance to a nesting pair. The USFWS defines disturbance to eagles as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information (1) injury to the eagle, (2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment" (50 CFR § 22.3).

The 1918 Migratory Bird Treaty Act (MBTA) (16 USC §703-712) authorizes the US commitment to comply with international conventions (i.e., with Japan, Russia, Canada, and Mexico) for the

protection of migratory bird resources. The conventions protect selected species of migratory birds that occur in the US and each country at some time during the annual life cycle of the species. Birds not protected under the MBTA include the European starling, house sparrow, and common pigeon: all other birds are included in the MBTA. EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, was signed by President Clinton in January 2001. The EO directs executive departments and agencies to take further actions to implement the MBTA by developing a Memorandum of Understanding with the USFWS to promote the conservation of migratory bird populations.

The 1988 amendment to the Fish and Wildlife Conservation Act mandated USFWS to identify species, subspecies, and populations of all nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA. The 2008 Birds of Conservation Concern (BCC) list is the most recent list identifying non-federally listed migratory and non-migratory bird species that represent the highest conservation priorities. The BCC list is available at national and regional scales; the region encompassing USAFA is the Mountain-Prairie Conservation Region.

Additionally, Colorado Parks and Wildlife Commission sets regulations and policies for Colorado's state parks and wildlife programs, which are enforced by CPW. CPW issues hunting and fishing licenses, conducts research to improve wildlife management activities, protects high priority wildlife habitat through acquisitions and partnerships, provides technical assistance to private and other public landowners concerning wildlife and habitat management and develops programs to understand, protect and recover threatened and endangered species. In addition to federally-listed species, the CPW lists other plants and animals as state threatened, endangered, candidate and species of concern (which are not statutorily protected). Finally, the CNHP tracks and ranks Colorado's rare and imperiled species and habitats and provides information and expertise on these topics to promote the conservation of Colorado's valuable biological resources.

3.7.2 Existing Conditions

3.7.2.1 Vegetation

USAFA is situated within the foothills of the Colorado Front Range, which serves as an ecological transition zone between the Great Plains and Rocky Mountains characterized by high species diversity within a mosaic of habitat types. Vegetation types at USAFA are generally divided into montane and foothill zones. USAFA's montane zone is limited to the western edge of the campus and encompasses mixed conifer forests between 8,000 and 9,000 feet above mean sea level (AMSL) within the steep slopes of the Rampart Range, while USAFA's foothill zone includes various plant communities between 6,000 and 8,000 feet AMSL, including the Douglas fir

(*Pseudotsuga menziesii*)/white fir (*Abies concolor*) woodlands, ponderosa pine (*Pinus ponderosa*) woodlands, oak shrubland, grasslands, and riparian areas.

Common tree species within USAFA's montane zone include Douglas fir, white fir, ponderosa pine, limber pine (*Pinus flexilis*), blue spruce (*Picea pungens*), Englemann spruce (*Picea englemannii*), and common juniper (*Juniperus communis*), while dominant shrubs in the montane zone include kinnikinnik (*Arctostaphylus adenotricha*) and mountain mahogany (*Cercocarpus montanus*). However, the EUL Area is situated within USAFA's foothill zone; therefore, vegetation within USAFA's montane zone will not be further evaluated within this EA.

Moving from the western montane zone toward the east, vegetation grades from the montane conifer forests into an assemblage of woodlands, oak shrublands, and plains grasslands to form the foothills zone. Within the foothills zone, the dominant woodland community is the ponderosa pine woodlands that occur on drier sites which grade shrublands and grasslands with increasing dryness, while Douglas fir and occasional white fir woodlands are limited to moist, north-facing slopes. Similar to their montane counterparts, Douglas-fir woodlands within the foothill zone also include common juniper and mountain mahogany in addition to waxflower (*Jamesia americana*).

Ponderosa pine woodlands tend to have clusters of trees separated by large expanses of open land, giving a park-like appearance to these communities, and frequently include gooseberries and currants (*Ribes aureum* and *Ribes cereum*), yellow mountain parsley (*Pseudocymopterus montanus*), mountain muhly (*Muhlenbergia montana*), ninebark (*Physocarpus monogynus*), and Gambel oak (*Quercus gambelii*).

USAFA's oak shrublands prevail on mesas and dry, south-facing slopes and are dominated by Gambel oak, which tend to grow in dense bunches in areas where soils are deep. Within the southern portion of USAFA, oak shrublands include Piñon pine (*Pinus edul*is) and one-seeded juniper (*Sabina monosperma*), which represent the northeastern extent of these southwestern ecological communities. The oak shrublands also include an occasional ponderosa pine, while principal shrubs within the oak shrublands include mountain mahogany, skunkbrush (*Rhus trilobata*), Western serviceberry (*Amelanchier alnifolia*), ocean spray (*Holodiscus dumosus*), Boulder raspberry (*Oreobatus deliciosus*), and snowberry (*Symphoricarpus albus* and *S. occidentalis*), representing a blend of plains and foothill species.

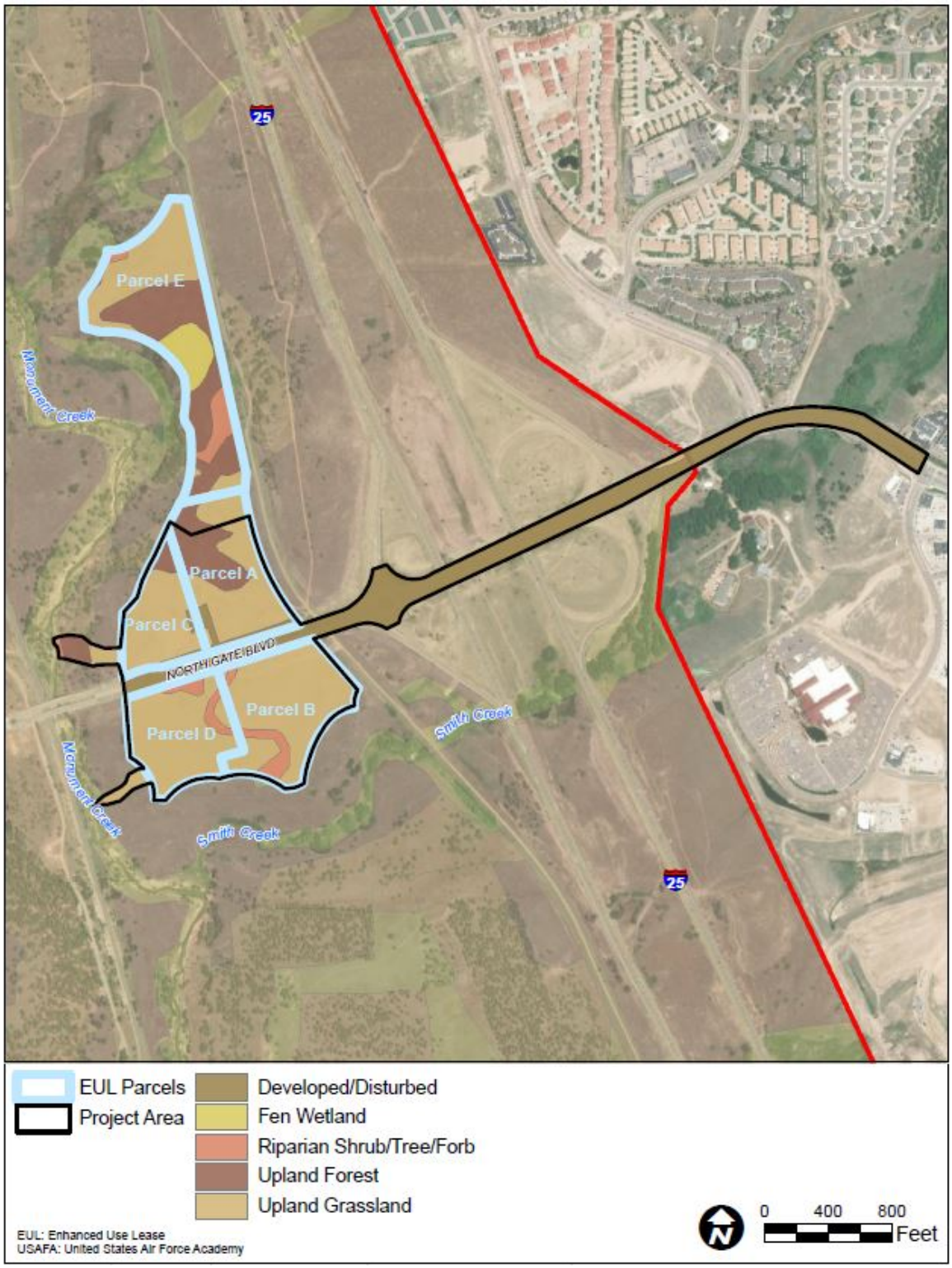
The majority of USAFA's eastern boundary, including the EUL Area, is plains grassland dominated by short-grass prairie species including blue grama (*Bouteloua gracilis*), little bluestem (*Schizchyrium scoparium*), fringed sage (*Artemisia frigida*), and Spanish bayonet (*Yucca glauca*) as well as mountain muhly, Parry oatgrass (*Danthonia parryi*), big bluestem (*Andropogon gerardii*), western wheatgrass (*Pascopyrum smithii*), prairie sandreed (*Calamovilfa longifolia*), and needle-and-thread grass (*Hesterostipa comata*).

Monument Creek and its major tributaries, including Smith Creek to the south of the EUL Area, represent USAFA's riparian plant communities. These areas are lined with cottonwoods (*Populus angustifolia* and *Populus deltoides*) and willows (*Salix exigua* and *Salix amygdaloides*) as well as herbs including shooting star (*Dodecatheon pulchellum*), bunchberry (*Chamaepericlymenum canadense*), and twinflower (*Linnea borealis*).

Several aggressive species of invasive plants have been identified within the USAFA property, usually in areas where activities have resulted in disturbed soils causing a loss of native vegetative cover. USAFA's 2015 Integrated Noxious Weed Management Plan (INWMP) includes a combination of weed control strategies to protect and/or achieve lasting restoration of native plant communities and the natural processes that support them in the most efficient and effective manner. Various noxious weed surveys at USAFA have identified 8,308 locations of at least 25 noxious weed species (Colorado State List A, B, C). The 2015 INWMP targets 20 weed species including 17 species on the Colorado State Noxious Weed List (1 List A, 15 List B, and 1 List C) and three species not contained on the State Weed List. The 20 weed species targeted by USAFA's 2015 INWMP include myrtle spurge (*Euphorbia myrsinites*), boucingbet (*Saponaria officinalis*), bull thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), common teasel (*Dipsacus fullonum*), dalmation toadflax (*Linaria dalmatica*), Dame's rocket (*Hesperis matronalis*), hoary cress/ whitetop (*Cardaria draba*), houndstongue (*Cynoglossum officinale*), knapweeds (*Centaurea* spp.), leafy spurge (*Euphorbia esula*), musk thistle (*Carduus nutans*), Russian knapweed (*Acroptilon repens*), Russian olive (*Elaeagnus angustifolia*), Scotch thistle (*Onopordum acanthium*), yellow toadflax (*Linaria vulgaris*), salt cedar/tamarisk (*Tamarix ramosissma*), common St. Johnswort (*Hypericum perforatum*), Siberian peashrub (*Caragana arborescens*), and Tatarian honeysuckle (*Lonicera tatarica*).

According to the 2018 INRMP, the EUL Area is primarily comprised of upland grassland and upland forest communities but also includes minor amounts of riparian shrub/tree/forb, special aquatic sites (wetlands), and developed/disturbed areas, as shown in **Figure 3.3**. Additionally, due to its proximity to Monument Creek, a CNHP-identified Potential Conservation Area (PCA), the EUL Area is within one of USAFA's Special Weed Management Areas, meriting careful noxious weed management attention. Diffuse and spotted knapweed, Canada thistle, musk thistle, yellow toadflax, common St. Johnswort, common teasel, houndstongue, and bull thistle have all been observed to occur within the EUL Area.

Figure 3.3 Vegetative Cover in the Proposed EUL Area and Project Area



3.7.2.2 Wildlife

USAFA contains a variety of wildlife species due to its natural habitat diversity at the convergence of north-south and plains-mountains transition zones, topographic variation, the presence of high-quality riparian areas, proximity to the undeveloped Pike National Forest and its active preservation of large uninterrupted wildlands. While the majority of animal species observed at USAFA are associated with certain habitats, a few species occupy such a diverse range of habitat that they could potentially be found across USAFA, including the striped skunk (*Mephitis mephitis*) and raccoon (*Procyon lotor*) as well as the short-horned lizard (*Phrynosoma douglassi*), bullsnake (*Pituophis melanoleucus*), and Western rattlesnake (*Crotalus viridis)*.

USAFA's Douglas fir and ponderosa pine woodlands communities include American elk, mule deer, Abert's squirrel, black bear, and coyote (*Canis latrans*) as well as wild turkey (*Meleagris gallopavo*), broad-tailed hummingbird (*Selasphorus platycercus*), Williamson's sapsucker (*Sphyrapicus thyroideus*), and pygmy nuthatch (*Sitta pygmaea*).

Wildlife in USAFA's oak shrubland community include mule deer and white-tailed deer, mountain lion, cottontail rabbit, coyote, and red fox (*Vulpes vulpes*). Examples of typical birds in this area include the red-tailed hawk (*Buteo jamaicensis*), wild turkey, prairie falcon (*Falco mexicanus*), spotted towhee (*Pipilo erythrophthalmus*), and scrub jay (*Aphelocoma coerulescens*).

USAFA's grassland communities include mammals such as coyote, red fox, cottontail rabbits, Gunnison's prairie dog (*Cynomys gunnisoni*), spotted ground squirrel (*Spermophilus spilosoma*), northern pocket gopher (*Thomomys talpoides*), and Western harvest mouse (*Reithrodontomys megalotis*) and birds such as the rough-legged hawk (*Buteo lagopus*), prairie falcon (*Falco mexicanus*), Western kingbird (*Tyrannus tyrannus*), Western bluebird (*Sialia mexicana*), vesper sparrow (*Pooecetes gramineus*), red-tailed hawk (*Buteo jamaicensis*), wild turkey, and scrub jay (*Aphelocoma coerulescens*). Reptiles such as the short-horned lizard (*Phrynosoma douglassi*) and western rattlesnake (*Crotalus viridis*) also occur in these areas.

Wildlife in USAFA's riparian zones include various species found in other habitats include mammals such as white-tailed deer, beaver (*Castor canadensis*), several bat species, muskrat (*Ondatra zibethica*), gray fox (*Urocyron cinereoargenteus*), cottontail rabbit, raccoon (*Procyon lotor*), meadow vole (*Microtus pennsylvanicus*), Montane shrew (*Sorex monticolus*), Preble's meadow jumping mouse (*Zapus hudsonius preblei*); birds such as the great blue heron (*Ardea herodias*), spotted sandpiper (*Actitis hypoleucos*), orange-crowned warbler (*Vermivora celata*), common yellowthroat (*Geothylpis trichas*), Wilson's warbler (*Wilsonia pusilla*), yellow warbler (*Dendroica petechia*), American goldfinch (*Carduelis tristis*), and broad-tailed hummingbird (*Selasphorus platycercus*) and amphibians such as the chorus frog (*Pseudacris triseriata*) and northern leopard frog (*Lithobates pipiens*).

USAFA's aquatic habitats include cold-water perennial streams in the southern half of USAFA (West Monument Creek and Stanley Creek) which support reproducing populations of brook trout (*Salvelinus fontinalis*), while the warmer waters of Monument Creek contain nine species of native nongame fish including white sucker (*Catostomus commersoni*), longnose sucker (*Catostomus catostomus*), longnose dace (*Rhinichthys cataractae*), creek chub (*Semotilus atromaculatus*), brook stickleback (*Culaea inconstans*), fathead minnow (*Pimephales promelas*), Central stoneroller (*Campostoma anomalum),* bigmouth shiner (*Notropis dorsalis*), and green sunfish (*Lepomis cyanellus*) (INRMP, 2018). Populations of Arkansas darter (*Etheostoma cragini*) and greenback cutthroat trout (*Oncorhynchus clarki stomias*) no longer exist within Monument Creek or its tributaries.

Reservoirs, lakes, and beaver ponds within USAFA also support various waterbirds including green-winged teal (*Anas crecca*), mallard (*Anas platyrhynchos*), American coot (*Fulica americana*), Canada goose (*Branta canadensis*), great blue heron (*Ardea herodias*), and belted kingfisher (*Ceryle alcyon*), while recreational fishing lakes are stocked with hatchery-raised rainbow trout (*Oncorhynchus mykiss*) and channel catfish (*Ictalurus punctatus*) as well as sterile hybrid grass carp (*Ctenopharyngodon idella*) to control aquatic weeds.

3.7.2.3 Special Status Species

The USFWS Information, Planning, and Consultation (IPaC) System and the CPW website were reviewed for the most up-to-date information concerning federally and state threatened and endangered species that have the potential to occur within or near the EUL Area. **Table 3.2** identifies 13 federal and state threatened and endangered species listed by the USFWS and CPW that were determined to likely to be present in El Paso County or that could be affected by projects in El Paso County. The table includes the listing status and whether potential habitat is present in the EUL Area.

Extensive surveys for rare species have been conducted on USAFA between 1992 and 2012 (USAFA, 2018). Based on the survey results and existing habitat within the ROI, only one of the federally listed species initially considered as potentially occurring on USAFA, the Preble's meadow jumping mouse (PMJM), has the potential to occur within the ROI. Additional information on the evaluation and elimination from further consideration for other federal and state threatened and endangered species potentially occurring in El Paso County is detailed in the 2018 BA conducted for the proposed EUL Area.

Table 3.2 Federal and State Threatened & Endangered Species Potentially Found in El Paso County or Potentially Affected by Projects in El Paso County.

Common Name	Scientific Name	Federal Status[1]	State Status[1]	Habitat	Potential Habitat Present
Birds					
Interior least tern	*Sterna antillarum athalassos*[2]	E	E	Sandy/pebble beaches on lakes, reservoirs, and rivers	No depletions anticipated[2]
Mexican spotted owl	*Strix occidentalis lucida*[3]	T	T	Closed canopy forests in steep canyons	No
Burrowing owl	*Athene cunicularia*	NL	T	Agricultural land; barren/sparsely vegetated; grassland; mixed shrubland; sagebrush shrubland	No
Piping plover	*Charadrius melodus*[2]	T	T	Sandy lakeshore beaches and river sandbars	No depletions anticipated[2]
Whooping crane	*Grus americana*[2]	E	E	Mudflats around reservoirs and in agricultural areas	No depletions anticipated[2]
Mammals					
North American wolverine	*Gulo gulo luscus*	P	E	Subalpine forests above 9,000 feet in elevation	No
Preble's meadow jumping mouse	*Zapus hudsonius preblei*[3]	T	T	Shrub riparian/wet meadows	Yes
Fish					
Arkansas Darter	*Etheostoma cragini*	NL	T	Shallow, clear, sandy streams with spring-fed pools and abundant rooted aquatic vegetation	No
Greenback cutthroat trout	*Oncorhynchus clarki stomias*	T	T	Gravelly headwater streams or mountain lakes	No
Pallid sturgeon	*Scaphirhynchus albus*[2]	E	NL	Large, turbid, free-flowing rivers with a strong current and gravelly or sandy substrate	No depletions anticipated[2]
Insects					
Pawnee montane skipper	*Hesperia leonardus montana*	T	NL	Dry, open ponderosa pine forests containing open meadows dominated by blue grama and prairie gayfeather in foothill locations	No
Plants					
Ute ladies'-tresses orchid (ULTO)	*Spiranthes diluvialis*	T	NL	Moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes below 7,800 feet in elevation	No
Western prairie-fringed orchid	*Platanthera praeclara*[2]	T	NL	Mesic and wet prairies, sedge meadows	No depletions anticipated[2]

[1]T = Threatened Species, E = Endangered Species, P = Proposed Threatened Species, NL = Not Listed
[2]Water depletions in the Platte River Basin may affect the species and/or critical habitat in downstream reaches in other counties or states. Suitable habitat for these species is not present in EUL Area.
[3]There is critical habitat for the species in the county.
Source: CPW 2019 and USFWS 2019

Extensive surveys for rare species have been conducted on USAFA between 1992 and 2012 (USAFA, 2018). Based on the survey results and existing habitat within the ROI, only one of the federally listed species initially considered as potentially occurring on USAFA, the PMJM, has the

potential to occur within the ROI. The wolverine has no suitable habitat, historical range, and/or surveyed presence at USAFA; therefore, this species is not likely to be found on the installation and was eliminated from further analysis. Ute ladies' tresses (ULTO) is a riparian orchid species endemic to Colorado; however, no individuals of the species have been recorded in vegetation surveys of USAFA including the proposed EUL Area. Additionally, while the Monument Creek riparian corridor broadly meets ULTO habitat criteria, suitable ULTO habitat is not present in the proposed EUL Area as a result of prior channel degradation limiting wetland vegetation to narrow margins along the toes of channel banks subject to frequent scour events. As a result, ULTO was eliminated from further concern. The Platte River Basin species including the pallid sturgeon (*Scaphirhynchus albus*), least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), whooping crane (*Grus americana*), and western prairie fringed orchid (*Platanthera praeclara*) were identified as potentially occurring in the El Paso County; however, these species need only be considered for water-related activities and usage in the North Platte, South Platte, and Larimer River Basins that may affect these species in Nebraska. No suitable habitat or documented populations of these species occur in the EUL Area; therefore, the Platte River Basin species were eliminated from further concern. The burrowing owl does not have suitable habitat in the proposed EUL Area but is discussed further under Birds of Conservation Concern below. The Mexican spotted owl is a resident of steep exposed cliffs; canyons that are characterized by pinyon-juniper; and old-growth forests mixed with Douglas-fir, ponderosa pine, and white fir. Suitable habitat for the Mexican spotted owl is not present within the proposed EUL Area; therefore, this species is not likely to occur and was eliminated from further analysis. Finally, the Pawnee montane skipper occurs in dry open ponderosa pine woodlands at elevations between 6,000 ft and 7,500 ft AMSL and requires blue grama (*Bouteloua gracilis*) and prairie gayfeather (*Liatris punctata*) as groundcover. While the proposed development area contains the groundcover required for the skipper, the proposed EUL Area is approximately 30 miles to the southeast of the known geographical range for the species, which occurs in southern Jefferson County and northern Douglas County; therefore, the Preferred Alternative would have no effect on the Pawnee montane skipper and the species was eliminated from further concern. Additional information on the evaluation and elimination from further consideration of federal and state threatened and endangered species potentially occurring in El Paso County is detailed in the 2018 BA conducted for the proposed EUL Area.

The federally-threatened PMJM is the only breeding, resident species at USAFA that is protected under the ESA. The PMJM is a small golden rodent with a conspicuous dark dorsal band, large well-developed hind legs and feet, and an extremely long tail. The PMJM generally occurs below an elevation of 7,800 feet in foothills and lowlands with medium to high moisture along permanent or intermittent streams from southeastern Wyoming to central Colorado in the North Platte, South Platte, and Arkansas River watersheds. PMJM habitat is typically comprised of well-developed riparian vegetation with adjacent, relatively undisturbed grassland communities and a nearby water source, while PMJM upland habitats are usually immediately adjacent to the riparian habitats or within 300 feet of the 100-year floodplain. In Colorado, the

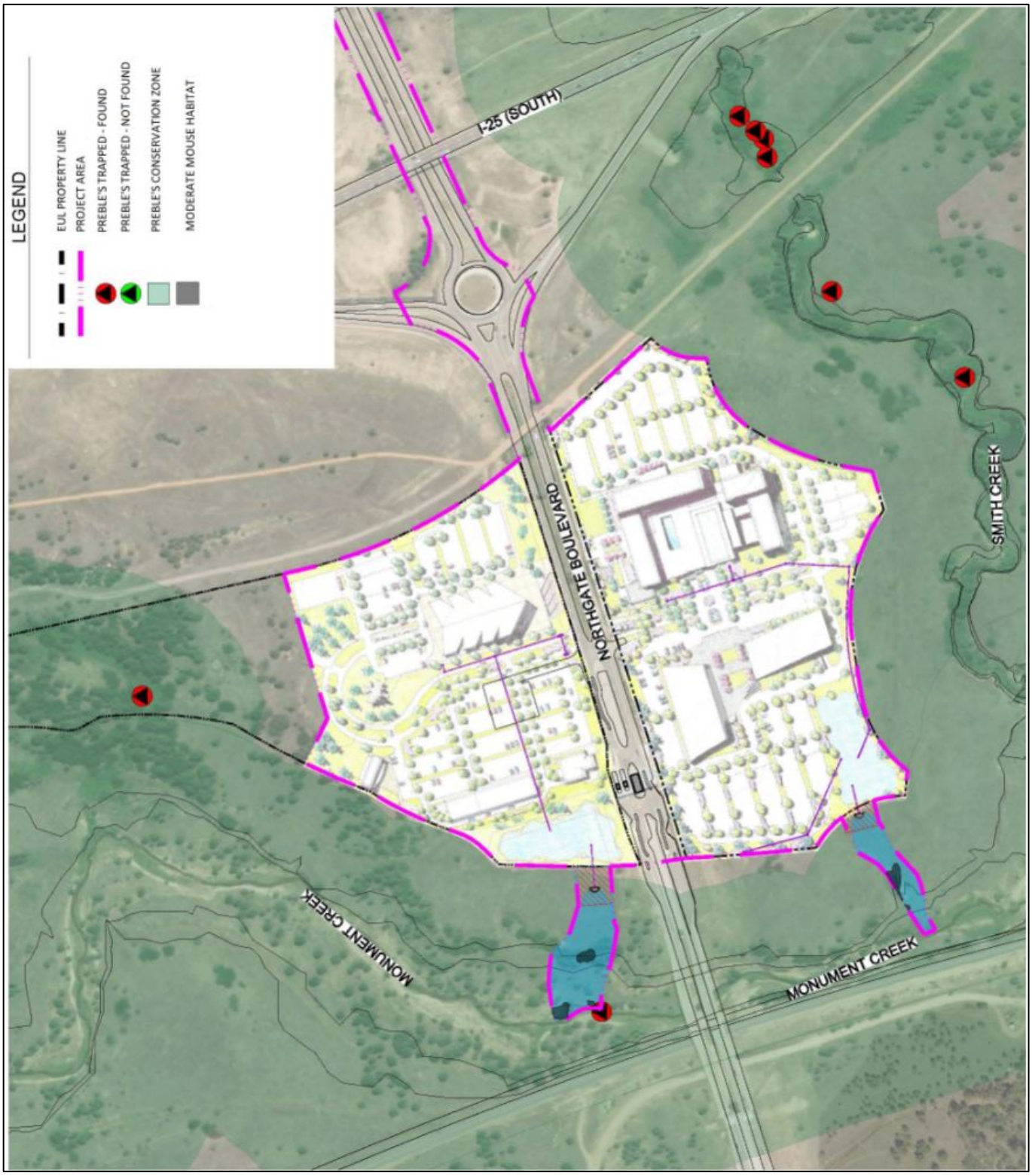
subspecies is currently documented in seven counties with one of the largest and most stable populations occurring along USAFA riparian areas, typically within the 100-year floodplain of Monument Creek and its tributaries (USAFA, 2018).

Initially found on USAFA in 1994 by the CNHP, the PMJM was listed as threatened by the USFWS in May 1998. Following listing, USAFA entered formal consultation with the USFWS on the PMJM, as required by Section 7 of the ESA. In April 2000, the USFWS rendered a "no jeopardy" Biological Opinion for USAFA's proposed actions in the PMJM habitat and declined to designate Critical Habitat for the PMJM on USAFA land. Conditions of the "no jeopardy" Biological Opinion included the development of a Conservation Agreement, which USAFA and USFWS signed in June 2000. Since initiation, USAFA has adhered to the terms and conditions of the PMJM Conservation Agreement, renewing every five years with the latest renewal in November 2014.

The Academy supports a significant mouse population and the greatest extent of contiguous suitable habitat in the Arkansas River Basin; therefore, USAFA's management and oversight, as conducted in accordance with the 2015 *Preble's Conservation Agreement,* is critical for the long-term conservation and recovery of the species. Critical habitat for this species has been designated near USAFA including portions of Monument and Smith Creeks upstream of I-25, but critical habitat remains undesignated within the installation due to a Department of Defense exemption under 16 U.S.C. 1533 (a)(3)(B)(i) and 50 CFR Part 424 pertaining to the implementation of an approved INRMP. Nevertheless, USAFA's PMJM Conservation Agreement with USFWS establishes a PMJM Conservation Area. USAFA's PMJM Conservation Area is based on a delineation of habitat within 300-feet of the upper edge of a 100-year floodplain and includes both riparian and adjacent upland mouse habitat totaling approximately 3,300 acres of the campus.

In El Paso County, the PMJM is known to occur throughout the Monument Creek watershed and have been captured along Monument Creek and Smith Creek adjacent to the proposed EUL Area in recent years (**Figure 3.4**). A portion of Parcel E is identified to be co-located with the PMJM Conservation Area; however, the Proposed Action evaluated in this EA does not include activity in Parcel E. The Proposed Action would entail installation of stormwater infrastructure in the PMJM Conservation Zone and stormwater runoff from the Proposed Action would potentially flow through the PMJM Conservation Area. **Figure 3.4** shows the boundaries of USAFA's PMJM conservation zone identified along Monument and Smith Creeks and known capture sites near the Project Area.

Figure 3.4. Proposed Short-Term Direct and Long-Term PMJM Impact Areas



Bald eagles live near large bodies of water for foraging, with forested habitat for nesting and roosting. In Colorado, golden eagles live along the Rocky Mountain Front Range featuring native vegetation and prey on mainly small to medium-sized mammals. Although foraging occurs in open habitats, nesting usually occurs on cliffs and steep escarpments. No known nesting or winter/summer foraging areas for bald or golden eagles occur in the vicinity of the Proposed Action. According to CPW 2017 species mapping data, the EUL Area does not currently support nesting or roosting sites for bald eagles and is not within known bald eagle forage zones. The nearest bald eagle winter foraging area is mapped along the headwaters of East Cherry Creek, approximately 11 miles northeast of the EUL Area, while the nearest summer foraging area for bald eagles is shown at Rampart Reservoir approximately 7 miles southwest of the EUL Area. Additionally, the nearest bald eagle nest site is along Trout Creek slightly northeast of Westcreek, Colorado approximately 17 miles northwest of the EUL Area. Golden eagle mapping is not provided by CPW; however, golden eagles have been observed year-round at Mueller State Park, Cheyenne Mountain State Park, and Lake Pueblo State Park, and can also be observed in the outlying open areas surrounding Colorado Springs and in the mountains to the west.

USAFA resides on the boundary of two Bird Conservation Regions (BCRs), USFWS' smallest geographic scale for planning and evaluation of bird conservation efforts, including BCR 16 (Southern Rockies/Colorado Plateau) and BCR 18 (Shortgrass Prairie). Recent investigations at USAFA identified 28 species considered Birds of Conservation Concern using the USFWS IPaC system; however, only seven species of Birds of Conservation Concern have potential to occur within the proposed development area, based on suitable habitat as summarized in **Table 3.3**.

Table 3.3 Birds of Conservation Concern Identified for the Proposed EUL Area

Species	Habitat	Resident Type	Potential to Occur or Suitable Habitat Present
Black rosy-finch (*Leucosticte atrata*)	Barren/sparsely vegetated (cliffs and rocky outcrops)	Wintering	No
Brewer's sparrow (*Spizella* breweri)	Sagebrush shrubland	Breeding	No
Brown-capped rosy-finch (*Leucosticte* australis)	Barren/sparsely vegetated (cliffs and rocky outcrops)	Year-round	No
Buff-breasted sandpiper (Tryngites subrucollis)	Tundra, grasslands, pasture lands, and agricultural fields	Migrant	No
Burrowing owl (*Athene* cunicularia)	Agricultural land; barren/sparsely vegetated; grassland; mixed shrubland; sagebrush shrubland	Breeding	No

Species	Habitat	Resident Type	Potential to Occur or Suitable Habitat Present
Cassin's sparrow (*Aimophila cassinii*)	Arid grasslands, shrublands	Breeding	No
Chestnut-collared longspur (*Calcarius ornatus*)	Short-grass prairie; agricultural land	Migrant	No
Clark's grebe (*Aechmophorus clarkii*)	Waterbodies	Breeding	No
Golden eagle (*Aquila chrysaetos*)	Barren/sparsely vegetated (cliffs and rocky outcrops)	Year-round	No
Lark bunting (*Calamospiza melanocorys*)	Grasslands, Sagebrush shrubland, agriculture	Breeding	No
Lesser yellowlegs (*Tringa flavipes*)	Boreal forests/tundra; wetland/waterbodies	Migrant	No
Lewis's woodpecker (*Melanerpes lewis*)	Conifer forest; wetland/riparian areas	Year-round	Yes
Long-billed curlew (*Numenius americanus*)	Agricultural land; grassland; open water; wetland/riparian areas	Breeding	No
Long-eared owl (*Asio otus*)	Woodlands; grasslands; shrublands	Year-round	Yes
Marbled godwit (*Limosa fedoa*)	Wetland/waterbodies	Migrant	No
McCown's longspur (*Calcarius mccownii*)	Barren/sparsely vegetated; grassland	Breeding	No
Mountain plover (*Charadrius montanus*)	Barren/sparsely vegetated; grassland	Breeding	No
Olive-sided flycatcher (*Contopus cooperi*)	Open woodlands	Breeding	No
Pinyon jay (*Gymnorhinus cyanocephalus*)	Pinyon-juniper woodland; shrubland, and occasionally conifer forests	Year-round	Yes
Rufous hummingbird (*Selasphorus rufus*)	Grasslands and woodlands	Migrant	Yes
Semipalmated sandpiper (*Calidris pusilla*)	Mudflats, sandy beaches, shores of waterbodies	Migrant	No
Snowy plover (*Charadrius alexandrinus*)	Waterbodies with sparsely vegetated beaches/flats/river bars	Breeding	No

Species	Habitat	Resident Type	Potential to Occur or Suitable Habitat Present
Sprague's pipit (*Anthus spragueii*)	Large tracts of native grasslands	Migrant	No
Veery (*Catharus fuscescens subpallidus*)	Deciduous forests; wetlands/riparian	Breeding	Yes
Virginia's warbler (*Vermivora virginiae*)	Pinyon-juniper and ponderosa pine woodlands	Breeding	Yes
Whimbrel (*Numenius phaeopus*)	Wetlands/waterbodies	Migrant	No
Willet (*Tringa semipalmata*)	Wetlands/waterbodies	Migrant	No
Willow flycatcher (*Empidonax trailii*)	Wetlands/waterbodies	Breeding	Yes

Biologists and botanists with USAFA and the Colorado National Heritage Program (CNHP) have conducted several inventories for rare plants, animals, and plant communities. The 2012 Biological Inventory of USAFA (CNHP, 2012) observed several species of special concern including the Gunnison's prairie dog (*Cynomys gunnisoni*), Hops Azure butterfly (*Celastrina humulus*), Northern Leopard frog (*Lithobates pipiens*), and Ovenbird (*Seiurus aurocapillus*) and identified Monument Creek as a significant natural heritage wildlife resource and a CNHP-designated Potential Conservation Zone due to its support of important native fish communities and habitat provision for significant species including PMJM, Hops azure butterfly (*Celastrina humulus*), southern Rocky Mountain cinquefoil (*Potentilla ambigens*), New Mexico cliff fern (*Woodsia neomexicana*), cedar waxwing (*Bombycilla cedrorum*), gray catbird (*Dumatella carolinesis*), and northern leopard frog (*Lithiobates pipiens*). The 2012 Biological Inventory also indicated that shortgrass and mixed grass prairies of USAFA may provide habitat for the rare pocket mouse (*Peromyscus fasciatus infraluteus*), although the species has not been documented (USAFA, 2018).

3.8 Cultural Resources

3.8.1 Definition of the Resource

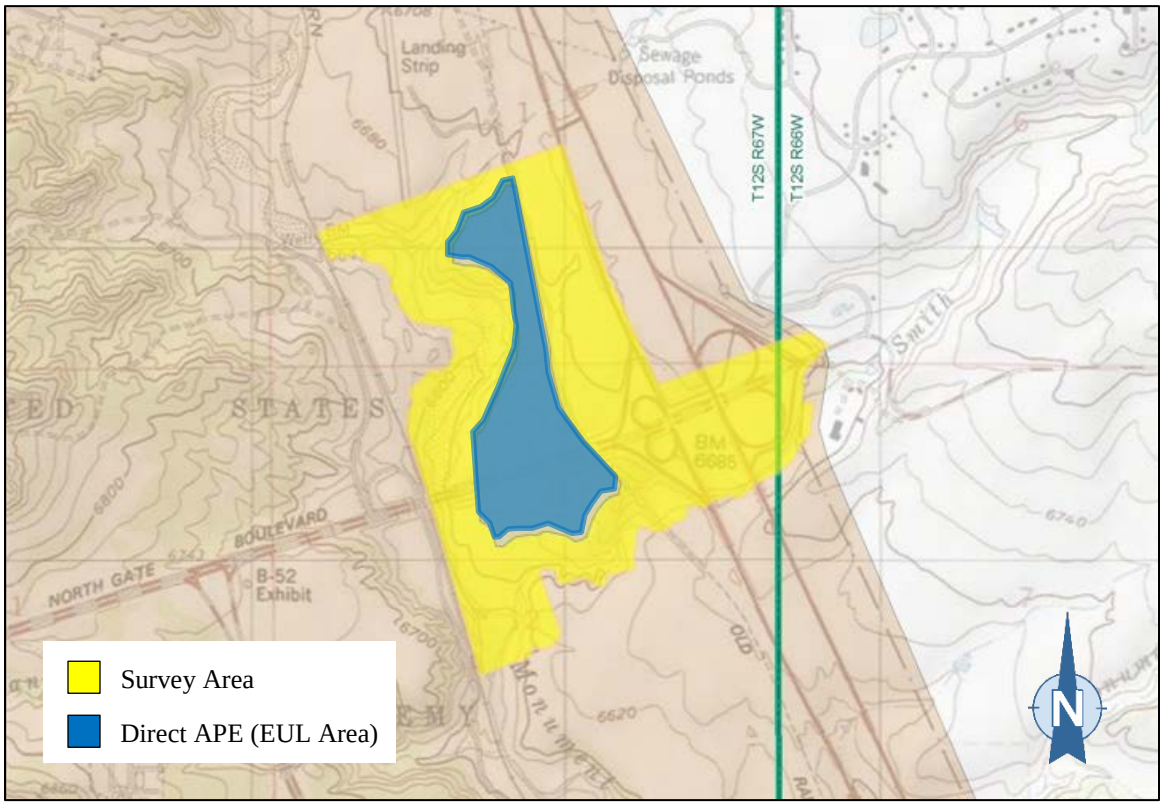
For the purposes of this EA, the term ROI for cultural resources is synonymous with the Area of Potential Effect (APE) as defined under cultural resources legislation. In compliance with the NHPA, the USAF/USAFA initiated Section 106 consultation for the lease of approximately 52 acres to Blue & Silver with the Colorado (CO) State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), and other stakeholders. This consultation

resulted in the development and execution of a draft project specific Programmatic Agreement (PA). See **Appendix F.**

Preparer's Note: Information on outcome of the project specific PA will be updated once consultation and filing with the ACHP is complete.

In consultation with SHPO, the APE is defined as the 52-acre proposed EUL Area, referred to as the direct APE in **Figure 3.5**, as well as the potentially NRHP-eligible 18,455-acre USAFA Historic District (5EP595). In order to support future evaluation of physical development within the proposed EUL Area, the survey area for cultural resources encompasses approximately 300 acres and is illustrated in **Figure 3.5**. This survey area captures the potential disturbance areas for proposed construction and operation activities including grading, access roads, equipment staging areas, stormwater inundation areas, and utility improvements.

Figure 3.5. Cultural Resources Inventory Area



Numerous laws and regulations require that possible effects on cultural resources be considered during the planning and execution of federal undertakings. These laws and regulations stipulate a process for compliance, define the responsibilities of the federal agency proposing the actions, and prescribe the relationships among involved agencies (e.g., SHPO and the Advisory Council on Historic Preservation [ACHP]). The primary law governing the treatment of cultural resources

is the 1966 National historic Preservation Act (NHPA), as amended, which requires a federal agency to consider potential impacts on historic properties from any proposed undertaking. Other laws and instructions that govern the treatment of cultural resources include, but are not limited to, those documents such as the 1974 Archaeological and Historic Preservation Act, the 1978 American Indian Religious Freedom Act (AIRFA), the 1979 Archaeological Resources Protection Act (ARPA), the 1990 Native American Graves Protection and Repatriation Act (NAGPRA), DoD Instruction (DoDI) 4710.02, DoD Interactions with Federally-Recognized Tribes, EO 13175, Consultation and Coordination with Indian Tribal Governments, Air Force Instruction (AFI) 32-7065 Cultural Resources Management, and AFI 90-2002 Air Force Interactions with Federally Recognized Tribes.

Only those cultural resources determined to be significant under cultural resources legislation are subject to protection or consideration by a federal agency. Significant cultural resources, whether they be prehistoric, historic, or traditional in nature, are referred to as "historic properties". Under 36 CFR Part 800, historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. For the purposes of these regulations, the term includes artifacts, records, and remains that are related to and located within such properties. The term "eligible for inclusion in the National Register" includes properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria. Therefore, site s that meet the criteria, but are not yet evaluated, may be considered potentially eligible to the National Register and, as such, are afforded the same regulatory consideration as nominated historic properties. As a federal agency, the USAF/USAFA is responsible for identifying any historic properties associated with its property.

Properties that are either listed on or eligible for listing in the NRHP are provided the same measure of protection under Section 106. In addition, DoD Instruction (DoDI) 4710.02, DoD Interactions with Federally-Recognized Tribes, governs DoD interactions with federally-recognized Tribes, EO 13175, Consultation and Coordination with Indian Tribal Governments, charges federal departments and agencies with regular and meaningful consultation with Native American tribal officials in the development of policies that have tribal implications, and AFI 32-7065 requires that consultations between the Air Force and Indian Tribes are conducted on a government-to-government basis and that the consultation process be completed prior to finalizing any NEPA documents (e.g., EA, FONSI, etc.).

Because USAFA has determined that the design of physical development on the EUL property is too conceptual to support determination of potential effects from future development, the scope of the analysis for cultural resources within this EA is limited to evaluating only the lease of the proposed EUL Area, consisting of 52 acres, between Blue & Silver and the USAF/USAFA.

To resolve the potential adverse effects on the integrity of setting and feeling of the USAFA Historic District and USAFA's Cadet Area National Historic Landmark District associated with the transfer of the proposed EUL Area and construction of the proposed TrueNorth Commons, a Programmatic Agreement has been executed, enabling USAFA to approve of the undertaking thereby allowing effects on historic properties to be fully determined. Various parties including ACHP, SHPO, and 44 Native American Tribes (as listed in **Appendix A**) were invited to participate in consultation and development of the project Programmatic Agreement, which assigned responsibilities to Blue & Silver and its sublessees, including the requirement that Blue & Silver submit a consultation package to USAFA for each phase of initial construction as well as for any material changes in exterior design and comply with all provisions in USAFA's ICRMP to ensure adverse effects to historic properties are avoided, minimized, and/or mitigated.

3.8.2 Existing Conditions

In July and August 2018, an intensive pedestrian cultural resources inventory of 298.38 acres was conducted for the proposed lease and future development of the EUL area; which included an additional buffer around the APE where direct effects have the potential to occur in the future when development plans are determined (**Figure 3.5**). USAFA's consultation with the SHPO on the NRHP eligibility of the re-evaluated and newly recorded resources is ongoing and will be available in the future when consultation is required for actions involving each phase of development of the EUL area. The survey resulted in revisiting of 17 previously recorded cultural resources and the recording of 20 new cultural resources, including four sites and 16 isolated finds (IFs):

- The 17 previously recorded sites include 3 prehistoric sites (5EP.2239, 5EP.2249 and 5EP.2248), 10 historic sites (5EP.1003.18, 5EP.1995, 5EP.2181.3, 5EP.2181.4, 5EP.2181.29, 5EP.2323, 5EP.3550, 5EP.3551, 5EP.3552 and 5EP.3554) and 4 multicomponent sites (5EP.1994, 5EP.2246, 5EP.2247 and 5EP.2264)
- Five previously recorded sites is within the proposed EUL Area (5EP.1994, 5EP.2323, 5EP.2239, 5EP.2245, and 5EP.2246)
- Newly recorded sites included 2 historic sites (5EP.8285 and 5EP.8304.1) and 2 prehistoric sites (5EP.8286 and 5EP.8295).
- 16 IFs were newly recorded and 2 were located in the EUL Area.
- No architectural resources have been identified within the proposed EUL area.

The determinations of eligibility of these resources are in consultation with the Colorado SHPO and will be available in the future when consultation is required to commence construction of each proposed building within the proposed EUL Area.

3.9 Earth Resources

3.9.1 Definition of the Resource

Earth resources are the surface and subsurface materials of an area and their inherent properties, such as topography and soil composition. Topography is the surface configuration of the earth that includes natural or man-made changes in elevation and form, such as mountains or man-made hills. Soil generally refers to unconsolidated materials overlying bedrock or other parent material, which are generated through physical and chemical weathering processes that act on parent material.

Soil characteristics can determine the ground's ability to support land-use activities and play an important role for farmlands as defined in the Farmland Protection Policy Act (FPPA) (7 CFR Part 658). The purpose of the FPPA is to minimize the extent to which federal projects contribute to the unnecessary and irreversible conversion of prime farmland, unique farmland, farmland of statewide importance, and/or farmland of local importance. As part of the FPPA, federal agencies are required to (a) identify and account for the adverse effects of programs on the preservation of farmland, (b) consider alternative actions, as appropriate, that could lessen adverse impacts, and (c) ensure that programs are compatible with state and local governments to protect farmland.

3.9.2 Existing Conditions

3.9.2.1 Topography

USAFA's visual and physical backdrop is dominated by the steep ridge of the Rampart Range, which trends north to south along the western boundary of the installation. At the base of this abrupt rise, flat-topped ridges extend eastward, interspersed by valleys carved by streams flowing eastward to Monument Creek. Monument Creek runs from north to south through the installation. Land to the east of Monument Creek generally consists of gentle southwest-trending slopes dissected by tributaries carrying runoff from areas east of USAFA. Elevations at USAFA range from 6,376 feet above sea level at Monument Creek near the South Security Gate to 7,800 feet at the base of the Rampart Range at Stanley Canyon.

The proposed EUL Area is located west of I-25 along North Gate Boulevard, east of Monument Creek. Topography within the proposed EUL Area has been previously altered by the construction of Northgate Boulevard and the I-25 highway intersection, the Atchison, Topeka and Santa Fe Railroad, the New Santa Fe Regional Trail, and USAFA's North Security Gate. The general slope in the area is to the south and west, while elevations on the proposed EUL Area range from 6,620 to 6,700 feet above mean sea level. The landform consists of gentle to moderately-sloped hills and swales with the most varied terrain located in the northern portion of the EUL Area (Parcel E) where steep slopes approach angles of 45 degrees on the sides of wetland drains; however, development of Parcel E is not included in the Proposed Action. Parcel E is currently non-developed open space and generally consists of steeper grades, averaging approximately 15 vertical feet per 100 horizontal feet (0.150 ft/ft).

Parcels A and C of the proposed EUL Area are located north of North Gate Boulevard. Parcel A has a west-south sloping hill that crosses the southern portion of the site and an estimated grade of 0.060 ft/ft, while the northern portion of Parcel A has steeper terrain sloping generally toward the north and west with an estimated grade of 0.070 ft/ft. The southern portion of Parcel C is mostly flat with a gentle slope towards the west and a grade of approximately 0.013 ft/ft, while the northern portion of Parcel C slopes slightly steeper towards the west and northwest with a grade of approximately 0.060 ft/ft.

Parcels B and D of the proposed EUL Area are located south of North Gate Boulevard. Parcel D is mostly flat with a gentle slope towards the south at an estimated grade of 0.025 ft/ft, while a steeper slope in the northern portion of the parcel from North Gate Boulevard has an estimated grade of 0.130 ft/ft. Parcel B generally slopes toward the south and west with a grade from North Gate Boulevard approximating 0.850 ft/ft until the landform levels out before sloping towards the south and southwest at an estimated grade of 0.053 ft/ft. A drainage ditch, fed from the roadside drainage on the southern edge of North Gate Boulevard, snakes through Parcels B and D towards the southwest before winding back toward the southeast and terminating near the southwest corner of proposed Parcel D, approximately 300 feet north of Smith Creek.

3.9.2.2 Geology

El Paso County lies in the east-central part of Colorado on the western edge of the Denver Basin and at the eastern edge of the Front Range Uplift. The dominant landform and geologic influence in this area is the Pikes Peak batholith, a huge mass of magma that pushed its way upward through existing rock approximately 1 billion years ago which through subsequent uplift approximately 68 million years ago came to form what is now the 14,115-foot Pikes Peak. Geology in the area is influenced by the erosion of igneous rocks and arkosic sediments from the nearby front range mountains, including the pinkish Pikes Peak granite, which is prevalent throughout the region, and an associated formation, the crumbly Dawson Arkose sand and mudstones, which underlies much of the Front Range foothills and consists of sedimentary rocks derived from the weathering and transport of the Pikes Peak granite. The Dawson Arkose is visible at several areas at USAFA, especially where it is exposed above Monument Creek and along the margins of ridgelines, and in several picturesque geologic formations known locally as "hoodoos," including Cathedral Rock on the western end of Jacks Valley. Sub crop locations where the Dawson Arkose is within 15 feet of the surface correlate with locations of heavy pine tree growth (USGS, 1967).

The main geologic unit immediately underlying the proposed EUL Area is the quaternary age Pine Valley Pediment gravel with Recent surficial deposits of the Husted Alluvium along Monument Creek and Smith Creek. The Pine Valley gravel west of Monument Creek consists of reddish-brown fragments of the Pike Peak Granite that have been reworked and now consist of

a mixture of boulders, gravel, sand, silt and clay. The Cretaceous and Paleocene age Dawson Arkose underlies the Pine Valley gravel and consists of coarse arkosic sandstone and interbedded lenticular siltstone and clay. The approximately 1,000-feet thick Dawson Arkose includes a bottom bed of andesitic lenses totaling roughly 185 feet followed by the Laramie Formation. The Laramie Formation is underlain by the Fox Hills Sandstone, which sits above the Pierre Shale.

Presently, the Front Range is a geologically stable region. Seismicity is generally minimal, though the region has experienced mild and infrequent earthquakes near the town of Castle Rock associated with the Rampart Fault which runs strikes north and south along the western boundary of the USAFA. Such earthquakes have generally been of a Richter magnitude of 4.0 or lower and geologists consider the Rampart Fault to be inactive. Overall, Colorado is not considered to be at risk from significant earthquake damage and FEMA ranks the state as number 30 in terms of annual earthquake related losses.

3.9.2.3 Soils

Soils at USAFA are primarily derived from a granitic parent material. Soils are generally very shallow (horizons are not defined) coarsely textured gravelly loams, characterized by sand-sized mineral grains, which retain water poorly and have very little fine or organic material. Deeper soils with finer particles and organic matter occur as outwash deposition in USAFA's valleys, which tend to be relatively less erosion-prone. Soils in a few areas (surrounding the airfield, in the vicinity of Falcon Stadium and Douglass Valley Housing, and just east of the Community Center, cemetery, and golf course) have a slight-to-moderate erosion potential. Most of these areas are already associated with some type of fairly intensive human use. Very thin soils found on the steeper slopes of the southern and western boundaries are extremely prone to erosion, as they do not contain enough fine-textured mineral (silt or clay) or organic material to make them cohesive (USAFA, 2018).

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, soil types within the proposed EUL area include Kettle-Rock outcrop complex, Tomah-Crowfoot complex, and Pring coarse sandy loam. Approximately 50 percent of the proposed EUL Area consists of Kettle-Rock outcrop complex soils, including the majority of Parcels B and E and the northern portions of Parcels A and C. The remainder of the proposed EUL Area consists of roughly equal amounts of the Pring series and Tomah-Crowfoot complex. Pring soils occur within the portions of proposed Parcels A and C adjacent to North Gate Boulevard (east of Kettle-Rock outcrop soils) and within the northeast corner of proposed Parcel E, while the Tomah-Crowfoot complex occupies the majority of proposed Parcel D and the southwestern portion of proposed Parcel C (west of Kettle-Rock outcrop soils). Additionally, Blendon soils underlie North Gate Boulevard along the eastern boundary of USAFA, where the Proposed Action includes installation of utility infrastructure. A description of the soil types is included below. Within the soil descriptions, deep soils indicate that the depth to a restrictive feature is greater than 80 inches.

Blendon. The Blendon series consists of deep, well-drained soils that derived from sandy arkosic alluvium. These soils are typically found on terraces and alluvial fans with slopes of 0 to 3 percent. The typical profile of Blendon soils includes sandy loam from 0 to 10 inches underlain by sandy loam from 10 to 36 inches and gravelly sandy loam from 36 to 60 inches.

Crowfoot. The Crowfoot soils are deep, well-drained soils derived from alluvium parent material. These soils are found on alluvial fans and hills with slopes of 8 to 15 percent. The characteristic profile for Crowfoot soils consists of grayish brown loamy sand from 0 to 12 inches, followed by pale brown sand from 12 to 23 inches, light yellowish-brown sandy clay loam from 23 to 36 inches, and very pale brown coarse sand from 36 to 60 inches.

Kettle. The Kettle series consists of deep, somewhat excessively drained soil formed from sandy alluvium derived from arkose. These soils are typically found on hills and have slopes of 8 to 40 percent. The typical profile of Kettle soils includes coarse loamy sand from 0 to 16 inches underlain by gravelly sandy loam to from 16 to 40 inches bgs and extremely gravelly loamy sand from 40 to 60 inches. Rock outcrops encompass approximately 20 percent of the Kettle-Rock outcrop complex within the proposed EUL Area, which consist of unweathered bedrock to depth.

Pring. The Pring series consists of deep, well-drained soils derived from arkosic alluvium parent material originating from sedimentary rock. These soils are typically found on hills and have slopes of 3 to 8 percent. The typical profile of Pring coarse sandy loam soils includes coarse sandy loam from 0 to 14 inches underlain by gravelly sandy loam to 60 inches bgs.

Tomah. The Tomah series consists of deep, well-drained alluvium derived from arkose and/or residuum weathered from arkose, a feldspar-rich sandstone. These soils are found on alluvial fans and hills with slopes of 8 to 15 percent. The typical profile of Tomah soils includes dark grayish brown loamy sand from 0 to10 inches underlain by pale brown coarse sands to 60 inches.

Soils designated by the US Department of Agriculture as prime farmland (with statutory protection) are not present at USAFA or the proposed EUL Area.

3.10 Utilities/Infrastructure

3.10.1 Definition of the Resource

Utilities are defined as those services that provide potable water, electric and natural gas supply, wastewater management, and communications. The affected environment (ROI) for the utilities resource is defined as northern service area for CSU, a community-owned utility.

3.10.2 Existing Conditions

The Proposed Action would occur in an area that is currently undeveloped; therefore, new service connections to the service provider for communications, water, wastewater, natural gas, and electric would be installed by Blue & Silver as part of the TrueNorth Commons development construction activity. Because the EUL area is being annexed into the City as part of the development process, CSU is obligated to provide utility service to the EUL area. USAFA also receives water, electric, and natural gas supply from CSU, but treats its own wastewater on-site. USAFA's wastewater treatment facility is not located at or near the proposed EUL Area, and the Proposed Action would connect to CSU for wastewater service rather than rely on the USAFA system. Telecommunications service in the area is provided by Century Link.

3.10.2.1 Potable Water Supply

Two water treatment plants, along with storage and pumping facilities, are owned and operated by CSU and located on leased USAFA property. The two plants include the Pine Valley Treatment Plant and the J.A. McCullough Treatment Plant, which are designed to manage 92 million-gallons per day (MGD) and 75 MGD, respectively. These plants supply all the potable water to USAFA and a surplus that goes to the City. USAFA's potable water demand ranges from 1 to 3 MGD, which is not considered a substantial impact on the overall system's capabilities. Both water treatment plants receive most of their raw water from the 40,000-acre-foot Rampart Reservoir, located approximately 3.5 miles away, through a raw-water tunnel which discharges into an open reservoir located south of the Pine Valley Plant and west of the McCullough Plant.

The Pine Valley Pumping Station, located at the Pine Valley Water Treatment Plant, supplies the Academy's four buried reservoirs through a metering vault that includes backflow prevention equipment. The Pine Valley Water Plant has 10-million gallons of storage, while the McCullough Plant has five million-gallons of storage. The Pine Valley Pumping station can pump from either storage facility but primarily uses the Pine Valley storage. The entire water supply from the plants to Colorado Springs is supplied through parallel 90-inch and 48-inch water lines that travel across the USAFA's western and southern borders.

3.10.2.2 Non-Potable Water Supply

In addition to potable water, the USAFA maintains a non-potable water supply system for irrigation demand. The water for non-potable use is obtained from four sources: surface water run-off, direct precipitation into the four non-potable reservoirs, effluent from the wastewater treatment plant (WWTP), and seven groundwater wells. The treated effluent non-potable water from the WWTP is pumped to four reservoirs in series. The total storage capacity of these reservoirs is 161.8 million gallons.

The USAFA wastewater treatment facility consists of an oxidation ditch with nitrification / denitrification tertiary filters. The treatment facility is permitted for a maximum throughput capacity of 1.4 MGD. Based on all available planning, this treatment capacity is expected to suffice for all wastewater management needs for USAFA for the near future.

The non-potable use system results in zero discharge from the wastewater system as a result of a land application program utilizing treatment facility effluent. A pump station directs effluent from the treatment facility to a non-potable reservoir system. Water is stored in these reservoirs and is used for irrigation on the USAFA grounds. Discharge to Monument Creek may occur if the non-potable reservoirs are full and only in emergency conditions when conveyance facilities are inoperable. USAFA's NPDES permit addresses the reservoirs/land application/irrigation system as a discharge with specific permit conditions. CSU provides the reusable water rights for stand-alone reclaimed water irrigation systems at USAFA.

Wastewater service for property surrounding USAFA is provided by CSU. As of 2016, CSU had over 136,000 connections to about 1,700 miles of sewer line. At that time, they treated an average of 37.58 billion gallons of wastewater per day at three treatment facilities having a combined permitted capacity of 96 million gallons per day.

3.10.2.3 Energy Sources

CSU is the provider of electric and natural gas service to USAFA and the surrounding areas. The USAFA Solar Array (built, owned, and operated by CSU) supplements approximately 4to 7% of USAFA's total power requirement. In 2016, CSU reported over 1,000 megawatts of electrical generation capacity and an annual usage of 4.5 million megawatts. There were over 220,000 locations receiving electric service at that time. In addition, CSU provides over 22 million cubic feet of natural gas to over 196,000 locations. The distribution system maintained by CSU includes the USAFA and totals over 1,000 miles of overhead electric lines and 2,700 miles of underground line along with over 5,000 miles of underground gas lines.

3.10.2.4 Telecommunications

The communications system on the USAFA installation consists of a mixture of fiber optic cable and twisted pair copper cable. Current service is available near the Project Area, however telecommunications service for the Proposed Action would be provided from new service (either fiber or copper) installed as part of utilities construction therefore service would not rely on USAFA infrastructure. Service and infrastructure are available along the eastern boundary of the Project Area to support a wide range of communication requirements such as voice, data, video and security systems.

3.11 Socioeconomic Resources

3.11.1 Definition of the Resource

Socioeconomic analyses include investigations of the prevailing population, income, employment, and community services of a ROI. The socioeconomic conditions of a community or ROI could be affected by changes in the rate of population growth and changes in economic activity (e.g., employment, income, industrial and commercial growth) within the community or ROI caused by the implementation of an action.

3.11.2 Existing Conditions

The Proposed Action is primarily on USAFA property except for a small amount of utility construction that will occur east of USAFA property required to connect utilities to the EUL property. The ROI for this resource is defined as the Zip Code Tabulation Areas (ZCTA) surrounding and including USAFA. Those areas include the following ZCTA numbers 80840 (USAFA), 80921 (Black Forest / Gleneagle), 80920 (Colorado Springs) and 80919 (Colorado Springs) as shown in **Figure 3-6**.

Figure 3.6. Socioeconomic ROI – US Census Zip Code Tabulation Area

3.11.2.1 Population

According to data from the U.S Census Bureau the population in the ROI is increasing except for the population in the USAFA ZCTA (80840). From 2013 to 2017 the data presented in **Table 3.4** shows a slight increase in ZCTA 80919 and 80920 with a higher rate of increase of 17 percent in 80921. The El Paso County population increase over the same period is 8 percent.

3.11.2.2 Income and Employment

The Colorado Springs economy is primarily driven by the military, the high-tech industry, and tourism. Numerous military facilities are located throughout the region including USAFA, Fort Carson Army Base, Peterson Air Force Base (AFB), Schriever AFB, and Cheyenne Mountain Air Force Station. Because of the concentration of military installations in the area, high tech industries including Boeing, General Dynamics, Lockheed Martin, Northrup Grumman, and others also exhibit a significant influence on the local economy.

Data on population, population change, median household income and unemployment rates from the US Census Bureau is included in **Table 3.4.** In the ROI, the median annual household income from 2013 to 2017 was estimated to be $70,179 for 80840 (USAFA), $117,677 for Gleneagle/ Black Forest, $91,175 for 80919 and $88,690 for 80920 which are all greater than the El Paso County average household income of $62,535. US Census data for 2017 estimated unemployment in the ROI and El Paso County is provided in **Table 3.4** and illustrates a generally low unemployment in the area immediately surrounding the Proposed Action. Additional information on occupation by industry is included in **Table 3.5**.

Table 3.4: Socioeconomic Resources Data

	Air Force Academy 80840	Colorado Springs 80919	Colorado Springs 80920	Gleneagle/Black Forest 80921	El Paso County
Total Population	6,098	27,541	38,618	21,870	674,826
Population Change	10% Decrease	<1% Increase	<1% Increase	17% Increase	8% Increase
Median household income	$70,179	$91,175	$88,690	$117,677	$62,535
Population over 16	5,374	22,596	29,611	16,306	525,197
Unemployment Population	14	838	1,119	426	22,050
Unemployment Percent	0.3	3.7	3.8	2.6	4.2

Table 3.5: Socioeconomic Resources Data – Population by Occupation

Occupation Industry	El Paso County	Air Force Academy 80840	Colorado Springs 80919	Colorado Springs 80920	Gleneagle / Black Forest 80921
Agriculture, forestry, fishing and hunting, and mining	1,926	3	81	18	0
Construction	21,356	25	380	704	523
Manufacturing	19,106	14	838	1,152	763
Wholesale trade	5,631	4	252	325	249
Retail trade	33,687	31	1,120	1,679	731
Transportation and warehousing, and utilities	12,032	13	295	588	361
Information	8,567	6	224	618	252
Finance and insurance, and real estate and rental and leasing	20,558	14	1,255	1,523	857
Professional, scientific, and management, and administrative and waste management services	41,303	31	2,477	3,360	1,358
Educational services, and health care and social assistance	68,096	84	3,698	4,375	2,674
Arts, entertainment, and recreation, and accommodation and food services	33,165	66	1,097	1,721	1,020
Other services, except public administration	18,539	16	1,019	1,228	407
Public administration	20,323	143	756	1,096	657

3.11.2.3 Housing

Including the ROI, housing growth in Colorado and El Paso County has been positive. The Colorado Department of Local Affairs reports steady housing growth in El Paso County of about 4.8 percent over the period from 2013 to 2017. During that same period vacancy rates in housing for El Paso County dropped from 3.89 percent in 2013 to 1.96 percent in 2017.

3.11.2.4 Public Services

Education

There is one public school district that includes the ROI for the Proposed Action. The Academy School District 20 with 37 schools serves more than 24,500 students in El Paso County. These schools include the Douglas Valley Elementary School and Air Academy High School, which are located within the USAFA property. In the 2017-2018 school year, the district had an approved general fund budget of approximately $260 million.

Law Enforcement

Law enforcement for the proposed development would be provided by the City's Police Department in a cooperative agreement with the USAFA because of the annexation of the EU property into the City. The Department services the area around USAFA from the Falcon Division which has 61 officers serving an estimated population of 97,830. The area includes about 45.71 square miles on the northern side of the City.

Fire Protection

The Colorado Springs Fire Department (CSFD) will include the new development in its service area because of the annexation of the EUL property in to the City. CSFD has 22 fire stations, approximately 500 full-time employees, and 33 front-line emergency apparatus. This inventory includes 22 engine companies, six truck companies, a technical rescue team, a hazardous materials response team, and three medical squads. The department also has 19 brush trucks for wildland firefighting, one air supply truck, one hazardous materials decontamination vehicle, and one hose wagon. Fire stations are staffed 24 hours a day, seven days a week and are the first responder on medical emergencies within the city. The CSFD also manages a ground emergency ambulance contract with a third-party transporting agency. Completed in 2016, Fire Station 22, located approximately 2 miles east of the Development Area will include the EUL property in its service area. Fire Station 22 currently includes Engine 22 and Brush Truck 22. Engine 22 is staffed with four firefighters and has medical capabilities. According to the 2017 CSFD Annual Report Engine 22 experienced a 22 percent increase in responses over 2016. This increase is likely a reflection of the growth in this area as evidenced by the 17 percent population growth reported for ZCTA 80921 (**Table 3.4**).

3.12 Transportation and Traffic

3.12.1 Definition of the Resource

For this evaluation, transportation is defined as the vehicular roadway system that enables persons and goods to move about a given area. The number of vehicles that can pass over a given portion of roadway during a specified period of time measures the roadway capacity. This capacity is usually considered in terms of levels of service (LOS), which is a qualitative measure describing operational conditions within a traffic stream; it is described in terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

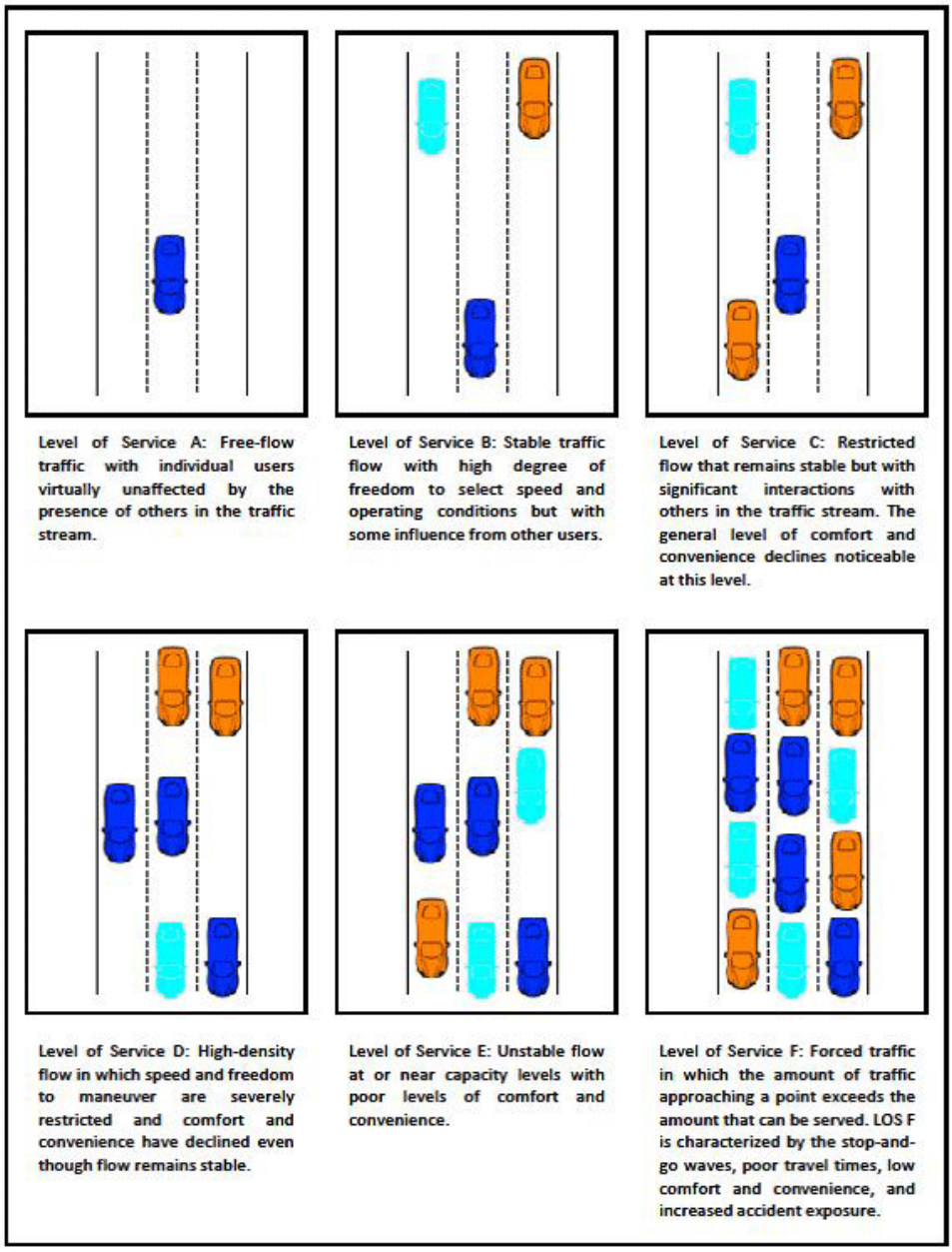
In traffic analyses, performance measures include LOS, delay, and volume-to-capacity ratio. The LOS is a qualitative measure describing operational conditions within a traffic stream and motorists' perceptions of those conditions. In general, the following terms define the LOS:

A= Free flow

B=Steady
C=Steady but limited
D=Steady at high density
E=Saturated
F=Congested

LOS is an important concept in evaluating, comparing and describing the results of traffic studies and can be visually interpreted as shown in **Figure 3.7.**

Figure 3.7 – Depiction of Level of Service (LOS)



3.12.2 Existing Conditions

The existing roadway system consists of I-25 as the primary north-south highway and North Gate Boulevard as the east-west roadway. I-25 is an interstate freeway maintained by CDOT. North Gate Boulevard is identified as a principal arterial in the City's Major Thoroughfares Plan. North Gate Boulevard is a divided, 4-lane road with 25,000 vehicles per day according to the City's Traffic Criteria Manual (TCM). There is currently one turn-ff to the New Santa Fe Regional Trail parking area located along the north side of North Gate Boulevard just west of the I-25 southbound exit ramp and prior to the USAFA security gate. There are no traffic controls between the I-25 southbound exit/entrance traffic circle and the USAFA security gate.

A Traffic Impact Study (TIS) is used to identify the impacts a proposed land use will have on the surrounding roadway traffic and includes an evaluation of existing traffic conditions on the surrounding roadway network. The TIS for the Proposed Action was finalized and submitted for review by the City in November 2018. The TIS was subsequently reviewed by CDOT and El Paso County.

In urban and suburban environments, intersections have a much higher impact on traffic operations than the roadway segments in between intersections. For this reason, the TIS study area (also the ROI for the EA) for the Proposed Action was identified as the new intersection along Northgate Boulevard where a new street from the Proposed Action will join the surrounding roadway network plus the two I-25 ramp intersections. The Northgate Boulevard and Struthers Road intersection was also added to the ROI based on comments received from El Paso County.

The Proposed Action ROI was included in an Interstate Access Request (IAR) prepared for the proposed Powers Boulevard Interchange with I-25 and completed in May 2018. Since the traffic ROI intersections were included in the IAR and the IAR was completed recently, the traffic volumes used in the IAR were also used for the Proposed Action TIS. This allowed the TIS to be completed without collecting new traffic counts.

Using the existing conditions for the two I-25 ramp intersections and the Struthers Road intersection taken directly from the I-25/Powers Boulevard IAR, the TIS evaluated the LOS for the ROI. The results of this evaluation show that the two I-25 ramp intersections at North Gate Boulevard and the Struthers Road intersection currently operate at a LOS level B or better. This is considered an acceptable LOS according to the City's TCM. The TCM designates LOS ratings A, B, C, and D as acceptable in the City. Since the TCM and the Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA) Pamphlet 55-17 agree that only LOS E and F are unacceptable, the existing condition for traffic in the ROI is acceptable. The results of the existing conditions LOS evaluation from the TIS (**Appendix C**) are provided in **Table 3.6.**

Using the data from the IAR and focusing on routine peak hours traffic levels, the traffic study is designed to evaluate the most likely peak conditions. Because of the required security procedures in place at the North Gate, there are special event conditions that create traffic conditions that are outside the scope of a TIS. Football games, graduation and other events that result in higher than peak traffic events that are infrequent and short duration currently create what may be a degraded level of service. Because the data on traffic volume are not available the actual LOS for these infrequent events has not been evaluated. It is important to recognize that an element of the existing conditions includes infrequent degradation of service that is likely below LOS B.

Table 3.6: Existing Intersection Operations

Year 2018					
Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		Delay (seconds)	LOS	Delay (seconds)	LOS
I-25 NB Ramps/North Gate Boulevard	Roundabout	6.0	A	10.4	B
I-25 SB Ramps/North Gate Boulevard	Roundabout	7.5	A	4.9	A
North Gate Boulevard/Struthers Road	Traffic Signal	14.6	B	16.8	B

The east side of I-25 has seen significant development in recent years with the construction of the Bass Pro Shops and surrounding retail including the Copper Ridge development. The extension of Powers Boulevard would eventually construct a new interchange with I-25 in the ROI. An Interchange Access Request was prepared for the Copper Ridge Metropolitan District and submitted to both the CDOT and the Federal Highway Administration (FHWA) in May of this year (2018). The Copper Ridge Metropolitan District is proposing to construct the Powers Boulevard interchange with I-25 and the Powers Boulevard extension between I-25 on the west and Voyager Parkway on the east as is shown on **Figure 3.8**.

Figure 3.8: Powers Boulevard Extension Alignment

Source: I-25/Powers Boulevard IAR

Background Traffic Levels (Opening Year and Horizon Year)

Background traffic conditions were analyzed for opening year conditions (assumed to be 2020) and horizon year conditions (2040). The background traffic volumes were taken directly from the *I-25/Powers Boulevard IAR* assuming the proposed Powers Boulevard Extension and I-25 Interchange have been built by 2040, but not in 2020. When the two I-25 Ramp intersections and the North Gate Boulevard/Struthers Road intersection are analyzed with 2020 projected traffic volumes and 2040 projected volumes, the operations are as shown in **Table 3.7**.

Table 3.7: 2020 and 2040 Background Intersection Operations

Year 2020					
Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		Delay (seconds)	LOS	Delay (seconds)	LOS
I-25 NB Ramps/Northgate Boulevard	Roundabout	4.9	A	6.0	A
I-25 SB Ramps/Northgate Boulevard	Roundabout	6.3	A	3.5	A
North Gate Boulevard/Struthers Road	Traffic Signal	14.6	B	16.8	B
Year 2040					
Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		Delay (seconds)	LOS	Delay (seconds)	LOS
I-25 NB Ramps/Northgate Boulevard	Roundabout	7.2	A	11.9	B
I-25 SB Ramps/Northgate Boulevard	Roundabout	12.8	B	12.4	B
North Gate Boulevard/Struthers Road	Traffic Signal	79.3	E	77.3	E

As indicated, the I-25 ramp intersections (Northbound and Southbound) with North Gate Boulevard would operate at an acceptable LOS during both 2020 and 2040 without the Proposed Action. However, the North Gate Boulevard/Struthers Road intersection has unacceptable operations by 2040 without the addition of traffic from the Proposed Action. In both cases, this is due to high delay experienced by the westbound right-turn movement from North Gate Boulevard onto Struthers Road. This can be solved by adding right-turn overlap traffic signal phasing for the westbound right-turn movement. This would allow a green arrow for the right-turn movement to be displayed at the same time as the southbound movements from Struthers Road are occurring (non-conflicting movements). This would allow the North Gate Boulevard/Struthers Road intersection to operate with 22.1 seconds of delay and LOS C during the AM peak hour and with 21.5 seconds of delay and LOS C during the PM peak hour. This improvement only requires two new traffic signal vehicle heads and signal phasing/timing changes but does not require any additional lanes or intersection improvements. Because this future intersection improvement is currently identified for the North Gate Boulevard/Struthers Road intersection and is needed with or without the traffic projected to result from the Proposed Action, it is considered part of background conditions identified for traffic flow.

4.0 ENVIRONMENTAL CONSEQUENCES

The environmental analysis of the proposed mixed-used commercial park development uses a conceptual site layout plan and mapping to allow for a baseline of environmental impact analysis in this EA that will facilitate and reduce the time for specific design plan reviews stemming from the incremental development phases over the life of the entire project. If during the course of specific plan reviews, significant new circumstances arise relevant to the environmental concerns of the proposed siting and the Proposed Action changes enough to be outside the coverage of the present EA analysis and findings, then that design plan would no longer be covered by this EA. An additional EIAP would then be undertaken, which might result in the need for further documentation, such as a supplemental EA. However, a new design plan undergoing analysis would not affect the other development projects within the commercial park to the extent they remain within the scope of this EA.

Changes to the natural and human environments that may result from the Proposed Action and the No Action Alternative were evaluated relative to the existing environment as described in **Section 3.0**. The potential for environmental effects were evaluated utilizing the context and intensity considerations as defined in CEQ regulations for implementing the procedural provisions of NEPA (40 CFR § 1508.27). Beneficial or adverse effects may be a primary result (direct) or secondary result (indirect) of an action; and may be long-term (e.g., duration of greater than 5 years up to permanent) generally from operation, or short-term (e.g., temporary in duration up to 5 years from inception of impact) generally from construction. An adverse effect is defined as a detrimental effect on environmental resources. The impact discussion includes a statement regarding the context and intensity. Context is the geographical extent for which a resource is affected. Intensity refers to the severity or relative degree of the impact. For all resources analyzed in this EA, the intensity of effect fits one of five categories, as defined below.

- None: No effect on the resource.
- Negligible: The effect on the resource would be at the lowest levels of detection, barely perceptible, and not measurable, with neither negative or positive significant consequences.
- Minor: The effect or effects would be perceptible and measurable but will be slight and localized and not outside the natural or typical range of variability. The effect may be of higher intensity, but short-term or infrequent; conversely, the effect may occur more frequently or for a longer period of time but be of lower intensity. The effect would cause noticeable change in the character of the environment but without significant consequences. Applicant committed protection measures or additional mitigation would be applied and considered to be successful with a high degree of certainty.

- Moderate effects: The effect alters one or more character-defining features of the environment in a manner that is perceptible and measurable but consistent with existing and emerging baseline trends and without affecting its sensitivities by substantially diminishing its viability, usefulness, or integrity. Applicant committed protection measures would be applied and would likely be successful.
- Significant effects: The effect, by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment. Mitigation measures would be necessary and would likely be extensive to ensure the offset of negative effects is successful.

4.1 Land Use and Aesthetics

The significance of potential land use impacts is based on the level of land use sensitivity in areas affected by a proposed action and compatibility of proposed actions with existing conditions. In general, a land use impact would be significant if any of the following were to happen as a result of the Proposed Action:

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

Aesthetics or visual resources were evaluated by considering the visual sensitivity of the area and the impact of the Proposed Action from key observation areas, or critical vantage points. would be significant if any of the following were to happen as a result of the Proposed Action In general, a visual impact would be significant if any of the following were to happen as a result of the Proposed Action:

- Substantial adverse effects on a scenic vista
- Substantial degradation of the existing visual character or quality of a site and its surroundings
- Creation of a new source of substantial light or glare that would adversely affect day or nighttime views in the area

4.1.1 No Action Alternative

Under the no action alternative, the proposed development would not occur, existing land uses would continue, and the visual landscape of the proposed EUL Area would not be altered; therefore, there would be no impacts to land use or visual resources (aesthetics).

4.1.2 Preferred Alternative (Proposed Action)

Land Use

The IDP defines Future Planning Areas, or planning districts, to achieve compatible and nondisruptive land use by defining complementary and restricted uses for each planning district. The proposed EUL Area is in USAFA's Community External Future Planning Area, and the Preferred Alternative would conform with the permitted land uses identified for this area, including lodging, outdoor recreation, open space, community commercial, small-scale retail and service, and community service (USAFA, 2018). These uses all align with the planned uses for the Preferred Alternative which is consistent with USAFA IDP including the Visitor Center project in the Community External Future Planning Area. With respect to the form-based planning standards included in the IDP, the Preferred Alternative would be executed under a site-specific design guideline document that is prepared by the developer and approved by the USAFA staff. This document would be used to support design and implementation of proposed building and infrastructure.

Additionally, the proposed EUL Area and the Project Area would be completely outside of USAFA's Main Airfield clear zones (CZs) and accident potential zones (APZs) and would not result in conflicts with airfield clearance zones. The Proposed Action is compatible with future land use plans and with adjacent land use. Therefore, the Preferred Alternative would not result in long-term, direct or indirect, adverse impacts to land use.

During construction activities, access to the property would be intermittently disrupted and current use would be curtailed; however, this is expected to be for relatively short periods and will be managed to minimize access impacts for trailhead parking. Specifically, no disruptions are expected for users of the New Santa Fe Regional Trail during the construction activities except for the relocation of parking and trailhead access, which would be clearly communicated to recreational users through posted signage. As a result, implementation of the Preferred Alternative would result in be minor short-term direct impacts to land use; however, no long-term indirect impact to land use would result.

Aesthetics

Impacts to aesthetics from the Preferred Alternative would include short-term disturbance to the visual landscape from construction activities and long-term impacts resulting from the addition of the proposed development and its associated operations. Short-term impacts from construction to the physical setting and visual quality of the landscape would occur over the 5-year phased construction period, while the long-term alteration to views of USAFA from the addition of manmade structures would endure for the duration of the lease, which varies from 50 to 99 years depending on the land use. Short-term visual impacts from construction would

become less noticeable following completion of overlot grading, which is projected to last approximately nine months. Subsequently, construction activity would be localized to individual parcels as they undergo development. Construction activities typically would take place five days a week; however, it is anticipated that some degree of construction equipment would be staged onsite throughout the entire construction period. Additionally, heavy-load construction traffic and dust generated by construction activities would create short-term visual intrusions to recreationists and motorists along North Gate Boulevard. While short-term construction traffic and dust generation are addressed further in **Sections 4.3.2** and **4.5.2**, coordination between Blue & Silver's contractors and USAFA as well as construction BMPs such as site watering will be utilized to minimize the visual intrusion generated by construction activities. Based on the presence and proximity of various manmade structures and the use of construction BMPs, direct short-term impacts to visual resources associated with the Preferred Alternative would be adverse and moderate. No indirect short-term impacts to aesthetics would be anticipated as a result of the Preferred Alternative.

With regard to long-term impacts from implementation of the Proposed Action, the IDP (BMCD, 2018) includes a detailed discussion of USAFA Design Principles in which the preservation of important views and vistas is identified at the first among the important guiding principles. The IDP summarizes this primary design principle by explaining that the development of USAFA was based upon the use of the natural landscape and the terrain of the Rampart Range foothills. The preservation of views and the visual connection with nature is described as an essential characteristic of the original site selection and planning of USAFA and requests that this concept is to be preserved. The placement and orientation of buildings on USAFA allows the spaces between them to open into the larger landscape, offering grand and expansive views of the surroundings. According to this principle, the views to be considered include those from various access points including entries to USAFA, entrances to area developments, and visual access points from the surrounding area such as key points along I-25. Blue & Silver recognizes the desire for continued application of this principle must impact development that is permitted between Stadium Boulevard and I-25 including the Proposed Action.

The design guidelines being developed by Blue & Silver in cooperation with USAFA staff for the Proposed Action includes specific elements intended to address the goals of the IDP Design Principles and with respect to Principle 1 as described above, the following Design Principles are incorporated into the Proposed Action design guidelines:

- Preserve views of the Front Range and Cadet Area from the Visitor Center and Polaris Plaza.
- Reduce the visual impact of parking and service areas.
- Reinforce the literal and perceived visual connections between the Cadet Area and True North Commons.
- Respect the iconic character and important location of the Visitor Center.

To successfully execute the Proposed Action in accordance with these principles the following specific actions are included in the Proposed Action design guidelines to preserve and ensure compatibility with USAFA's characteristic landscape:

- Orient outdoor plaza spaces to view west toward Cadet Area.
- Orient parking bays to allow long views to mountains from buildings.
- Frame key views to enhance the visual connection to the rest of the Academy grounds and buildings.
- Buildings and site lighting shall not protrude into the Primary Chapel view plane defined as the Polaris Plaza elevation 6,674' to the elevation of the Chapel base 7,173'.
- Preserve the view from the Visitor Center to the Chapel.
- Step the landscape improvements back horizontally from Northgate Boulevard. to open views to the Front Range.
- Site buildings to compliment the Visitor Center massing and location. Defer to Visitor Center building importance in the entry statement.
- Buildings may not protrude into the "Plaza View Plane" for the primary view between the Polaris Plaza and the Cadet Area.
- Terminate internal views from primary drive aisles with public art or natural areas.
- Site buildings to reduce the visual impact on primary views from adjacent parcels and roadways.
- Preserve western views from drive aisles to Cadet Area and Front Range.
- Open views to natural landscape at the end of aisles.
- Enhance and preserve view to Cadet Area.
- Enhance and preserve views to and from the Visitor Center and Hotel.
- Establish a direct visual connection between the Hotel Public Space and the Visitor Center gathering areas.
- Use view corridors to reinforce the relationship to the natural environment.

Implementation of the Proposed Action would result in long-term impacts to visual resources through the addition of new elements into the landscape's foreground that would alter the existing forms, color and texture that characterize the landscape. The potential geometric and blocky form of proposed structures associated with the Proposed Action would be in contrast with the proposed EUL Area's existing natural landforms and vegetation of the EUL through the addition of linear edges and forms. As a result, the Proposed Action would contribute to changes in the landscape character, replacing what is left of the area's natural, rural landscape with a mixed-use commercial environment. These alterations to the landscape would be a noticeable change but would be consistent with existing and emerging baseline trends, as development in the northern Colorado Springs area continues to expand. The proposed Gateway Visitor Center would be the tallest building at the TrueNorth Commons with a maximum height of 120 feet, followed in height by the proposed hotels reaching a maximum height of 100 feet. These facilities

would be designed and constructed with offsets approved by the TrueNorth Commons Design Review Board that would preserve important USAFA views and ensure any potential adverse impacts to visual resources remains less than significant. Consultation with the TrueNorth Commons Design Review Board will also address the aesthetics of the proposed structures to safeguard the landscape's characteristic form, color, and texture from adverse effects associated with the introduction of new elements. Specifically, the TrueNorth Commons Design Review Board would assess the structure, form, and layout of each building's proposed design and prescribe changes to ensure compatibility with USAFA's landscape and avoid, minimize, and/or mitigate adverse effects to the area's landscape and visual quality. The proposed TrueNorth Common facilities would be designed in accordance with the TrueNorth Commons Design Guidelines, which are intended to assist in the creation and implementation of a strong, consistent design direction and superior level of quality commensurate with the image and quality of USAFA. developed in concert with Additionally, while the long-term addition of manmade structures to the proposed EUL Area would alter the visual quality of the landscape's foreground, the proposed EUL Area's proximity to I-25, North Gate Boulevard, the New Santa Fe Regional Trail parking lot and USAFA's North Security Gate contribute to an already modified, less-than natural visual quality in the foreground view of the proposed EUL Area. Furthermore, the proposed EUL Area's lower elevation, distance, and peripheral position to USAFA's Cadet Area and the Rampart Range ensure that the proposed structures would not compete or block important vistas of USAFA's campus, which would remain an unimpeded background to the Preferred Alternative's proposed development complex.

Long-term light and glare generated from the proposed development complex would be managed through application of the TrueNorth Commons Design Guidelines, which specifies that lighting be kept to a minimum to preserve dark skies and requires the use of full cutoff fixtures that will illuminate only the ground. Adherence to the TrueNorth Commons Design Guidelines and consultation with the TrueNorth Commons Design Review Board would ensure that impacts associated with lighting and glare from implementation of the Proposed Action are minimized so that light spillage and glare is reduced to the extent practicable. Through the incorporation of the TrueNorth Commons Design Guidelines and consultation with the TrueNorth Commons Design Review Board, the direct long-term impacts associated with the Preferred Alternative would be adverse and moderate. No indirect long-term impacts to aesthetics would be anticipated as a result of the Preferred Alternative.

Considering that the proposed EUL Area's landscape is common to the region, a relatively minor component of the expansive, diverse USAFA landscape, and given that the Design Review Board for the proposed TrueNorth Commons would not permit vertical structures to block the USAFA landscape as seen from sensitive viewing areas, the short-term and long-term impacts to visual resources resulting from implementation of the Preferred Alternative would be adverse and moderate.

4.1.3 Environmental Protection Measures

Land use planning on USAFA would continue to be guided by the community of installation-approved plans including the AICUZ study, IDP, and the USAFA Design Standards. Adherence to these plans would help ensure that growth and organization of USAFA is done in a compatible manner with on- and off-installation land uses.

Construction BMPs and compliance with the EUL terms and conditions including approval of building design details from the Design Review Board prior to construction of vertical structures would minimize adverse impacts to visual resources, ensuring effects remain less than significant.

4.2 Noise

When evaluating noise effects, several aspects are examined, including: (1) the degree to which noise levels generated by operations as well as ongoing construction activities would be higher than the ambient or background noise levels; (2) the degree to which there would be hearing loss and/or annoyance; and (3) the proximity of noise-sensitive receptors (e.g., residences, schools, hospitals, parks) to the noise source. An environmental analysis of noise includes the potential effects on the local population. Such an analysis estimates the extent and magnitude of the noise generated by the Proposed Action. Noise impacts from the Proposed Action would be considered significant if it resulted in a 3-dB DNL increase in persistent noise at a sensitive receptor. In addition, based on AICUZ guidance, land-use compatibility recommendations begin when predicted noise exposure levels exceed 65 dBA DNL. dBA or A-weighted decibels are used to express the relative loudness of sound in air as perceived by the human ear. As such, this can also provide an indicator as to when impacts could be considered significant. The nearest sensitive noise receptor to the proposed EUL Area is Ridge Pointe at Gleneagle Apartments, a residential area located approximately 3,270 ft east of the proposed EUL Area's eastern boundary (and roughly 3,758 ft east of the center of the proposed Project Area). This residential area is also approximately 1,783 ft east of the I-25 Northbound centerline, which lies between the proposed EUL Area and the residential area.

For areas of predicted noise exposure less than the 65 dBA DNL, a preferred method of analyzing potential impacts is to examine prevailing ambient or background noise levels at sensitive receptors and compare the predicted noise exposure from the Proposed Action or its alternatives. Some increases of noise levels are not readily apparent to listeners. It is well accepted that sound level increases below 3 dBA are not perceptible. Additionally, due to the logarithmic nature of the dB, the doubling of a noise event level creates a 3-dB increase.

4.2.1 No Action Alternative

Under the No Action Alternative, the construction and operation activities associated with the development of a mixed-use commercial park would not occur; therefore, no change to the baseline noise environment would be expected.

4.2.2 Preferred Alternative (Proposed Action)

Implementation of the Preferred Alternative includes the development, construction, and operation of a mixed-use commercial park. For noise effects stemming from construction activities and ongoing operations of facilities, the affected environment is narrowly focused and compact, and generally would include the area lying within ½ mile to 1 mile of the proposed development. Several houses are located within 1 mile of the proposed development; however, the closest is more than 3,279 ft (0.62 miles) from the nearest proposed EUL boundary, east of I-25. Additionally, USAFA dormitories and classrooms are located more than 2 miles west of the EUL Area. The USAFA North Security Gate is the only occupied area located near the proposed EUL Area, and its future land use is listed as Industrial.

CONSTRUCTION

Noise associated with the operation of machinery on construction sites is typically short-term, intermittent, and highly localized. The loudest machinery generally produces noise levels between 77 to 101 dBA at 50 ft from the source (**Table 4-1**). However, construction noise does not typically generate a predicted noise exposure of 65 dBA DNL or greater because, even at extremely high rates of operation, the equipment itself does not generate noise so intense that averaged over a year it would produce a 65 dBA DNL. It is also important to note that the typical noise level for construction equipment noise does not consider the ability of sound to be reflected/absorbed by nearby objects and the ground, which would further reduce noise levels.

Table 4.1 Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level 50 feet from source, dBA
Air Compressor	80
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	82
Grader	85
Impact Wrench	85
Jackhammer	88

Equipment	Typical Noise Level 50 feet from source, dBA
Loader	80
Paver	85
Pile Driver, Impact	101
Pile Driver, Sonic	95
Pneumatic Tools	85
Pumps	77
Rock Drill	95
Roller	85
Scarifier	83
Scraper	85
Shovel	82
Truck	84

Source: FTA, 2018.

The construction activities included under the Preferred Alternative would include site preparation, building, and paving activities. Impacts from construction activities associated with the Preferred Alternative were evaluated through a general noise assessment that considered L_{eq} for the two noisiest pieces of equipment expected for construction activities. The cumulative noise expected for the proposed construction activities was determined using decibel addition and evaluated against General Assessment Construction Noise Criteria for residential and industrial land use, which are included in **Table 4.2**.

To determine the combined noise level of all construction equipment operating together, the two pieces of equipment with the loudest noise levels were considered. The estimated worst-case scenario noise level for the proposed construction equipment includes an Impact Pile Driver (101 dBA) and a Jackhammer (88 dBA). Using the rules for decibel addition, construction noise would be expected to not exceed 101.21 dBA at 50 feet. Given a total noise level of 101.21 dBA at 50 ft and attenuation of noise with distance, the maximum noise level anticipated during the noisiest construction activities would approximate 54.31 dBA at the nearest residential area (roughly 3,758 feet to the east of the center of the proposed construction area) and 78.64 dBA at the North Security Gate (roughly 400 ft to the southwest of the center of the proposed construction area). The predicted maximum noise level calculated for the Site's two noisiest pieces of equipment (worst-case scenario) would not exceed the General Assessment Construction Noise Criteria for residential or industrial areas, as shown in **Table 4.2**.

Table 4.2 General Assessment Construction Noise Criteria

Land Use	$L_{eq.equip(1hr)}$, dBA	
	Day	Night
Residential	90	80
Commercial	100	100
Industrial	100	100

Source: FTA, 2018.

As discussed in **Section 3.2.2**, the existing background noise (L_{dn}) for the nearest residential area is 55 dBA. Using FTA-approved equations, the expected construction noise for the Preferred Alternative would result in a L_{dn} of 51.31 dBA at the nearest residential area, which would be lower than the current baseline condition. Therefore, the short-term impact from construction noise in relation to a change in a persistent noise exposure at the nearest residential area would be negligible. Construction activities would occur during the daytime hours of 7:00 am to 5:00 pm over an extended period; therefore, construction noise associated with the Preferred Alternative would generally be much lower than the worst-case scenario utilized for the assessment. Given the acceptable noise exposure anticipated for the nearest residential area and the North Security Gate, construction activities associated with the Preferred Alternative would result in a short-term, minor, direct adverse impact to the local noise environment.

OPERATIONS

Following completion of construction activities, noise from the long-term operation of the development would consist of commercial background noises that would be lower than the worst-case construction noise scenario assessed. It is anticipated that the outdoor background levels for commercial development would typically not exceed 55 decibels. Special events may cause a non-standard increase in noise levels; however, these events would be temporary and would not have significant impacts on background noise levels for extended periods of time. Therefore, the operations of the Preferred Alternative would have a long-term, negligible, direct, adverse impact to the local noise environment.

4.2.3 Environmental Protection Measures

Noise generation during construction activities would be isolated to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.).

4.3 Air Quality

Impacts to air quality would be considered significant if emissions from the Proposed Action:

- Cause or contribute to a violation of any national or state ambient air quality standard,
- Trigger a conformity determination for CO,
- Expose sensitive receptors to substantially increased pollutant concentrations or
- Represent an increase of 10 percent or more in an affected area's emissions inventory.

4.3.1 No Action Alternative

Under the No Action Alternative, there would be no emissions from construction or operation of the mixed-used commercial park. Therefore, no change to the baseline air quality would be expected outside of existing regional trends.

4.3.2 Preferred Alternative (Proposed Action)

The Proposed Action includes construction of the proposed mixed-use commercial park and operation of the development (building heating and cooling and commuting). The proposed development of the EUL Area would add short-term air emissions during construction and long-term air emissions from additional traffic, commercial development, and human occupancy. Each of these short-term (construction) and long-term (operations) components would have an effect on air quality and is considered when determining impacts to air quality.

CONSTRUCTION

The proposed construction activities associated with the Preferred Alternative would result in temporary, minor, direct, adverse increases in fugitive dust (PM10) from disturbance to soils and increased combustion emissions (VOCs, CO, SO2, and nitrogen oxide [NOx]) from the use of construction equipment. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. Emissions from activities associated with site clearing, grading, and from vehicular traffic moving over the disturbed site would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. An emissions factor developed for unmitigated fugitive dust conditions is 0.22 tons (T) of PM10 per acre per month; however, watering exposed soil at the beginning and end of each day decreases the amount of fugitive dust released into the atmosphere from construction operations and trucks driving on unpaved surfaces by as much as 50 percent. Other BMPs for fugitive dust control include:

- Stabilizing open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Installing wind fencing and phase grading operations where appropriate, and operating water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Short-term levels of particulate matter are expected to increase during the initial overlot grading activities, however, the main emission sources would be transient and temporary with impacts localized to the immediate vicinity of the construction activities and mitigated by the utilization

of fugitive dust control BMPs. Given the use of BMPs and that following the initial overlot grading activities, PM10 concentrations would be reduced to background concentration levels, the Preferred Alternative would result in a short-term, minor, direct adverse impact on air quality in relation to PM10.

The Air Force's Air Conformity Applicability Model (ACAM) was completed for 2019 through 2024 for grading and construction activities at the Development Area to evaluate short term impacts as well as for the year 2025 to evaluate annual emissions associated with the development's operations to evaluate long-term impacts. These emissions were then compared to 2014 El Paso County emissions. The emissions associated with construction and demolition activities would be negligible and would not affect the local air quality. These calculations are presented in **Table 4.3** with details in **Appendix D.**

The ACAM was completed using conservative grading, planning, construction, and occupational estimates for the Preferred Alternative. These estimates include the following:

- 1,655,267 square feet of site grading
- 28,000 cubic yards of import fill material during site grading
- 120,000 square feet of trenching
- 2,000 cubic yards of import fill material during trenching
- 770,000 square feet of paved areas
- 275,000 square feet of architectural coatings
- 690,000 building square footage

The following results for VOCs, SO_x, NO_x, CO, PM_{10}, $PM_{2.5}$, Pb, and ammonia (NH_3) were estimated by the ACAM as summarized in the following table.

Table 4.3: ACAM Results for the Preferred Alternative

	Annual Total Emissions (tons)									Project Emissions as % of Annual County Emissions
Year/ Pollutant	2019[1]	2020	2021	2022	2023	2024[2]	2025[3]	El Paso County[4]	Colorado[4]	
VOCs	0.675	2.754	2.552	1.607	1.607	3.991	5.276	25,820.703	263,389	0.010 %
NO_x	4.590	14.751	11.483	5.056	5.056	6.963	8.462	19,572.254	251,564.25	0.041 %
CO	3.511	12.112	9.919	5.005	5.005	40.981	59.496	99,684.790	919,899.07	0.019 %
SO_x	0.009	0.030	0.024	0.011	0.011	0.057	0.081	7,004.205	33,395.37	0.00045 %
PM_{10}	88.499	212.596	124.161	0.263	0.263	0.366	0.452	11,116.980	246,483.18	0.548 %
$PM_{2.5}$	0.197	0.671	0.538	0.262	0.262	0.356	0.438	2,643.521	59,099.50	0.015 %
Pb	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.340	12.02	0.00 %
NH_3	0.001	0.006	0.007	0.005	0.005	0.214	0.319	824.648	54,179.34	0.0096 %
CO_2	920.3	2,976.7	2,353.8	1,065.4	1,065.4	6,695.7	9,597.4	26,480,750	100,563,860.9	0.013 %

1- Construction Begins (8/2019)
2- Construction Ends (4/2024)
3- Steady State Conditions
4- County and State annual emissions based on 2014 National Emissions Inventory Data
NC – Not Calculated

Based on the ACAM results, carbon monoxide would not exceed the conformity threshold values established at 40 CFR § 93.153 of 100 tons per year during construction activities associated with the Preferred Alternative, and no conformity determination would be required. Therefore, the potential air quality effect of construction activities for the Preferred Alternative in relation to the General Conformity Rule is considered to be short-term, minor, direct, and adverse. A summary of the ACAM is included in **Appendix D**.

The combustion of fossil fuels by construction equipment and construction worker's vehicles during commutes contribute to an increase of GHG. The ACAM Report for the Preferred Alternative calculated that the total CO_2 generated over the 5 years of phased construction would be about 15,077 T, or roughly 2,513 TPY. The Department of Energy – Energy Information Administration (DOE-EIA) estimates that in 2016, gross CO_2 emissions in Colorado were 89.5 million metric tons or 98.66 million tons (DOE-EIA, 2019). Approximately 2,513 TPY of CO_2 were estimated to be emitted during the development's construction, which is less than 0.0025 percent of the Colorado statewide CO_2 emissions; therefore, the construction of the Preferred Alternative would have a short-term, negligible, direct, adverse contribution towards Colorado's statewide GHG emissions.

De minimis levels are not established for attainment criteria pollutants or other HAPs; therefore, projected emissions for the Preferred Alternative are evaluated against 2014 El Paso County annual emissions to determine the relative air quality impacts from the Proposed Action during the 6-year phased construction period. Since the increase in attainment pollutant and HAP emissions predicted for the proposed project for construction sources (see **Appendix D**) would be short-term over a 5-year duration and would be only a fraction of the regional baseline emissions of El Paso County as summarized in **Table 4.3**, the Proposed Action would have a short-term, direct, adverse, negligible effect on air quality with respect to attainment pollutants and HAPs.

As a conformity determination is not applicable to the Proposed Action and estimated project emissions represent a fraction of the regional baseline emissions of El Paso County in which the actions would be conducted, it can be concluded that the short-term direct impact from the Proposed Action would be adverse, but minor, to ambient air quality in the ROI. Detailed air emissions calculations are included in **Appendix D**.

OPERATIONS

As discussed in **Section 3.3.2**, the ROI is within a maintenance area for CO and the proposed development would require a conformity determination if CO emission rates from operations exceed 100 tons per year; however, based on ACAM modeling, CO from long-term operation of the Preferred Alternative would not exceed 100 tons per year and a conformity determination would not be required. Therefore, the potential air quality effect of long-term operation of the Preferred Alternative in relation to the General Conformity Rule is considered to be direct, adverse, but minor. A summary of the ACAM is included in **Appendix D**.

Emissions during the development's operations would come from the external combustion sources within the heating and cooling system, back-up generators for emergency power, and any chemicals or devices used by the individual tenants. The emissions from external combustion units depend on a variety of factors including the size/type of the combustor, firing configuration, fuel type, control devices used, operating capacity, and whether the system is properly operated/maintained. Based on the ACAM results and relative to El Paso County's 2014 emissions, the long-term effects from operations of the Proposed Action on air quality would be direct, adverse, and minor.

4.3.3 Environmental Protection Measures

Contractors would be required to implement fugitive dust-control measures, such as wind breaks and barriers, frequent water applications, application of soil additives, control of vehicle access, vehicle speed restrictions, covering of piles, use of gravel at site exit points, washing of equipment at the end of each work day and prior to site removal, and work stoppage. All construction and demolition equipment would be properly tuned and maintained prior to and for the duration of the Proposed Action. In addition, construction and demolition equipment and vehicles would reduce idling times to 5 minutes or less when possible. The Proposed Action would utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.

4.4 Water Resources

A potential impact on water resources would be significant if it were to result in one of the following scenarios:

- Reduce water availability to existing users or interfere with the supply
- Create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources
- Adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions
- Threaten or damage unique hydrologic characteristics

- Violate established laws or regulations that have been adopted to protect or manage water resources of an area.

4.4.1 No Action Alternative

Under the No Action Alternative, the proposed development would not occur; therefore, there would be no impact on water resources in the proposed Project Area.

4.4.2 Preferred Alternative (Proposed Action)

The Preferred Alternative has the potential to affect water resources in three ways: the runoff of sediment or other contaminants to Monument Creek, the reduction in the acreage of wetlands on USAFA, and/or the increase in impervious surfaces affecting stormwater management. The Preferred Alternative would result in an increase of impervious surfaces, which has the potential to decrease stormwater quality and increase stormwater quantity, particularly during large rain events when overland storm flows pick up contaminants and carry them into receiving water bodies. An adverse impact from development can occur when large areas of impervious pavement that once were pervious soils increase the speed at which stormwater enters channels; especially if a drainage channel cannot accommodate the increased volume of stormwater as it can result in flooding of areas upstream or downstream of the development.

4.4.2.1 Surface Water

CONSTRUCTION

There would be no direct effects to Monument Creek or Smith Creek as a result of the Proposed Action; however, potential soil erosion in the disturbed areas during the construction period would result in indirect effects to Monument Creek and/or Smith Creek in the event that the construction areas contribute higher suspended solids, turbidity, and sedimentation effects to downstream reaches. These impacts would only occur during a heavy precipitation event or large snow-melt event that generated surface runoff across the disturbed areas and would dissipate with downstream distance as pollutants settle-out and additional flows into Monument Creek dilute impacts. Under normal conditions, with no high runoff event, erosion of disturbed soils would not extend beyond the proposed Project Area. Since the Preferred Alternative would cover more than 1 acre in area, construction activities would be conducted in accordance with an EPA NPDES General Permit and associated SWPPP.

The NPDES General Permit, together with the required SWPPP, would outline construction site management practices designed to protect the quality of the surface water, groundwater, and natural environment through which they flow. The SWPPP would identify specific areas of existing and potential soil erosion, location of structural measures for sediment control, and management practices and controls for the construction period. SWPPP requirements under the NPDES General Permit would incorporate stormwater management controls such as placement

of silt fencing, straw waddles or bales, and construction of water bars. Compliance with the NPDES General Permit and associated SWPPP would minimize potential impacts to surface water quantity and quality to a level considered to be a minor effect. Spills of hazardous materials would have the potential of contaminating surface water.

Adherence to the SPCC Plan would minimize that potential to a level considered to be a minor effect. Site-specific BMPs would be developed during the construction design phase, but the following general BMPs would be used to reduce the potential for adverse impacts on water quality:

- Minimize soil exposure by clearing only the land needed for the current phase of construction.
- Control soil erosion by covering exposed soils, if practicable, whenever the construction area is idle.
- Install perimeter controls and sediment trapping devices, such as silt fences, fiber logs, small sediment basins, and vegetative buffer strips.
- Use inlet protection, such as berms or geo-fabrics, where runoff would enter the major drainage ways.
- Avoid tracking and depositing sediment off site by removing sediment from construction vehicles before they leave the site.
- Prevent soil contamination by fuels or other chemicals by using general construction site waste management (good housekeeping), preparing and adopting a SPCC plan or specific Spill Response Plan (SRP), and establishing appropriate vehicle maintenance and washing areas.

As a result of these controls, the Preferred Alternative's construction impacts to surface water would be short-term, adverse, indirect, and minor, and no short-term direct impact to surface water would be anticipated.

OPERATIONS

After construction, erosion on the site will be controlled through reclamation to soil stability and vegetation development; therefore, long-term increases to erosion rates would not be anticipated from the Proposed Action. Operation of the development after construction would not materially increase pollutant loads since the development's proposed drainage design includes two detention ponds which would serve as water quality ponds, allowing pollutants and particulates to settle out of developed waters prior to releasing stormwater volumes to the site's stormwater drainage pipes and dispersion basins. As discussed in **Section 2.3.5.4**, the dispersion basins would be designed to discharge waters at low velocity and via sheet flow to mitigate potential erosion of soils down gradient of the stormwater outfall structures. Post-construction analyses would be conducted to evaluate the effectiveness of the as-built stormwater reduction features and post-construction BMP's (operations and maintenance,

surface cleaning, infiltration, source control, etc.) would be utilized to reduce pollutant loads to the maximum extent practicable. As a result of these design and operational practices, the Preferred Alternative's long-term operational impacts to surface water would be anticipated to be adverse, indirect, and minor, and no long-term direct impacts would be anticipated.

4.4.2.2 Groundwater

CONSTRUCTION
Under the Proposed Action, there is no potential for direct contamination of groundwater. There are no major sources of potential contamination in the Project Area, and construction activities associated with the Preferred Alternative would not introduce any contaminants with the potential to affect groundwater, which is approximately 24 ft bgs in the proposed Project Area. In addition, none of the construction activities would sufficiently disturb the ground surface at a depth expected to encounter continuous groundwater. Minor amounts of groundwater encountered during future foundation excavation would be managed on-site so that only very small and short-term impact to the local groundwater system occurs. Therefore, only short-term direct, insignificant effects to groundwater would be occur from the Preferred Alternative's construction activities.

OPERATIONS
During the long-term operations of the Proposed Action, there is no potential for direct contamination of groundwater. There are currently no major sources of potential contamination in the Project Area, and operation activities associated with the Preferred Alternative would not introduce any contaminants with the potential to affect groundwater. Therefore, no direct adverse long-term effects to groundwater are anticipated. A reduction in infiltration would occur during the long-term operations of the Preferred Alternative due to the increase in impervious surface across the site; however, the proposed stormwater detention ponds would be completed with permeable soils; therefore, infiltration of stormwater would occur within the proposed development area. As a result of the detention and infiltration of stormwater flows in the development's proposed stormwater detention ponds, operations of the Preferred Alternative would have a long-term, negligible, indirect, adverse impact on groundwater resources in the proposed Project Area.

4.4.2.3 Wetlands

CONSTRUCTION
The Preferred Alternative would involve the permanent filling and/or modification of non-jurisdictional wetlands at USAFA. Wetland delineation of the proposed development area identified 0.873 acres of non-jurisdictional (isolated) wetlands within the area of potential disturbance, including 0.464 acres within a drainage ditch-fed erosional feature in proposed Parcels B and D and 0.409 acres within drainage ditches along North Gate Boulevard. As detailed work plans and structure designs for these projects are not finalized until shortly before

execution, it is not known precisely at this time exactly how many acres would be affected; however, this document assumes that all 0.873 acres of non-jurisdictional wetlands within the proposed development area would be temporarily or permanently filled or modified by construction activities for the Preferred Alternative. **Figure 4.1** illustrates the isolated wetlands that would be impacted by the proposed buildings and other paved areas within Parcels B and D, approximating 0.464 acres as well as 0.409 acres within potential work zones of proposed utility service lines along North Gate Boulevard. Where possible (along North Gate Boulevard), existing, functional wetlands would be avoided, and disturbance would be concentrated elsewhere. Given that the site's proposed utility corridor is designed to follow North Gate Boulevard and utilities are not typically located beneath drainage ditches, avoidance of a portion of the development area's existing wetlands is expected to be feasible and would minimize impacts to wetlands. If construction activities for the installation of utility infrastructure would impact the 0.409 acres of isolated wetlands along North Gate Boulevard, the direct adverse effects would be temporary and minor as grass-lined drainage ditches would remain present along North Gate Boulevard in the Proposed Action and reestablishment of the wetland areas is expected following construction. Additionally, these wetland areas along North Gate Boulevard

Figure 4.1 Proposed TrueNorth Commons Overlain with Existing Wetlands

expected following construction. Additionally, these wetland areas along North Gate Boulevard do not currently have high conservation values, with several locations underlain by asphalt and or sheet metal between 12-14 inches bgs.

It has been confirmed with the USACE that a Section 404 permit would not be needed to implement the Proposed Action because the potential impacts of the Preferred Alternative are limited to non-jurisdictional wetlands, which are not regulated by USACE. Therefore, mitigation measures for the Preferred Alternative with regard to wetlands would not be mandated by USACE.

Based on the 2018 INRMP, USAFA includes approximately 253 acres of wetlands; therefore, the potential permanent loss of 0.873 acres of isolated wetlands under the Preferred Alternative would constitute roughly 0.345 percent of USAFA's wetland inventory. Based on the size and low conservation value of the wetlands proposed for direct impact, the short-term effects of the Preferred Alternative are expected to be direct, adverse, and minor on wetlands. As a result, a Finding of No Practicable Alternative (FONPA) would be prepared in support of the Proposed Action.

OPERATIONS
Long-term operations under the Preferred Alternative would not result in additional impacts to wetland areas. Reestablishment of some portion of the roadside drainage wetlands is likely over the long-term given that the drainage ditches will persist in the Preferred Alternative, disturbance in the area would be temporary, and the area's current low species diversity (cattail, narrowleaf willow, and thistle) will readily repopulate the disturbed areas following utility installation. Based on the reestablishment of wetlands along North Gate Boulevard and the low conservation value of the wetlands proposed for impact, the long-term direct effects of the Preferred Alternative are expected to be adverse, but minor, on wetlands. Additionally, as discussed below, stormwater management for the Preferred Alternative is expected to reduce erosion, peak stream flow, and siltation from the development to below pre-development conditions that would have the effect of protecting and enhancing wetlands adjacent and downstream of the Project Area, and which may also allow wetlands to form in areas where they do not currently exist. As wetlands are valuable habitat and perform ecosystem functions such as water purification, groundwater recharge, and streamflow maintenance, this potential long-term indirect effect would be beneficial, but negligible.

4.4.2.4 Floodplains

CONSTRUCTION
Construction of the Preferred Alternative would result in no direct or indirect short-term disturbance to the 100-year floodplain. The majority of the 100-year floodplain boundary would be located approximately 300 feet from the proposed EUL Area (to accommodate USAFA's PMJM Conservation Area).

OPERATIONS

The operations of the proposed development would result in no direct long-term impacts to the 100-year floodplain; however, the Preferred Alternative would result in an increase of impervious surfaces, which has the potential, particularly during large rain events, to increase the velocity and quantity of stormwater entering adjacent channels and flood adjacent areas if a drainage channel cannot accommodate the increased volume of stormwater. These impacts would be considered indirect long-term impacts to the 100-year floodplain. Nevertheless, as discussed in **Section 2.3.5.4**, site design would incorporate stormwater retention and reuse technologies to the maximum extent technically feasible to maintain pre-development hydrology which would result in no adverse indirect or direct long-term impacts to floodplains.

4.4.2.5 Stormwater Management

CONSTRUCTION

Grading and construction of the mixed-use commercial development under the Preferred Alternative would result in short-term soil disturbance that will be controlled with stormwater BMPs implemented to comply with the applicable construction stormwater regulations and permit requirements. Construction stormwater permit requirements will require the construction contractor to:

- Install appropriate BMPs to prevent sediment from leaving the site and perform required maintenance.
- Protect storm drain inlets to prevent sediment from entering storm drains.
- Immediately clean up spills of fuels, lubricants, and other HAZMAT in accordance with the Hazardous Materials Spill Management Plan.
- Conduct site inspections to ensure sediment is not leaving the site.
- Document inspections on a form developed by the Contractor.

OPERATIONS

A large portion of the proposed TrueNorth Commons development would be buildings or pavement that would result in an increase of impervious surfaces; therefore, implementation of the Preferred Alternative would convert a majority of the undeveloped grasslands in the proposed development area to impervious surfaces. The creation of impervious surfaces has the potential to decrease stormwater quality and increase post-development runoff flows, particularly during large rain events. Overland storm flows pick up contaminants and carry them into receiving water bodies. Large areas of impervious pavement that once were pervious soils increase the speed at which stormwater enters channels; if a drainage channel cannot accommodate the increased volume of stormwater, areas upstream or downstream can flood.

This conversion is anticipated to increase post-development runoff flows slightly; however, post-development flows would be mitigated by conforming to the post-construction stormwater runoff control design criteria presented in the Colorado Springs City */* County Storm Water

Drainage Criteria Manual Volumes I and II (Drainage Manual), which requires control of runoff to historical rates of release.

As discussed in **Section 3.4.1.5**, Section 438 of the EISA requires that natural hydrology be maintained or restored to the maximum extent technically feasible. Predevelopment site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. Post-development flows would be mitigated by conforming to the post-construction stormwater runoff control design criteria presented in the Drainage Manual. Predevelopment hydrology has been calculated (as discussed in **Section 2.3.5.4**) and site design would incorporate stormwater retention and reuse technologies to the maximum extent technically feasible. Additionally, post-construction analyses would be conducted to evaluate the effectiveness of the as-built stormwater reduction features. The incorporation of stormwater design elements in the Preferred Alternative would result in no adverse indirect or direct long-term impacts to stormwater management.

4.4.3 Environmental Protection Measures

An NPDES construction storm water permit would be obtained as applicable for the construction of the Preferred Alternative. An erosion-and-sediment-control plan and SWPPP would be developed for the Proposed Action to minimize soil erosion and surface water degradation. BMPs would be developed as part of the SWPPP to manage storm water both during and after construction. Standard erosion-control measures (e.g., silt fencing, sediment traps, application of water sprays, and re-stabilization and revegetation of disturbed areas) would minimize environmental impacts on surface water. The placing of berms along nearby water bodies would decrease the amount of potential sedimentation in adjacent water bodies. Proper housekeeping, retention of debris within the site boundaries, demolition equipment maintenance, petroleum and hazardous material storage, and adherence to the installation's SPCC Plan or specific SRP in the event of a spill would minimize introduction of pollutants to surface waters. Also see **Appendix E**, Conservation Measures.

4.5 Safety and Occupational Health

An impact on occupational health and safety would be significant if there was a substantial increase in risk to the safety and health of USAFA personnel or personnel associated with the Proposed Action.

4.5.1 No Action Alternative

Under the No Action Alternative, the construction activities associated with the development of a mixed-use commercial park would not occur; therefore, no change to the existing health and safety risk would occur.

4.5.2 Preferred Alternative (Proposed Action)

CONSTRUCTION

Under the Proposed Action, construction activities will present potential safety risks, including risks from hazardous materials (see **Section 4.6.2**), increased construction traffic (see **Section 4.12.2**), and occupational risks associated with working in a construction zone. These safety risks will be short-term, ceasing after construction activities are completed. These safety risks could be reduced through the use of industry standard occupational protective measures (such as fall protection and hearing protection), and other standard construction management practices. Overall, the increases in safety and occupational health risks from increased traffic volumes and construction activities would be short-term, manageable, and reduced through standard construction management practices. Therefore, implementation of the Preferred Alternative would result in short-term, minor, direct adverse effects on safety and occupational health.

Indirect short-term impacts from implementation of the Preferred Alternative on safety and occupational health would include intermittent increases in noise, traffic interference, and added distractions on the North Security Gate staff. Interaction between construction contractors and USAFA personnel would be limited to North Gate Boulevard during the construction period and would be mitigated to the extent possible by organizing work activities in a manner that reduces blockage or crossing of North Gate Boulevard, noise exposure, and traffic pressures associated with contractor parking and crew arrival/departure times. Blue & Silver and their contractors would work with USAFA to coordinate any necessary traffic interruptions along North Gate and minimize impacts through advance notification and conscientious scheduling. Given coordination and standard construction BMPs, the Preferred Alternative would result in a short-term, minor, indirect adverse impact to safety and occupational health.

OPERATIONS

The long-term operations for the Preferred Alternative would not pose potential risks to the military, civilian, and other tenant personnel at USAFA. Upon development completion, contractors working to maintain the development and employees of tenant organizations would follow industry accepted safety practices; therefore, the Preferred Alternative would result in long-term, negligible, direct adverse impacts to safety and occupational health. The long-term indirect impacts to safety and occupational health associated with implementation of the Preferred Alternative would include the minor increase to traffic from employees and visitors of the proposed development and the potential distraction the development would pose to the North Security Gate. These impacts are further discussed in this EA's traffic and security sections; however, as discussed in these resource sections, the Preferred Alternative would result in long-term, minor, indirect, adverse impacts to safety and occupational health through operational impacts on traffic along North Gate Boulevard and the North Security Gate.

4.5.3 Environmental Protection Measures

Interaction between construction contractors and USAFA personnel would be limited to North Gate Boulevard during the construction period and would be mitigated to the extent possible by organizing work activities in a manner that reduces blockage or crossing of North Gate Boulevard, noise exposure, and traffic pressures associated with contractor parking and crew arrival/departure times. Blue & Silver and their contractors would work with USAFA to coordinate any necessary traffic interruptions along North Gate and minimize impacts through advance notification and conscientious scheduling. All contractors performing construction activities at the proposed Project Area would be responsible for following safety regulations and worker compensation programs. In addition, all contractors would be required to perform construction activities in a manner that does not pose any risk to its workers or USAFA personnel. An industrial hygiene program addresses exposure to hazardous materials, use of personal protective equipment, and the availability of Material Safety Data Sheets. Industrial hygiene would be the responsibility of contractors, as applicable.

4.6 Hazardous Materials and Waste

Impacts from hazardous materials or hazardous wastes would be significant if the alternative:

- Generates, uses, or stores hazardous materials or hazardous wastes in violation of federal or state regulations
- Exposes construction workers to increased health risks from working in existing contamination without proper training and equipment.

4.6.1 No Action Alternative

Under the No Action Alternative, the proposed development would not occur; therefore, there would be no change in hazardous materials usage or hazardous wastes generation.

4.6.2 Preferred Alternative (Proposed Action)

CONSTRUCTION
During construction activities for implementation of the Preferred Alternative, hazardous materials would be handled routinely, and the potential for spills would exist. The construction contractors working on the proposed development would comply with all applicable permits and use standard BMPs designed specifically to minimize the risk of environmental contamination and harm to human health. Additionally, any spills or releases of hazardous materials would be cleaned up by the contractor as per the applicable approved SPCC plan or specific SRP. The construction contractors would comply with storm water regulations under the CWA to prevent exposure of storm water runoff to construction materials or sediment and would manage storage, handling, and transportation of hazardous materials in accordance with

applicable regulations and procedures as outlined in **Section 3.6.2.1**. Because hazardous materials would be managed in accordance with applicable regulations, the potential short-term effects of construction with regard to hazardous materials and waste would be adverse, direct, and negligible.

OPERATIONS

Blue & Silver and/or some of its tenants at the development park may have the need to transport and use hazardous materials for things such as parts washing, painting or stripping, and fuel for backup generators at the commercial park. Because the individual tenants for the development park are not known at this time, the types and quantities of hazardous materials likely to be used or hazardous wastes that would be generated by the Proposed Action are not known; however, just as any civilian business that uses hazardous materials or generates hazardous wastes, Blue & Silver and each tenant would be responsible for following the applicable Federal and Colorado state laws and regulations for transporting, handling, storing, treating and disposing of hazardous materials and/or hazardous waste. No disposal of any hazardous waste would be permitted on either the leased parcel or USAFA.

Because the USAFA business park tenants are not expected to consist of Federal agencies like many other tenants on the base, the development's tenants would not participate in USAFA environmental management programs. As a condition of the lease, Blue & Silver would prepare a Hazardous Waste Management Plan (HWMP) that would stipulate the processes and procedures for transporting, handling, storing, treating and disposing of hazardous materials and/or hazardous waste within the proposed mixed-use commercial park. The HWMP would be prepared before any hazardous materials are brought onto the project site. Any releases of hazardous wastes to the environment would be the responsibility of the tenant and Blue & Silver. Provisions in the Air Force EUL with Blue & Silver, and stipulated in the HWMP, would specify the actions Blue & Silver would need to take with respect to notifying the Air Force of the release. As the overall lessee, Blue & Silver would be responsible for ensuring that its tenants abide by all applicable laws and regulations; therefore, the long-term impact of the Preferred Alternative on hazardous materials or generating hazardous wastes would be direct adverse, and negligible.

4.6.3 Environmental Protection Measures

The construction contractors would comply with storm water regulations under the CWA to prevent exposure of storm water runoff to construction materials or sediment and would manage storage, handling, and transportation of hazardous materials in accordance with applicable regulations and procedures as outlined in **Section 3.6.2.1**. A site-specific health and safety program addressing potential exposure to hazardous materials, use of personal protective equipment, and the availability of Material Safety Data Sheets would be the responsibility of contractors, as applicable. As a condition of the lease, Blue & Silver would prepare a HWMP that would stipulate the processes and procedures for transporting, handling,

storing, treating and disposing of hazardous materials and/or hazardous waste within the proposed mixed-use commercial park. Provisions in the Air Force EUL with Blue & Silver, and stipulated in the HWMP, would specify the actions Blue & Silver or the BID would need to take with respect to notifying the designated Air Force contact of the release.

4.7 Biological Resources

Impacts on biological resources would be significant if the alternative resulted in:

- A major adverse effect to any federally, state, or locally regulated or regionally sensitive species or valuable natural resource (sensitive plant/animal community);
- A major adverse effect to endangered, threatened or candidate species or if it adversely modified or destroyed their critical habitat under ESA, or habitat where special status species are known to occur; or
- A major adverse effect to the regional abundance of a species or habitat.

4.7.1 No Action Alternative

Under the No Action Alternative, the proposed development would not occur; therefore, there would be no impacts on biological resources in the proposed Project Area.

4.7.2 Preferred Alternative (Proposed Action)

4.7.2.1 Vegetation

Implementing the Preferred Alternative would not result in significant impacts to vegetation at USAFA. Construction of the mixed-use commercial park would occur on approximately 31 acres of grassland, 3 acres of upland forest, 0.5 acres of riparian tree/shrub/forb and 1.5 acres of previously developed/disturbed lands. The Proposed Action would also require installation of utilities along North Gate Boulevard that would result in temporary impacts to an additional 20 acres of previously disturbed/developed land primarily comprised of asphalt paving, but which also include approximately 0.4 acres of low-quality isolated wetlands. The proposed Development Area is primarily comprised of native and non-native herbaceous vegetation including cheatgrass (*Bromus tectorum*), smooth brome (*Bromus inermis*), blue grama (*Bouteloua gracilis*), buffalo grass (*Bouteloua dactyloides*), sand dropseed (*Sporobolis cryptandrus*), prickly pear (*Opuntia polyacantha*), hedgehog cactus (*Echinocereus* sp.) and Great Plains yucca (*Yucca glauca*). Where wetlands and riparian habitat are able to form, sandbar willow (*Salix exigua*), cattail (*Typha spp*.), and Nebraska and Emory's sedges (*Carex nebrascensis* and *Carex emoryi*, respectively) are prominent; however, these areas account for less than 2 percent of the proposed area of disturbance and consist of wetlands formed within drainage ditches along North Gate Boulevard.

Ground vegetation in the proposed Project Area would be disturbed with surface-disturbing activities during construction, including vegetation clearing within the Project Area, overlot grading, trampling/crushing of vegetation, and potential hazardous spills from vehicles and equipment. Other impacts to vegetation would include increased erosion, sedimentation, fugitive dust generation, the potential for the spread and establishment of noxious weeds and invasive plant species, and damage to vegetation through herbicide drift when treating noxious weeds and invasive plant species.

The use of the North Gate Boulevard as the site's utility corridor would reduce impacts to vegetation communities, while standard construction BMPs (e.g., hay bales/silt fences along the edges of the disturbed areas, drip pans under construction vehicles, hazardous waste/spill response plan, daily collection of human trash, port-a potties) would be used to protect adjacent habitats from degradation and contamination. Additionally, the undeveloped portions of grasslands within the proposed EUL Area would be maintained as recommended in the INRMP to control noxious weeds and promote native grassland species.

As disturbed areas are ideal for the colonization of noxious weeds, these areas would be monitored by contractor personnel and managed as necessary. Disturbed vegetation would include characteristic native grasses (blue grama, little bluestem) and shrubs (Gambel oak, mountain mahogany) of USAFA grasslands and oak shrublands; these communities and species are regionally common and not sensitive. These effects would be permanent; however, given the size of the proposed development relative to USAFA's total grassland and shrubland areas, the effects of the Proposed Action are expected to be adverse, direct, and minor.

Construction activities will be required to follow measures in the *INRMP* (USAFA, 2018), *Integrated Noxious Weed Management Plan* (CNHP, 2015), and the USAFA SPCC Plan, avoiding or minimizing the effects of noxious weeds and hazardous spills on biological resources. As a result of these plans, the potential effects from noxious weeds (indirect) or potential spills (direct) on vegetation associated with implementation of the Preferred Alternative are considered to be short-term, adverse, and minor. To minimize impacts, mechanized equipment would not be operated in areas outside of the proposed Project Area or in areas not undergoing work.

Ponderosa pine is the prominent tree throughout the majority of the upland woodlands in the northern portion of the proposed development in addition to less frequent species including Gambel oak and mountain mahogany. Removal of trees and shrubs would be considered a long-term reduction of these vegetation types for biological resources, since it would take more than 5 years for replaced trees to grow to heights that are similar to existing trees. In accordance with the 2019 USFWS Biological Opinion, all temporary disturbed areas would be revegetated with native seed mixes to reduce erosion and replace habitat value per USAFA's Erosion Control Revegetation and Tree Care Standards. Additionally, native shrubs and trees would be planted

downstream of each dispersion basin to enhance landscaping around the basins following completion of project construction. Adherence to these revegetation and tree care standards, as well as provisions of the *INRMP* (USAFA 2018), would minimize long-term effects to vegetation. Given the use of BMPs, the scale of the disturbance relative to the grassland community size at large, and the location of the proposed development in areas previously disturbed (North Gate Boulevard and the current trailhead parking lot), the Preferred Alternative would result in long-term, minor, direct, adverse effects on vegetation communities in the Project Area. Also see **Appendix E**, Conservation Measures.

4.7.2.2 Wildlife

As discussed in **Section 3.7.2.2**, there are several species that use the grasslands, ponderosa pine woodlands, and riparian tree/shrub/forb areas within the proposed EUL area for forage, cover, breeding, and nesting. Clearing and developing 36 acres at the site would displace wildlife currently inhabiting this area or exclude it from future use by transitory or migratory species. General project construction-related impacts to wildlife will be caused primarily by habitat alteration or degradation within the Project Area and temporary disturbances associated with noise and human activity. During construction activities, mammals, birds, and some reptiles would be able to avoid the construction area. Construction impacts would also include the long-term loss of tree and shrub habitats within the proposed Project Area, which would cause an adverse impact to some avian and terrestrial wildlife species through the loss of potential breeding, nesting, and foraging habitat. Some of the wildlife would be able to relocate to adjacent property, while those transitory and migratory species may be able to locate other areas for foraging, breeding, and nesting. A phased build out schedule, occurring over a 5-year timeframe, would be less disruptive to wildlife communities than the entire proposed project acreage being constructed over a short period of time. The USAFA wildlife management measures developed within its *INRMP (*USAFA, 2018) would be utilized to reduce impacts to wildlife species as a result of the project. Given the phased development schedule and adherence to *the USAFA Standards, Section 01351* and USAFA's *INRMP (*2018), potential impacts to wildlife from construction (short-term) and operations (long-term) of the Preferred Alternative would be indirect and adverse but minor.

As part of the Proposed Action, the contractors will commit to following resource-specific management practices detailed in the *INRMP (*USAFA, 2018). Adherence to these practices will minimize effects to natural resources including inventorying and monitoring wildlife populations, controlling invasive species, restoring degraded areas, protecting sensitive areas, and managing for migratory birds (USAFA 2018). Additionally, the implementation of USAFA's Integrated Noxious Weed Management Plan (INWMP), USAFA *Standards, Section 01351: Revegetation and Tree Care Standards*, and the USAFA *SPCC Plan*, would minimize impacts on biological resources so that construction and operational activities associated with

implementation of the Preferred Alternative would result in minor direct and negligible indirect adverse effects.

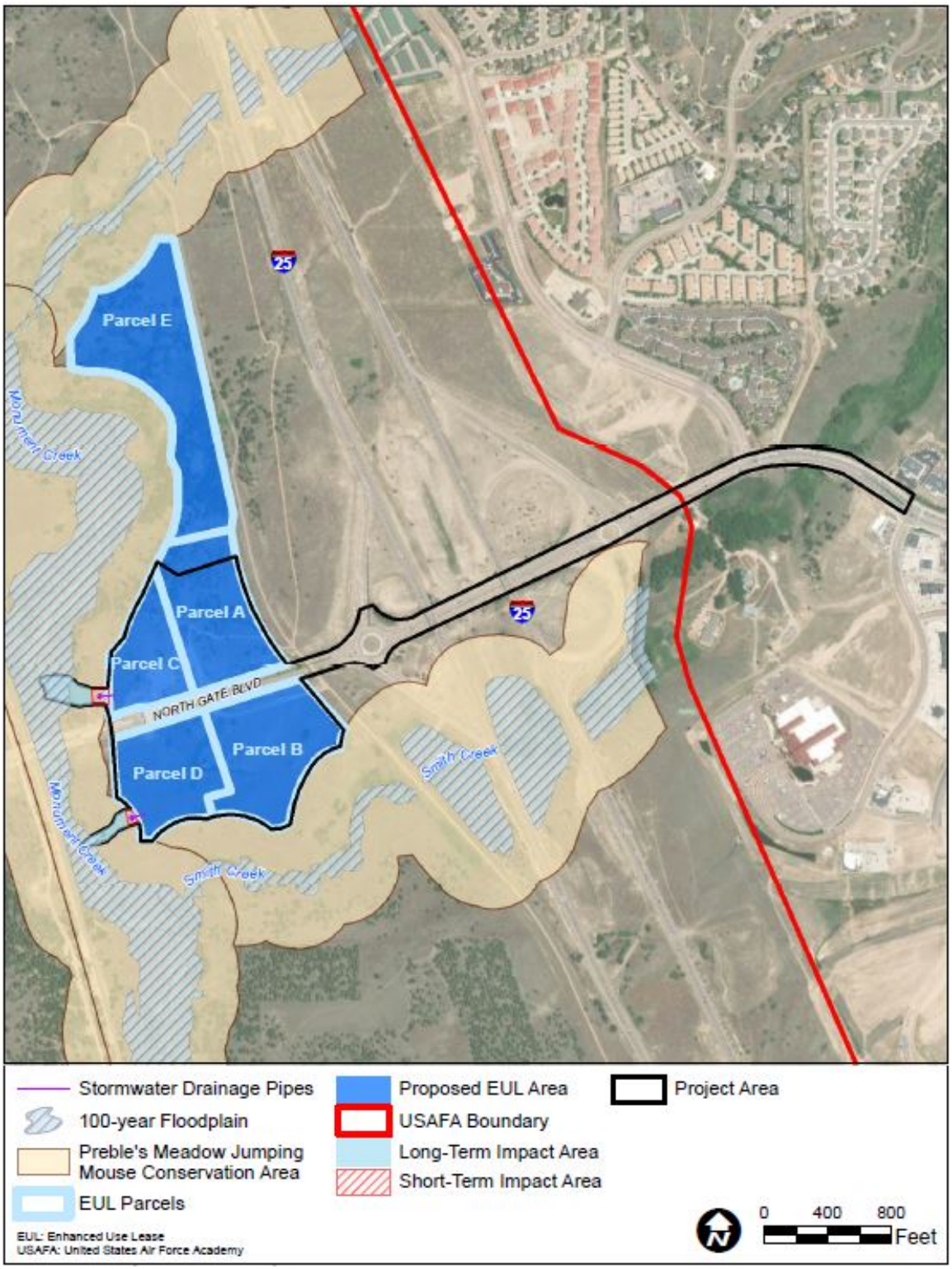
Aquatic Species: Construction and operation of the Proposed Action would not affect aquatic species, since Monument Creek and Smith Creek are located outside of the proposed Project Area and shallow waters with wetlands proposed for disturbance were not observed to support fish, amphibians, or other aquatic species. Surface disturbance activities within the Project Area would not reach the stream, since erosion control and stormwater practices (Section 4.4) would be followed that will prevent sediment input to the creeks. In addition, the USAFA SPCC and Hazardous Materials Emergency Planning and Response plans, as well as 29 CFR § 1910.1200, Hazard Communication, and AFI 32-7086, Hazardous Materials Management would prevent any potential gas or lubricant spills from reaching the stream. Also see **Appendix E**, Conservation Measures.

4.7.2.3 Protected Species and Sensitive Habitats

Based on previous survey results and a 2018 BA of the proposed EUL Area, only one of the federally listed species, the PMJM, has the potential to be impacted by the Proposed Action; the Proposed Action is not anticipated to impact any other federally listed species at USAFA. The 2018 BA identified previously unidentified PMJM habitat within the northern portion of the proposed EUL Area (Parcel E) and along Monument Creek and Smith Creek; however, the majority of the habitat throughout the proposed development area would be upland habitat and would be considered nonhabitat or low-quality habitat for PMJM, as a result of the areas being dominated by native and nonnative grasses including sand dropseed, smooth brome, blue grama, and buffalo grass. The banks along Monument and Smith Creeks as well as wetland and riparian habitat within the northern portion of the proposed EUL Area would be considered high- or moderate-quality habitat; however, development in these areas in not included in the Proposed Action.

A small amount of construction of the Proposed Action would be executed in low-quality PMJM habitat within USAFA's PMJM Conservation Area to the west of the proposed EUL Area for the installation of the development's two proposed stormwater drainage pipes and dispersion basins, as shown in **Figure 4.2**. The entire area of disturbance within USAFA's PMJM Conservation Area would directly and could potentially adversely impact possible PMJM habitat. However, the location of the development's proposed stormwater management structures would be located outside of the Monument and Smith Creek riparian corridors; therefore, the effects on PMJM are anticipated to be minimal during construction of the project. The Proposed Action could destroy PMJM burrows present in the portion of the Project Area associated with installation of the stormwater management infrastructure and could cause mortality of individual PMJM should one be present during earthmoving and construction activities.

Figure 4.2 Proposed Short-Term Direct and Long-Term PMJM Impact Areas



The proposed area of direct disturbance for construction activities in USAFA's PMJM Conservation Area totals 0.40 acres, including the temporary, direct adverse disturbance of 0.40 acres for access, trenching, and installation of stormwater infrastructure of which 0.02 acres would be permanent direct, adverse disturbance to accommodate the site's two proposed dispersion basins (each measuring approximately 500 square feet), as shown in **Table 4.4**.

Table 4.4. Direct Permanent and Temporary Impacts on PMJM Habitat

Habitat Type	Impacts (in acres)						
	Dispersion Basins		Storm Outfall Pipes/Access/Staging		Total Temp.	Total Perm.	Total Impacts
	Temp.	Perm.	Temp.	Perm.			
High	0	0	0	0	0	0	0
Moderate	0	0	0	0	0	0	0
Low	0	0.02	0.38	0	0.38	0.02	0.40
Total	**0**	**0.02**	**0.38**	**0**	**0.38**	**0.02**	**0.40**

Impacts to the PMJM would be similar to those described above for all wildlife species. Construction disturbance associated with the Proposed Action would be temporary and limited to an area directly surrounding the site's proposed stormwater infrastructure, consisting of disturbed uplands with mostly nonnative plants (smooth brome and noxious weeds) and low canopy cover. While PMJM would not be anticipated to frequent these areas of low-quality habitat, fencing would be installed to prevent inadvertent construction impacts to PMJM habitat outside of the proposed direct disturbance area, and native seed would be applied to areas temporarily disturbed by grading activities following installation of the proposed stormwater infrastructure. Given that the majority of the direct impacts to PMJM habitat would be temporary, limited in extent, and entirely within low-quality PMJM habitat, direct and indirect short-term impacts to individuals from the Proposed Action would be expected to be adverse but negligible, and would not be expected to impact the ability of PMJM to travel upstream or downstream along suitable riparian areas. The 2018 BA concluded that the combination of avoidance and minimization of impacts and conservation measures would reduce the potential for the incidental take of PMJM associated with the Proposed Action, and the Proposed Action would not affect PMJM critical habitat.

Over the course of the development's long-term operations, indirect impacts to the PMJM Conservation Area would include long-term surface water flowing over approximately 1.69 acres of moderate and low-quality PMJM habitat from the development's two proposed stormwater outfalls along the western boundary of the proposed EUL Area. Surface flows from the development's proposed north dispersion basin would occur over about 1.11 acres of land between the dispersion basin and Monument Creek. Flows from the development's proposed southern dispersion basin would occur over 0.58 acres of land between the dispersion basin and

Monument Creek. Surface flows from the dispersion basins would result in long-term indirect effects to low quality and moderate quality habitat adjacent to, and within Monument Creek; however, it is anticipated that periodic surface flows from the proposed development would be a benefit to PMJM since the increase in hydrology would allow for mesic vegetation to establish and expand potential PMJM habitat. **Table 4.5** summarizes the amount and type of habitat that would be indirectly impacted by anticipated surface flows from long-term operation of the Preferred Alternative.

Table 4.5. Indirect impacts on PMJM habitat throughout the Project Area (from surface flows)

Habitat Type	Impacts (in acres)		
	Surface flows from north dispersion basin (12 cfs maximum) acres	Surface flows from south dispersion basin (6.2 cfs maximum) acres	Total Impacts
Moderate	0.90	0.30	1.20
Low	0.21	0.28	0.49
Total	**1.11**	**0.58**	**1.69**

Noise associated with construction and operation of the development may also disrupt PMJM behavior or patterns of use of the proposed Project Area. Lighting, especially along Smith Creek, from the development may also disrupt PMJM behavior since this species is nocturnal; however, the proximity of the proposed development and Smith Creek to the I-25 corridor currently subjects the proposed disturbance area to noise and light. Given the proposed development's proximity to the I-25 corridor, long-term indirect impacts to PMJM from light and noise associated with the operation of the Preferred Alternative would be adverse, but minor.

An important element of the long-term operations of the Preferred Alternative would include the formation of a BID that would own, operate, and maintain the TrueNorth Commons development including the proposed stormwater management facilities. Because higher than anticipated surface flows resulting from unforeseen upstream events could result in erosion or channelization of flows in high quality PMJM habitat, the BID will monitor conditions in the proposed development area. Any signs of erosion identified by the BID inspections would be repaired quickly by the BID, as required by the USFWS Biological Opinion included in **Appendix E** and summarized below.

Biological Opinion

USFWS provided a Biological Opinion (BO) on impacts to the federally threatened PMJM as a result of implementation of the Preferred Alternative in a letter dated February 19, 2019, in which USFWS agreed with the 2018 BA determination that the Proposed Action may affect, and is likely to adversely affect, the PMJM. The USFWS anticipates that execution of the Preferred Alternative would result in the incidental take of no more than one individual mouse, as measured by the surrogate of the permanent and temporary loss of 0.4 acres of PMJM habitat, which USFWS determined would not likely result in jeopardy to the species. As a result, USFWS

concluded that the Preferred Alternative would not likely jeopardize the continued existence of the PMJM based on the proposed impact area constituting a small portion (0.00004 percent) of the species' occupied range, proposed impacts being limited to upland habitats where PMJM is unlikely to hibernate during PMJM hibernation season, and connectivity along Monument Creek and Smith Creek remaining unaltered following implementation of the Preferred Alternative. USFWS defines "jeopardize the continued existence of" as to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

Nevertheless, the 2019 BO requires the Preferred Alternative to incorporate implementation of several conservation measures to meet the terms of the USFWS consultation, including:

- Construction of the pipelines and dispersion basins would be planned for March 2020, which is during PMJM hibernation period. This timing reduces stress on the species by avoiding the active season when PMJM are aboveground during the breeding season. Minimizing stress on individuals during the breeding season may reduce the loss of productivity and mortality.
- Equipment access in the construction area would be strictly limited. A proposed equipment staging area has been designated in current uplands, and construction access has been limited to existing areas of low-quality habitat as much as possible.
- Installation of temporary fencing to define construction limits and deter access into areas that are not to be affected.
- Compliance with the City's Drainage Criteria Manual Volume 1, Chapter 6, Section 7.1, which requires using the Urban Drainage and Flood Control District's four-step process for receiving water protection that focuses on reducing runoff volumes, treating the water quality capture volume, stabilizing drainageways, and implementing long-term source controls. This is described on page 17 of the biological assessment.
- Revegetating all temporarily disturbed areas with native seed mixes to reduce erosion and replace habitat value. All areas disturbed during construction would be revegetated with a native seed mix per USAFA's Erosion Control Revegetation, and Tree Care Standards. Additionally, native shrubs and tree species would be planted downstream of each dispersion basin to enhance landscaping around the basins following completion of project construction.
- Installing sediment-and erosion-control devices, such as silt fence, to minimize surface runoff in disturbed areas.
- Placing vehicle tracking control devices at site entrance(s).
- Locating equipment refueling and staging areas on inactive roads or upland areas away from wetlands and riparian areas.
- Placing biodegradable erosion-control blankets on newly seeded steep slopes to control erosion and promote vegetation establishment.

- The BID would monitor conditions in the Project Area. Any signs of erosion identified by the BID inspections would be repaired quickly by the BID.
- The following criteria would be used to assess the success of mitigation efforts. These minimum standards must be met at the end of two growing seasons for woody revegetation to be considered successful and, hence, to be released from monitoring requirements:

    - For upland areas, the grasses and shrubs would achieve at least 80 percent cover of adjacent undisturbed reference areas. At least 50 percent of the canopy cover would consist of native perennial grasses.
    - Tree and shrub plantings would have at least 80 percent survival.
    - State-listed noxious weeds would be controlled to prevent competition with the planted vegetation. Noxious weeds would not exceed 10 percent canopy cover in the revegetated areas. This minor degree of noxious weed infestation would likely not be detrimental to PMJM based on documentation that the species is not precluded by the presence of weedy vegetation.
    - Upland sites would be adequately stabilized to prevent gullying, severe erosion, and sedimentation. Areas of soil instability would be promptly treated (e.g., rip rap, silt fence, erosion matting, and hay bales) to prevent further site degradation beyond that found preconstruction.

Additionally, the 2019 USFWS Biological Opinion summarizes non-discretionary reasonable and prudent measures that must be undertaken by USAFA to minimize incidental take of PMJM, to ensure the protective coverage of Section 7(o)(2), and to remain in compliance with the terms and conditions of the Preferred Alternative's Incidental Take Statement, as outlined in the 2019 USFWS Biological Opinion.

- USAFA would monitor the extent of habitat impacted to ensure that it does not exceed the authorized area or the authorized take limits.
- USAFA would monitor all aspects of restoration to assure its completion and success.
- USAFA would ensure that the BMPs and conservation measures designed to minimize taken are implemented and successful.

Finally, the 2019 USFWS Biological Opinion outlines non-discretionary terms and conditions to which USAFA must comply to be exempt from the prohibitions of Section 9 of ESA, which implement the reasonable and prudent measures described above and outline required reporting/monitoring.

- USAFA shall ensure that proposed conservation measures (outlined above and in the biological assessment), are formally adopted and implemented.

- USAFA or their agent will designate a qualified environmental manager or management team to be onsite to inform workers of permit conditions, monitor construction, and assure that habitat avoidance and conservation measures are implemented.

- USAFA will ensure that implementation of PMJM habitat restoration will be supervised by a qualified ecologist experienced in habitat restoration. This includes implementation of an approved integrated weed management plan.

- USAFA will include as a binding condition of project approval that annual monitoring of onsite revegetation efforts and noxious weeds be conducted. Monitoring will extend for at least three growing seasons (or until such time as USAFA and USFWS determine that proposed revegetation has been successfully completed in accordance with the success criteria described previously in the Preferred Alternative's conservation measures).

- In the unlikely event that a PMJM is encountered (dead, injured, or hibernating) during construction activities, the Colorado Field office of the USFWS shall be contacted immediately at (303) 236-4773.

By adhering to mitigation presented in this section and detailed in the 2019 USFWS Biological Opinion presented in **Appendix E**, the long-term indirect impacts on PMJM expected under the Preferred Alternative would be adverse, but minor.

As mentioned in **Section 3.7.2.3**, active nest and/or roost sites for bald eagles and golden eagles are not present in the proposed EUL Area; therefore, the Preferred Alternative is not anticipated to have any short-term or long-term direct impacts on bald and/or golden eagles.

Impacts to migratory birds could include potential disturbance to breeding individuals during the nesting season, particularly if nests occur within or adjacent to the proposed Project Area. Impacts would potentially include direct loss of eggs or nestlings, indirect displacement from increased noise and human presence in the vicinity of the project, and an incremental reduction in foraging habitat. However, possible impacts to breeding birds would depend on a number of variables, including the species, nest location, topographical shielding, breeding phenology, and type of construction activity. Some species, such as the raptors, may have extended breeding periods and/or be more sensitive to noise disturbance during nesting due to the existing disturbance within the ROI from I-25 and North Gate Boulevard. Due to its proximity to major thoroughfares, the proposed Project Area under the Preferred Alternative is not as attractive to migratory birds as other nearby riparian areas. The proposed Project Area would be unavailable for these activities for the duration of construction and earthmoving activities. If construction activities occur during the general avian breeding season (February–August) within areas known to have historically supported breeding protected migratory bird species, pre-construction nesting bird surveys would be conducted (within 7 days of proposed activity) to identify active

nests. If active nests are identified during preconstruction surveys, an avoidance buffer (distance per regulatory guidance and/or discretion of the monitoring biologist) would be established and the nest would be monitored until the juvenile birds have fledged. Colorado Division of Wildlife's (CDOW) recommended buffer zones and seasonal restrictions for active nests of Colorado raptors are provided in **Table 4.6**. The USFWS typically considers implementation of CDOW buffers and seasonal restrictions as fulfilling compliance requirements of the MBTA for raptors.

Table 4.6. Protection Zones and "No Construction" Timeframes for Active Raptor Nests

Species	No Human Encroachment/Activity Timeframe	Protection Radius Around Active Nest
Bald Eagle	October 15 – July 31	0.50 mile
Golden Eagle	December 15 – July 15	0.50 mile
Ferruginous Hawk	February 15 – July 15	0.33 mile
Red-Tailed Hawk	February 15 – July 15	0.33 mile
Swainson's Hawk	April 1 – July 15	0.25 mile
Peregrine Falcon	March 15 – July 31	0.50 mile
Prairie Falcon	March 15 – July 15	0.50 mile
Burrowing Owl	March 15 – October 31	0.03 mile (150 feet)

Source: Colorado Division of Wildlife. *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors*. 2008.

Additional species of special concern for Colorado identified at USAFA during a 2012 Biological Inventory (CNHP, 2012) include Gunnison's prairie dog (*Cynomys gunnisoni*), Hops Azure butterfly (*Celastrina humulus*), Northern Leopard Frog (*Lithobates pipiens*), and Ovenbird (*Seiurus aurocapillus*). These species have the potential to occur in the proposed EUL Area; however, none of these species have been observed in the proposed Project Area. Nevertheless, a preconstruction survey would determine if there are any State species of special concern within the area of proposed disturbance and, if present, the contractor would follow USFWS recommendations to reduce or avoid impacts to any species of special concern. Adherence to these practices would minimize effects to special status species; therefore, the Preferred Alternative would result in adverse, but negligible, short-term and long-term indirect effects on Colorado's species of special concern. Previous surveys at USAFA have not indicated that special species of concern (with exception of the PMJM as previously discussed) are present within the proposed development area. Given a preconstruction survey, adherence with USFWS recommendations, and the unlikelihood of special species of concern being within the proposed development area, no direct impact on species of special concern would be anticipated from the Preferred Alternative.

Surveys as recent as 2010-12 have identified 11 rare plant species within USAFA categorized as imperiled or critically imperiled in Colorado, of which only Strap-Style Gayfeather/Rocky

Mountain Blazing Star (Liatris ligulistylis) has been documented in the proposed EUL Area; however, the rare plant is not present in the proposed development area. In addition, herbicide application would not be conducted in areas where Rocky Mountain Blazing Star resides; therefore, the Proposed Action is not anticipated to have any short-term or long-term direct or indirect impacts to the area's rare plant.

Development of the proposed Project Area would decrease the amount of unimproved habitat on USAFA that would be available for some Colorado conservation species. The principal reason for the decline of some grassland bird species is habitat loss. The amount of land that would be developed is small in comparison to the amount of grassland habitat in the state or even on the installation. The Preferred Alternative would result in a permanent loss of approximately 31 acres of grassland, 3 acres of upland forest, 0.5 acres of riparian tree/shrub/forb and 1.5 acres of previously developed/disturbed lands as well as temporary disturbance of approximately 20 acres of developed/disturbed lands including 0.42 acres of isolated wetlands during installation of utilities along North Gate Boulevard. As mentioned in **Section 4.7.2.1**, the Project Area as a whole contains less than 1.1% percent of the grassland for the area east of Monument Creek at USAFA. Grassland habitat would remain undisturbed until grading is ready to start in that specific area. Once overlot grading and infrastructure construction is completed for the proposed development, individual lots and adjacent areas would be reseeded with native grasses to the extent practicable.

By conducting a preconstruction survey for migratory birds and potential species of special concern in the proposed development area and adhering to mitigation presented in this section and detailed in the 2019 USFWS Biological Opinion presented in **Appendix E**, the long-term indirect impacts on protected species expected under the Preferred Alternative would be adverse, but minor.

Sensitive Habitats

The nearest CHNP-recommended Protected Conservation Area is the Monument Creek riparian corridor, which approximates USAFA's PMJM Conservation Area. These areas are outside of the Proposed EUL Area boundary but would be minimally impacted by the Proposed Action through the installation of stormwater outfall structures including drainage pipes and dispersion basins. The impact to the PMJM Conservation has been previously discussed, but disturbance would be confined to the area immediately surrounding the stormwater infrastructure approximating 0.40 acres in total. Fencing would be installed to exclude construction activities from portions of the Conservation Area outside of the proposed Project Area. The low-tailwater basins would be the only long-term direct impact area, totaling 1,000 square feet (0.02 acres). All disturbed areas (except the two dispersion basins totaling 0.02 acres) would be revegetated using the seeding mix shown in USAFA's *Standards, Section 01351* or otherwise-approved by USFWS' USAFA Natural Resources Manager. Adherence to these design plans and revegetation standards combined with excluding contractors from ground disturbing activity outside of the proposed

Project Area would result in short-term direct and long-term indirect adverse effects to the Monument Creek Protected Conservation Area being negligible.

4.7.3 Environmental Protection Measures

Construction activities will be required to follow measures in the *INRMP* (USAFA, 2018), *Integrated Noxious Weed Management Plan* (CNHP, 2015), and USAFA SPCC Plan, avoiding or minimizing the effects of noxious weeds and hazardous spills on biological resources. The use of the North Gate Boulevard as the site's utility corridor would reduce impacts to vegetation communities, while standard construction BMPs (e.g., hay bales/silt fences along the edges of the disturbed areas, drip pans under construction vehicles, hazardous waste/spill response plan, daily collection of human trash, port-a potties) would be used to protect adjacent habitats from degradation and contamination. Additionally, the undeveloped portions of grasslands within the proposed EUL Area would be maintained as recommended in the INRMP to control noxious weeds and promote native grassland species. A preconstruction survey would determine if there are any State species of special concern within the area of proposed disturbance and, if present, the contractor would follow USFWS recommendations to reduce or avoid impacts to any species of special concern. Finally, contractors would comply with the stipulations outlined in USFWS' 2019 BO for the Proposed Action, as summarized in **Section 4.7.2.3**.

4.8 Cultural Resources

The potential effects of the Proposed Action and no action alternative on cultural resources within the ROI are presented in this section.

4.8.1 No Action Alternative

For the no action alternative, current conditions would not change, and no impact on cultural resources would occur in the proposed EUL Area.

4.8.2 Preferred Alternative (Proposed Action)

In compliance with the NHPA, the USAF/USAFA initiated Section 106 consultation for the lease of approximately 52 acres to Blue & Silver with the Colorado (CO) State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), and other stakeholders. This consultation resulted in the development and execution of a project specific Programmatic Agreement (PA).

Preparer's Note: Information on outcome of the project specific PA will be updated once consultation and filing with the ACHP is complete.

Appendix A includes a table listing the agencies and tribes engaged under the Section 106 consultation as well as sample letters used for the notification process. **Appendix F** includes the project Programmatic Agreement.

As previously discussed, the conceptual nature of the vertical structures associated with the proposed development complex prevents analysis of the proposed TrueNorth Commons' buildings in this EA. As a result, the cultural resources analysis within this EA is limited to one aspect of the Proposed Action, specifically, impacts resulting from the lease agreement. When considering only the lease associated with the Preferred Alternative (Proposed Action), no significant adverse effects would be anticipated for cultural resources.

While the impact to cultural resources from the physical development of the TrueNorth Commons is not addressed within this EA, each building associated with the Preferred Alternative (Proposed Action) would undergo review with SHPO and the Design Review Board prior to construction; therefore, any potential adverse effects associated with construction of the TrueNorth Commons facilities would be managed through the Design Review Board approval process and mitigated by the appropriate parties following review of detailed design plans, as stipulated in the EUL agreement and the project Programmatic Agreement.

4.8.3 Environmental Protection Measures

No adverse impacts to cultural resources would be anticipated as a result of the Air Force leasing 52 acres of the land to Blue & Silver; therefore, for the scope of this EA's evaluation of cultural resources, no environmental protection measures would be necessary.

As allowed by the National Historic Preservation Act (NHPA), USAFA executed a project specific Programmatic Agreement (PA) (dated) to accomplish two things:

- To create a document, to be included within the lease itself, that contains legally enforceable restrictions and conditions to ensure continued compliance with the NHPA within the lease area.

- To resolve potential adverse effects that could result from multiple undertakings whose "effects on historic properties cannot be fully determined prior to approval of an undertaking" (36 CFR § 800.14(b)(1)(ii)) towards completion of this EA. The project specific PA stipulates Section 106 consultation, including assessment of adverse effects to historic properties, will occur in the future for each phase of development within the area of EUL when designs are available.

Through the completion of these two actions, the undertaking of the lease between USAFA and Blue and Silver has resulted in no adverse effect to historic properties. Table 4.7 and Appendix A lists Native American tribes and other stakeholders notified pursuant to 36 CFR § 800.5(a)(2)(vii) and who were invited to participate in the development of the programmatic agreement.

Table 4.7. Entities Participating in Development of Project Specific PA

1)	Apache Tribe of Oklahoma
2)	Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
3)	Cheyenne and Arapaho Tribes of Oklahoma
4)	Cheyenne River Sioux Tribe
5)	City of Colorado Springs
6)	City of Monument
7)	Colorado Department of Transportation
8)	Comanche Nation of Oklahoma
9)	Crow Creek Sioux Tribe
10)	Crow Nation
11)	Eastern Shoshone Tribe of Wind River Reservation
12)	El Paso County
13)	Flandreau Santee Sioux Tribe of South Dakota
14)	Fort Belknap Indian Community
15)	Fort Sill Apache Tribe
16)	Jicarilla Apache Tribe
17)	Kiowa Tribe of Oklahoma
18)	Lower Brule Sioux Tribe of the Lower Brule Reservation
19)	Mescalero Apache Tribe
20)	National Park Service
21)	Navajo Nation
22)	Northern Arapaho Tribe
23)	Northern Cheyenne Tribe
24)	Oglala Sioux Tribe
25)	Pawnee Nation of Oklahoma
26)	Pueblo de Cochiti
27)	Pueblo of Picuris
28)	Pueblo of Santa Ana
29)	Pueblo of Santa Clara
30)	Pueblo of Taos
31)	Pueblo of Zuni
32)	Rosebud Sioux Tribe
33)	San Ildefonso Pueblo
34)	Santee Sioux Nation
35)	Southern Ute Indian Tribe
36)	Spirit Lake Nation
37)	Standing Rock Sioux Tribe
38)	The Western Museum of Mining and Industry
39)	Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
40)	Upper Sioux Indian Community
41)	Ute Indian Tribe of the Uintah & Ouray Reservation
42)	Ute Mountain Ute Tribe
43)	Wichita and Affiliated Tribes of Oklahoma
44)	Yankton Sioux Tribe

4.9 Earth Resources

Protection of unique geological features, minimization of soil/sediment erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential effects of a proposed action on geological resources. Generally, adverse effects can be avoided

or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development.

Effects on geological resources were assessed by evaluating the following:

- Potential to destroy unique geological features
- Potential for soil erosion
- Proximity to or impact on geologic hazards (such as locating a Proposed Action in a seismic zone)
- Potential to affect soil or geological structures that control groundwater quality or groundwater availability
- Alteration of soil structure or function.

4.9.1 No Action Alternative

Under the no action alternative, the proposed development would not occur; therefore, there would be no change to the geology, soil, or topography in the proposed development area.

4.9.2 Preferred Alternative (Proposed Action)

Topography

Construction activities under the Preferred Alternative would include grading and excavation of soils to establish structural foundations, buried utilities, and paved areas. Additionally, the proposed development area currently includes relatively steep rock outcrops in the northern portion of proposed Parcels A and C, a parking lot for trail users in the southern part of Parcels A and C, and undeveloped land of lower elevation within proposed Parcels B and D; therefore, the Proposed Action entails overlot grading to achieve a relatively flat development site. As a result of the overlot grading, the Proposed Action would have adverse, direct, short-term and long-term impacts on topography. However, given the site's proximity to the I-25 corridor, a former railroad grade (now the New Santa Fe Regional Trail), and the presence of North Gate Boulevard through the center of the proposed development area, the proposed grading would tie the site into the surrounding developed elevations resulting in short-term direct impacts being minimized. Furthermore, reduction in overland stormwater velocity through the proposed stormwater infrastructure would contribute to mesic vegetation growth along uplands east of Monument Creek and reduce erosion rates, contributing to the preservation of the surrounding landscape. Therefore, the Preferred Alternative would contribute to a long-term, minor, indirect, beneficial effect on local topography.

Geology

The Proposed Action would not affect the stability of the area's bedrock, increase subsidence, elevate risk for soil movement or landslides, or undermine infrastructure by impacting geologic stability; therefore, the Preferred Alternative would not result in any short-term or long-term impact on geology within the Project Area.

Soils

The potential effects of the Proposed Action on soils will result from ground disturbance associated with overlot grading, surface staging of materials, installation of the utility lines and building footers, and access routes to the construction area. The majority of impacts to soils will occur from disturbance associated with overlot grading to establish a relatively flat development site, which will alter the soil profiles. Implementation of the Proposed Action would disturb approximately 36 acres of soils within the Project Area. The majority of the disturbance would be considered permanent; however, 0.38 acres of disturbance to the west of the EUL Area for trenching and installation of the proposed stormwater drainage pipes would be temporary, resulting in only 0.02 acres of permanent disturbance outside of the proposed development area related to the site's two proposed dispersion basins. Soil horizons being mixed as a result of the Proposed Action would be inevitable based on the scope of work; however, the proposed Project Area includes rock outcrops in the northern portion of the development, previously disturbed lands in the center portion, open grasslands in the southern portion, and is surrounded by sites previously altered by construction including the I-25 corridor, a historic railroad grade (New Santa Fe Regional Trail), North Gate Boulevard, and the North Security Gate. Additionally, the general nature of the soils in the area are sandy loam and loamy sand to a depth of 60 inches. Given the characteristics of these soils and the previous construction activities in the immediate vicinity, mixing of horizons in the proposed Project Area would not significantly degrade the performance of the soils. Furthermore, the Project Area is not used for farmland, and soils proposed for impact are not designated prime farmland. The Proposed Action would also result in short-term erosion of soils and increased dust production from vegetation clearing, grading, and tracking associated with vehicle traffic. Construction activities will be conducted in accordance with an EPA NPDES General Permit and associated SWPPP. The NPDES General Permit, together with the required SWPPP, will outline construction site management practices designed to protect the quality of the surface water, groundwater, and natural environment through which they flow. The SWPPP will identify specific areas of existing and potential soil erosion, location of structural measures for sediment control, and management practices and controls. Use of these management practices and controls will reduce the potential for erosion of disturbed soils to a level considered to be a minor effect.

Potential impacts will be minimized through proper management practices defined within the approved SWPPP. As a result of these actions construction impact would be short-term and minor. Standard construction practices that would be implemented to minimize soil erosion and ensure adverse impacts include the following actions:

- Providing BMPs including stockpiling topsoil
- Covering exposed soil with erosion control blankets or temporary vegetative covers
- Installing erosion control fencing to minimize off-site soil transport from precipitation
- Watering exposed soils to prevent wind erosion
- Controlling compaction from heavy machinery
- Seeding or mulching disturbed area upon completion of construction

As a result of these actions construction impact would be short-term and minor. Permanent features to minimize off-site soil transport during precipitation including the previously described stormwater management infrastructure would be included in the development's design; therefore, no significant long-term impact would occur from implementation of the Preferred Alternative.

4.9.3 Environmental Protection Measures

Fugitive dust from construction activities would be minimized by BMPs such as watering and implementation of erosion and storm water management practices to contain soil and runoff onsite, thereby reducing the total amount of soil exposed. Standard erosion-control means (e.g., silt fencing, sediment traps, application of water sprays, and revegetation at disturbed areas) would also reduce environmental consequences related to those activities. Berming along nearby water bodies would decrease the amount of potential sedimentation in adjacent water bodies.

4.10 Utilities

Impacts to utilities would be considered significant if services provided to the development exceed the capacity of the existing utility.

4.10.1 No Action Alternative

Under the no action alternative, the proposed development would not occur; therefore, there would be no changes to current utilities requirements or usage at USAFA or surrounding communities.

4.10.2 Preferred Alternative (Proposed Action)

As a result of the annexation of the EUL property into the City, the entire property would become part of the Colorado Springs Utilities service area. The Preferred Alternative would receive electricity, natural gas, water, and sanitary sewer services from CSU, the local service provider. As part of that obligation, CSU would provide design requirements to Blue & Silver based on the size and type of uses proposed in the development area. These requirements would be based on both the requirements of the development and the infrastructure CSU has in

place at the point of connection for each utility. Because of the obligation to serve, CSU would make any required adjustments to ensure that no significant adverse impacts to their utility distribution systems would occur.

4.10.2.1 Potable Water

Water demand would increase slightly during the construction phase of the Proposed Action for equipment cleaning and site watering; however, potential increases in water demand associated with construction activities would be temporary and are not anticipated to exceed CSU's existing capacity. In fact, construction water demand would be less than anticipated operational demand from the Proposed Action. Short-term, negligible, direct, adverse impacts on water supply would be expected from construction activities associated with the Preferred Alternative.

Upon completion of utility infrastructure, water for the development would be obtained from new 3000-ft long CSU dual 8-in mains that would run below North Gate Boulevard to connect to CSU's existing water main in Struthers Road east of I-25. The system within the proposed development would consist of an additional 5700 linear ft of water main to connect future development pads to CSU's proposed North Gate Boulevard water main. As of 2016, CSU annually supplied 23.7 billion gallons of potable water (or 72,625-acre feet) and had a sustained treatment capacity of 214 million gallons per day. The Preferred Alternative's operational demand would be within the capacity of CSU's existing system; therefore, operation of the Preferred Alternative would have a long-term, negligible, direct, adverse impact on CSU's water system.

4.10.2.2 Non-Potable water

Design of the irrigation system for the Proposed Action does not include use of the recycled water irrigation system in use on the USAFA. Irrigation water will be supplied through the potable water connection with CSU therefore no impact to the USAFA non-potable irrigation system would occur.

Wastewater service for construction activities would be provided through temporary portable facilities provided by construction contractors and there would be no direct connection to CSU infrastructure during initial construction phases. Short-term, negligible, direct, adverse impacts on wastewater conveyance and treatment capacity would be expected from construction activities associated with the Preferred Alternative following the connection to CSU's existing wastewater system. These potential increases in wastewater associated with construction activities would be temporary and are not anticipated to exceed CSU's existing capacity.

Upon completion of utility infrastructure, wastewater collection and treatment for the proposed development would be provided by CSU via a new 3,100-ft long sanitary force main line that runs below North Gate Boulevard to connect to CSU's existing force main near the intersection

of North Gate Boulevard and Struthers Road. The system within the proposed development would consist of a 2300-linear foot gravity sanitary main running north to south across the Site and draining to a lift station proposed for construction at the southern end of the TrueNorth Commons' footprint. From the lift station, approximately 1400 linear feet of sanitary force main line would be installed within the development footprint to pump the Site's sanitary waste northeast to the new 3,100-ft long sanitary force main below North Gate Boulevard. As of 2016, CSU treated an average of 37.58 billion gallons of wastewater per day with a combined permitted capacity of 96 million gallons per day. The Preferred Alternative's operational demand would be within the capacity of CSU's existing system; therefore, operation of the Preferred Alternative would have a long-term, minor, direct, adverse impact on CSU's wastewater system.

4.10.2.3 Energy Utilities

Electric

Electricity demand would increase slightly during the decommissioning and demolition phases of the Proposed Action to support construction activities; however, potential increases in electricity demand associated with construction activities would be temporary and are not anticipated to exceed existing capacity. No short-term, adverse direct impacts would be expected from construction activities.

Upon completion of construction, the proposed development would connect to CSU's existing electrical grid near Struthers Road and North Gate Boulevard via a new 2,500-ft long buried line that would run along the south side of North Gate Boulevard to CSU's existing dead-end service east of I-25. The system within the proposed development would consist of an additional 1700 linear ft of electric service to connect future development pads to CSU's proposed North Gate Boulevard electric main. Each building/facility would have an electrical meter and the tenant would be responsible for power usage. In 2016, annual electric use within CSU's service territory totaled 4.58 million megawatt hours. The Preferred Alternative's operational demand would be within the capacity of CSU's existing system; therefore, operation of the Preferred Alternative would have a negligible long-term direct, adverse impact on CSU's electrical system.
No long-term, adverse indirect impacts would be expected.

Gas

Construction activities associated with implementation of the Preferred Alternative would not require use of CSU's natural gas system; therefore, no short-term impacts would be expected.

Following utility installation, natural gas for the Preferred Alternative would be provided by CSU via a new 2,800-ft long buried line that runs along the south side of North Gate Boulevard to connect to CSU's existing dead end main near the intersection of North Gate Boulevard and Struthers Road. The system within the proposed development would consist of an additional

1700 linear ft of gas main to connect future development pads to CSU's proposed North Gate Boulevard gas main. As of 2016, CSU annually supplied 22,353,623 million cubic feet of natural gas. The Preferred Alternative's operational demand would be within the capacity of CSU's existing system; therefore, operation of the Preferred Alternative would have a long-term, minor, direct, adverse impact on CSU's natural gas system.

4.10.2.4 Communications

Communications during the construction activities associated with the Preferred Alternative would occur primarily through portable, handheld communication devices or electronic correspondence; therefore, short-term effects on communications would not be anticipated.

During long-term operations, communications for the Preferred Alternative would be provided by Comcast and/or CenturyLink via a new 2,800-ft long buried line that runs along the south side of North Gate Boulevard. The Preferred Alternative's operational demand would be within the capacity of Comcast's and/or CenturyLink's existing systems; therefore, operation of the Preferred Alternative would have a long-term, minor, direct, adverse impact on communication systems.

4.10.3 Environmental Protection Measures

As part of the Proposed Action, the contractor would coordinate with the local utility company prior to commencement of any construction activities to determine the estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably can be expected to be encountered during excavation and trenching activities associated with the Proposed Action. Any permits required for excavation and trenching would be obtained prior to the commencement of construction activities.

4.11 Socioeconomic Resources

Significance for socioeconomic resources varies depending on the setting of the Proposed Action; however, 40 CFR § 1508.8 states that indirect effects may include those that are growth inducing and other effects related to induced changes in the pattern of population density or growth rate. Factors considered in determining whether the alternative would have significant adverse impacts include the extent or degree to which its implementation would result in the following: 1) change the growth rate or concentrations of population; 2) substantially reduce employment, personal income, or tax revenues; 3) conflict with housing projections and policies set forth in the installation or regional government plans, 4) displace existing housing; or, 5) disrupt or divide the physical arrangement of an established community.

4.11.1 No Action Alternative

Under the no action alternative, the development of the mixed-use commercial park would not occur. Consequently, there would be no construction of the business development at USAFA that could create additional jobs within the ROI. Implementing the No Action Alternative would not change the population growth rate, employment opportunities, tax base, or housing availability within the ROI. Similarly, there would be no effects on the social or economic characteristics in the ROI.

4.11.2 Preferred Alternative (Proposed Action)

Implementing the Preferred Alternative would result in short-term negligible and long-term minor beneficial impacts to several socioeconomic resources within the ROI. The development of the commercial park would not affect the number of personnel assigned to or employed by USAFA, nor would the potential long-term jobs be expected to result in immigration of additional residents to El Paso County or the ROI; therefore, the population within the ROI would not be expected to increase. The Preferred Alternative would be expected to create an estimated 1,000 jobs by completion of the development. The build-out is scheduled to occur over a 5-year timeframe, increasing the availability of short-term construction jobs. The increased employment opportunities would likely decrease the unemployment rates for El Paso County since it would be expected that many of the construction jobs would be sourced from local businesses in that area.

Since the purpose of the mixed-use commercial park development is to provide lodging, office space, retail, entertainment, and a new USAFA Visitor Center, it is expected that, outside the construction-based jobs, the majority of the directly related jobs would be in the professional, hospitality, management, food, and retail service sectors. Creation of additional employment opportunities as described above would be expected to decrease the unemployment rate (4.5 percent for El Paso County in December 2018) as a majority of the directly related jobs would likely be filled from current residents of El Paso County. The unemployment rate for Colorado is ranked as the 20th lowest in the United States; in December 2018 the unemployment rate for the state was 3.5 percent. The unemployment rate for El Paso County was 4.2 percent, for Colorado Springs is was 4.4 percent and the average unemployment rate in the ZCTA tracts that make up the ROI was 3.2 percent. An influx of the maximum projected jobs (1,000) would not likely exceed the estimated number of unemployed in the ROI (2,397). The addition of 1,000 new jobs could therefore reduce unemployment in the ROI from 3.2 percent to 1.9 percent. Because development is scheduled to occur over a 5-year time frame, these increases would be spread out over that time. The most immediate increase would likely be realized with jobs in the construction sector. The addition of hospitality, management, food and retail jobs in the ROI would not be expected to change the employment characteristics of the ROI and County.

Median household income data presented in **Section 3.11.2.2** are unlikely to be impacted because the employment opportunities associated with the Preferred Alternative would

primarily be in hospitality, food, retail, construction, and management which are currently the leading employment segments in the ROI and in El Paso County (**Table 3.5**). The jobs created by the development of the business park would be spread out over 5 to 6 years, with the first jobs not being filled until after completion of the initial two facilities, which is expected to be completed within 2 years.

The initial fiscal analysis estimates that the tax revenue from the Proposed Action would increase over a 5-year development period, provided all the facilities are constructed, by an estimated $3 million. Therefore, implementing the Preferred Alternative would provide beneficial impacts to employment, income, and tax revenues within the ROI, El Paso County, and the City of Colorado Springs.

The availability of housing in the ROI and El Paso County as described by declining vacancy rates (**Section 3.11.2.3**) is currently in short supply; however, implementation of the Preferred Alternative would not create a demand for additional housing because the potential jobs would be filled by people already living in the ROI or El Paso County. The Preferred Alternative would have no impact on area housing.

The school system in the ROI would not be impacted because the Proposed Action will not create an increase in population within the ROI or El Paso County. Police and fire protection would be impacted by the Proposed Action because the Proposed Action would potentially require both law enforcement services and fire protection. As described in **Section 3.11.2.4**, Colorado Springs has substantial capacity in both law enforcement and nearby fire protection resources. The area of the preferred alternative is already part of the service area for both Colorado Springs Police and the Colorado Springs Fore Department therefore the additional requirements represented by the preferred alternative would be minor and therefore the impact to public service resources would be long-term, adverse and minor.

4.11.3 Environmental Protection Measures

No environmental protection measures have been identified for socioeconomic resources.

4.12 Transportation and Traffic

Impacts to transportation would be significant if traffic counts, roadway design and geometry, or signalization reduces the LOS or does not meet safety criteria as a result of implementation of either alternative. As described in **Section 3.12.2**, the standards for the City state that LOS rating of E or F are unacceptable and would represent significant impact for the purpose to this EA. In addition to the TCM, the SDDCTEA Pamphlet 55-17 concludes that only LOS E and F are unacceptable. The TIS results associated with the Preferred Alternative are described below and the TIS included as **Appendix C**.

4.12.1 No Action Alternative

The No Action Alternative would not include short-term construction activities or long-term operation of the development. Therefore, no direct or indirect impacts to Traffic or Transportation in the ROI would be expected.

4.12.2 Preferred Alternative (Proposed Action)

Additional traffic from development of the EUL Lease Area has the potential to impact North Gate Boulevard and the North Gate Boulevard/I-25 interchange as part of the Proposed Action. Indirect impacts would also be seen within the USAFA secure boundary and at the proposed Powers Boulevard/I-25 interchange.

To assess the impacts of additional traffic (both short-term and long-term), the TIS estimated the LOS at the North Gate Boulevard/I-25 intersections, the North Gate Boulevard/Struthers Road intersection, and at the proposed intersection of the Preferred Alternative street network and North Gate Boulevard.

4.12.2.1 Traffic Projections

New vehicle trips created by the proposed land use are estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, Tenth Edition*. This manual consists of studies completed all over the United States and is used to calculate the number of vehicle trips that a specific land use will create based on information such as the number of hotel rooms or the square feet of an office building. The ITE is the industry standard for projecting traffic created by proposed land uses. The trips from each land use are added together to determine the total traffic that will be created for each weekday, during the AM peak hour and during the PM peak hour. The results of the traffic estimates for the Preferred Alternative are shown in **Table 4.8**.

Table 4.8. Trip Generation

ITE Code	Land Use	Size	Units	Weekday			AM Peak Hour			PM Peak Hour		
				Total	Entering	Exiting	Total	Entering	Exiting	Total	Entering	Exiting
580	Visitors' Center	37,000	Sq. Ft.	150	90	60	10	9	1	7	1	6
311	4-Star Luxury Hotel	250	Rooms	1,115	558	557	85	45	40	90	43	47
312	3-Star Hotel	150	Rooms	603	302	301	58	24	34	48	26	22
820	Retail	25,000	Sq. Ft.	2,342	1,171	1,171	164	102	62	195	94	101
434	i-Fly	7,500	Sq. Ft.	140	70	70	10	3	7	12	7	5
853	Convenience Market w/Gas Pumps	3,000	Sq. Ft.	1,873	937	936	122	61	61	148	74	74
710	Office Building	200,000	Sq. Ft.	1,873	937	936	214	184	30	220	35	185
	Sub-total			8,096	4,065	4,031	663	428	235	720	280	440
	Internal Trip Capture			-	-	-	114	57	57	86	43	43
	Pass-by Trip Reduction			-	-	-	64	30	34	137	68	69
	Total			***8,096***	***4,065***	***4,031***	***485***	***341***	***144***	***497***	***169***	***328***
Numbers represent total vehicles												

The total trips calculated in **Table 4.8.** are reduced for internal trip capture and pass-by trips. Internal trips are trips between the different land uses within the development. Office building workers would likely travel to and from the retail area for shopping and eating. While these trips will occur within the development, they will not be additional trips onto the roadway network and are therefore subtracted from the total trips that are projected during the AM and PM peak hours. The other phenomenon is pass-by trips. These are trips that would be on the roadway network anyway and decide to use one of the new land uses. Employees entering USAFA that are on the roadway network anyway may decide to use the retail to get breakfast or coffee on their way into USAFA. This is not a new trip, but an existing trip that is detouring into the new land use. These trips are also subtracted from the total trips during the AM and PM peak hours. The pass-by and internal capture trips are estimated using resources from ITE and other national publications. The resulting total vehicle trips generated by the Preferred Alternative development are summarized in **Table 4.8**.

The development will generate 485 new trips during the AM peak hour and 497 new trips during the PM peak hour with a daily total of 8,096 new trips. During the AM peak hour, 341 trips will enter the new development and 144 trips will exit the new development. During the PM peak hour, 169 new trips will enter the development and 328 trips will exit the development.

4.12.2.2 Proposed Action Traffic Operations Analysis

Once the number of vehicle trips created by the development are calculated, they must be distributed to the roadway network. Existing turning movement counts at the study area intersections were used to determine where the new trips generate by the Preferred Action will enter and exit the roadway network. The resulting distribution pattern is shown in Figure 5 of the TIS (**Appendix C**). This distribution shows 10% of the trips created by the Preferred Alternative are going into and coming out of USAFA. 25% of the new trips will enter and exit from I-25 north of Northgate Boulevard. 35% of the new trips will enter and exit from I-25 south

of Northgate Boulevard. 30% of new trips will enter and exit along Northgate Boulevard east of Struthers Road.

The ROI intersections were analyzed for initial year (2020) conditions both with and without the Preferred Alternative. The 2020 analysis did not assume the completion of the Powers Boulevard/I-25 interchange and therefore has a more conservative (higher volume) estimate of traffic along Northgate Boulevard. The results of the analysis are shown in **Tables 4.9** and **4.10** below.

Table 4.9. Initial Year (2020) Intersection Operations

Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		Delay (sec.)	LOS	Delay (sec.)	LOS
I-25 NB Ramps/Northgate Boulevard	Roundabout	4.9	A	6.0	A
I-25 SB Ramps/Northgate Boulevard	Roundabout	6.3	A	3.5	A
Northgate Boulevard/Struthers Road	Traffic Signal	16.5	B	23.8	C

Table 4.10 – Initial Year (2020) With Preferred Alternative Traffic

Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		Delay (sec.)	LOS	Delay (sec.)	LOS
I-25 NB Ramps/Northgate Boulevard	Roundabout	6.0	A	6.8	A
I-25 SB Ramps/Northgate Boulevard	Roundabout	7.4	A	3.8	A
Northgate Boulevard/Struthers Road	Traffic Signal	16.5	B	23.3	C
Northgate Boulevard/True North Commons	Traffic Signal	7.4	A	11.8	B

The ROI intersections were also analyzed for Horizon Year (2040) conditions both with and without the Preferred Alternative. The volume of traffic entering USAFA was increased at the assumed regional growth rate. However, if no development occurs on USAFA which would drive an increase in traffic volumes, the volumes analyzed in this TIS are higher than what would occur and therefore provide conservative results. The results of the Horizon Year analyses are shown in Tables 4.10 and 4.11 below.

Table 4.11 – Horizon Year (2040) Intersection Operations

Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		Delay (sec.)	LOS	Delay (sec.)	LOS
I-25 NB Ramps/Northgate Boulevard	Roundabout	7.2	A	11.9	B
I-25 SB Ramps/Northgate Boulevard	Roundabout	12.8	B	12.4	B
Northgate Boulevard/Struthers Road	Traffic Signal	79.3	E	77.3	E

Table 4.12 – Horizon Year (2040) with Preferred Alternative Traffic

Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		Delay (sec.)	LOS	Delay (sec.)	LOS
I-25 NB Ramps/Northgate Boulevard	Roundabout	9.9	A	17.2	C
I-25 SB Ramps/Northgate Boulevard	Roundabout	16.9	C	4.7	A
Northgate Boulevard/Struthers Road	Traffic Signal	22.2	C	22.2	C
Northgate Boulevard/True North Commons	Traffic Signal	9.5	A	24.3	C

Table 4.12 shows that the intersection of Northgate Boulevard/Struthers Road shows an unacceptable LOS E in both the AM and PM peak hours in 2040 without the addition of Preferred Alternative traffic. While not within the scope of this EA a review of further detail reveals that the issue causing poor LOS at North Gate Boulevard and Struthers Road is the high volume of westbound to northbound right-turning vehicles. This can be resolved in the addition of a right-turn arrow signal that comes on at the same time as the non-conflicting southbound left-turns. This is not a measure that is related to the Proposed Action however it is a relatively simple fix that can be achieved with signal timing changes. Because of the simple nature of this mitigation action the intersection of Northgate Boulevard/Struthers Road was assumed to have been mitigated before the Preferred Alternative traffic was added. As a result of assuming this mitigation measure will be taken by others **Table 4.13** shows that all ROI intersections will operate at an acceptable LOS in 2040 with the addition of Preferred Alternative traffic.

To fully evaluate options for the intersection of the Preferred Alternative street network with North Gate Boulevard the TIS also included a comparison of LOS estimated for both a signalized intersection and a roundabout intersection. **Table 4.13** provides the result of those LOS estimated for signal versus roundabout at both initial year (2020) and horizon year (2040).

Table 4.13. Comparison of Traffic Signal and Roundabout Operations for Preferred Alternative

Scenario	Intersection Control	AM Peak Hour			PM Peak Hour		
		Delay (sec.)	LOS	Entering Q (veh.)	Delay (sec.)	LOS	Exiting Q (veh.)
Opening Year (2020 + Project)	Signal	7.4	A	5	11.8	B	5
Opening Year (2020 + Project)	Roundabout	7.7	A	3	7.4	A	2
Horizon Year (2040 + Project)	Signal	9.5	A	11	24.3	C	15
Horizon Year (2040 + Project)	Roundabout	15.2	C	10	17.6	C	9

The conclusion of this comparison is that either a roundabout intersection or traffic signal-controlled intersection will operate at an acceptable LOS (LOS A – D) during both the initial year (2020) and horizon year (2040) with the addition of the Preferred Alternative traffic. The entering queue lengths during the AM peak hour and the exiting queue lengths during the PM peak hour are slightly shorter with the roundabout intersection than the traffic signal-controlled intersection. Additional advantages of the roundabout intersection over the traffic signal-

controlled intersection are that there are no additional maintenance costs for traffic signal equipment, electrical power, and traffic signal timing maintenance. Selection of a signalize intersection or a roundabout does not significantly affect the overall impact of Preferred Alternative traffic therefore either alternative is suitable for inclusion in the traffic network design.

Development of the Preferred Alternative would not cause any of the intersections in the ROI to operate at unacceptable LOS (LOS E or F) and the traffic associated with the TrueNorth Commons development would not create any significant long-term impacts from the Proposed Action.

Construction-related traffic consisting of heavy vehicles, trucks, and cars would be temporary and sporadic, in accordance with proposed development plans. Short-term impacts are not evaluated in a TIS due to the intermittent nature of traffic increases and the expectation that the total additional traffic would be lower than the increase expected from operation of the final development. For these reasons the impact to LOS during construction is expected to result in acceptable LOS values and no significant short-term impacts from the Preferred Alternative would occur.

4.12.3 Environmental Protection Measures

No environmental protection measures have been identified for transportation resources.

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5.0 CUMULATIVE IMPACTS AND OTHER ENVIRONMENTAL CONCERNS

5.1 Cumulative Impacts

Cumulative impacts result from "the incremental impact of actions when added to other past, present, and reasonably foreseeable future actions, regardless of which agency undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (CEQ 1978). Actions overlapping with or in proximity to the Proposed Action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time have a potential for cumulative effects.

Actions in the region were evaluated and considered within the analysis presented in this EA to determine whether cumulative environmental impacts could result from implementation of proposed construction and demolition activities in conjunction with other past, present, or reasonably foreseeable future actions. The evaluated actions are summarized in **Table 5.1**.

Table 5.1 Other Actions in the Vicinity of the EUL Project Area with the Potential for Cumulative Impacts

Action	Timeframe	Location/Description	Resource Interaction
I-25 Improvements including Construction of the Powers Boulevard and I-25 Interchange	Past Future	**Past**: In 2014, CDOT completed the widening of I-25 from Woodmen Road (Exit 149) to Monument (Exit 161) from four lanes to six lanes with the inclusion of auxiliary lanes at busy interchanges. At North Gate Boulevard (Exit 156), the interchange was reconfigured to include one exit and roundabouts at North Gate Boulevard. **Future**: The proposed Powers Boulevard and I-25 Interchange will consist of a signalized diamond interchange that will complete the northern expansion of Powers Boulevard. The interchange will connect Powers Boulevard to I-25 and will incorporate additional traffic connections to North Gate	Water Resources Biological Resources Cultural Noise Land Use Aesthetics

Action	Timeframe	Location/Description	Resource Interaction
		Boulevard. The expanded interchange complex will not only serve free-flowing freeway to free-flowing freeway but will also provide additional access for local traffic.	
Commercial and residential development along the I-25 Corridor	Past, Present, Future	Development of areas along I-25 including Copper Ridge and Polaris Pointe.	Water Resources Biological Resources Cultural Noise Land Use Aesthetics
Construction of the proposed CSU Northern Interceptor	Future	Construct a new CSU pipeline from the southeastern portion of USAFA to the northern boundary of USAFA.	Water Resources Biological Resources Cultural Noise
Replace North Stadium Boulevard Entry Control Point (ECP)	Future	This programmed transportation project will include construction of a permanent ECP for North Stadium Boulevard, just south of Deadman's Creek.	Cultural Land Use
Monument Branch Creek Restoration, City of Colorado Springs	Past, Present, and Future	Channel and streambank restoration projects at Monument Branch including installation of hardened grade controls and erosion control measures.	Water Resources Biological Resources Cultural Noise Land Use
Cemetery Expansion			Cultural Land Use Aesthetics

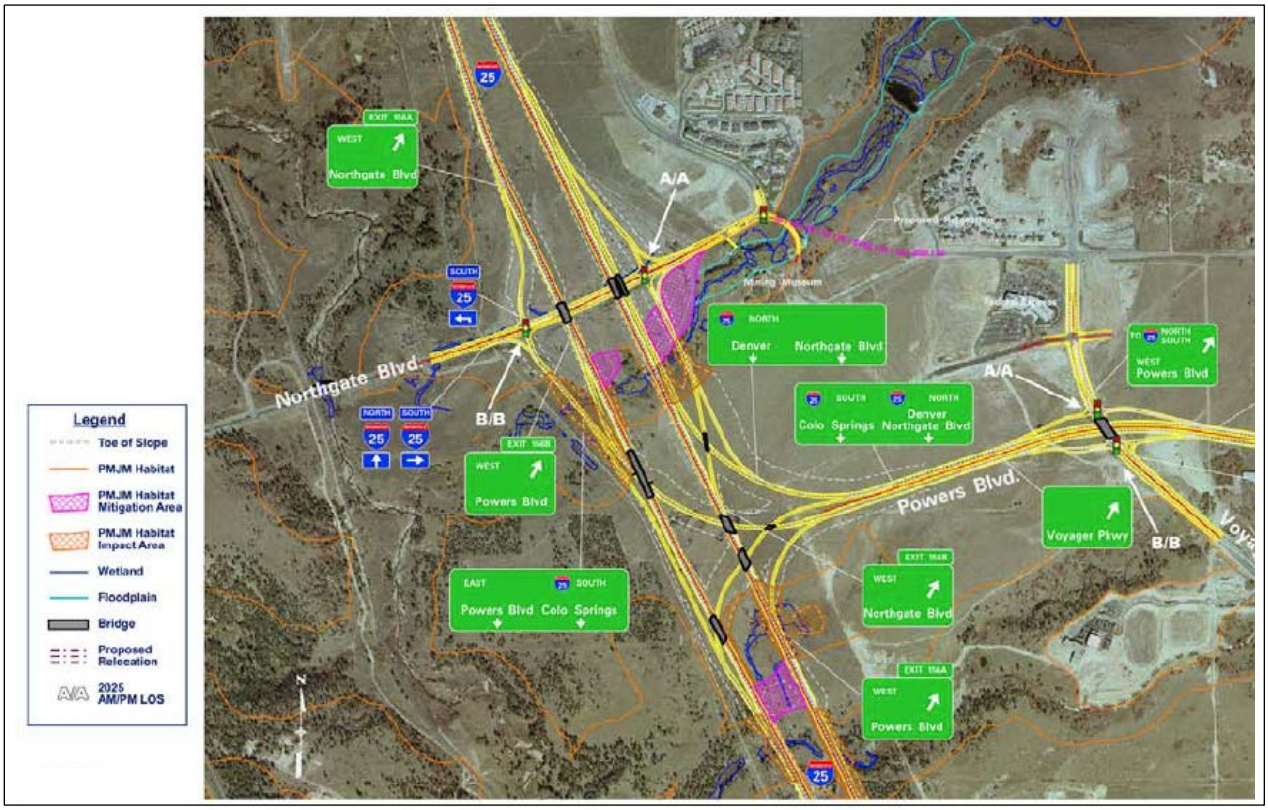
I-25 Improvements

One of the larger projects in Colorado Springs, the widening and improving of I-25 from Colorado Springs to Monument, Colorado has and will likely continue to add the most significant cumulative affects to the Project Area. CDOT, as part of the NEPA process, has completed numerous studies for the I-25 corridor which includes the stretch of I-25 adjacent to the USAFA, east of the Project Area. These studies include:

- Interstate 25 Improvements through the Colorado Springs Urbanized Area Environmental Assessment (CDOT 2004)
- Sustaining Nature and Community in the Pikes Peak Region, A Sourcebook for Analyzing Regional Cumulative Impacts (CDOT 2003)
- Re-evaluation, Mileposts 149 to 161, Interstate 25 Improvements through the Colorado Springs Urbanized Area Environmental Assessment (CDOT 2012)

CDOT and the federal Highway Administration coordinated extensively with USAFA to select a design alternative for the Powers Boulevard/I-25 Interchange to minimize intrusion of roadways on USAFA property. As a result of the coordination, the current proposed interchange alignment was chosen as identified in Figure 5.1.

Figure 5.1 – Powers Boulevard/I-25 Interchange



Source: I-25 Improvements through the Colorado Springs Urbanized Area Environmental Assessment (CDOT 2004)

Completing the Powers Boulevard/I-25 Interchange at North Gate Boulevard, according to CDOT's 2004 EA, would require using an additional 48.4 acres of USAFA property for the proposed improvements. The Powers Boulevard/North Gate Boulevard connections would include construction of frontage roads and signalized intersections, as well as additional signage and lighting. This new alignment is expected to alter the rural characteristics of USAFA's north

entryway by introducing new visual elements at North Gate Boulevard. Because of these alterations, CDOT, USAFA, and the federal Highway Administration focused on designs that would modernize the interchange while maintaining the entryway experience for USAFA visitors. The chosen design keeps new or modified roadway elements at or below existing grade and utilizes existing topography to fit with the natural terrain and to separate traffic movements, thereby minimizing impacts and maintaining the USAFA entryway experience.

CDOT recognized the potential for multiple environmental processes that would be assessing cumulative impacts through the Colorado Springs Urbanized Area and, in conjunction with community groups, resource experts, and citizens advisory committees, prepared a cumulative effects resource document titled: *Sustaining Nature and Community in the Pikes Peak Region, A Sourcebook for Analyzing Regional Cumulative Effects* (December 2003). This document analyzes environmental trends in the Pikes Peak region based on the assumed implementation of proposed land use and transportation plans.

The goals of the Sourcebook were to provide a framework for evaluating cumulative impacts of major transportation projects in the area and to develop comprehensive strategies to reduce, mitigate, or reverse negative environmental trends in the Pikes Peak Region.

5.1.1 Land Use and Aesthetics

In the 2004 CDOT EA, the I-25 Expansion project was identified as having an adverse effect on the existing landscape of USAFA by converting open land to additional highway lanes (completed in 2014), reconfiguring the North Gate Interchange (proposed future action), and adding new ramps for the I-25/Powers Boulevard interchange at North Gate Boulevard (proposed future action). According to the 2004 EA, the adverse effects would alter the original appearance of the eastern boundary of USAFA and required the relocation of the Ackerman Overlook, a roadside parking area that allows visitors to view a portion of the USAFA property.

By adding additional lanes and by reconfiguring the I-25 interchanges along the eastern border of USAFA, the I-25 corridor itself contributes to the landscape by highlighting the original planning and development of USAFA and by demonstrating the efforts of USAFA to preserve the natural beauty of its property with landscape design strategies and development restrictions. In addition, it was noted that the proposed I-25 improvements would be a part of the alteration of the original rural character of USAFA by promoting development on surrounding land. This has proven true as large-scale urbanization along the I-25 corridor has occurred (and continues to occur) since the I-25 widening project was completed in 2014.

Urban development is continuing to take place along this stretch of I-25 near USAFA with the completion of the I-25/Powers Boulevard interchange and additional residential and commercial developments in the area. These developments would further alter the characteristic landscape

of the eastern portion of USAFA, even though the existing buffer space between I-25 and USAFA would screen some of the urban development along the eastern side of the interstate.

Mitigation strategies to minimize the adverse effects to USAFA were first implemented in 2002 during the design phase of the I-25 corridor improvement project. CDOT and the FHWA hosted public meetings and provided a design charrette for the USAFA and its original site architect, Skidmore Owings & Merrill. The design review included an examination of issues and the effects of various designs for the North Gate Interchange and an eventual design concept was developed by the stake holders for the I-25/Powers Interchange at North Gate Boulevard. The result of the design charrette was an interchange design that minimizes impacts, including impacts to the visitor center entry experience, within the USAFA property boundary. The design was, in part, chosen to balance the original intent of the USAFA design and the realities of inevitable urban development along the eastern boundary of I-25.

Design strategies included keeping the I-25/Powers Interchange at North Gate Boulevard at or below the existing centerline grade to lessen the possibility of seeing the interchange from high vantage points within USAFA, and to minimize the intrusion of the interchange structures in this sensitive natural environment. The new slopes would also be designed by a landscape planner to avoid an austere or harsh engineered appearance. Vegetation removed during the construction of the interchange would be replaced with similar species and visually appealing landscape designs following construction.

CDOT's 2004 EA concluded that *no adverse effect* to USAFA would occur as part of the widening of I-25 within the existing I-25 easement. However, the reconstruction of the interchange connecting Powers Boulevard to I-25 at North Gate Boulevard and the relocation of Ackerman Overlook resulted in an *adverse effect* for USAFA because of the resulting additional 48.4 acres of additional easement at the USAFA property. Mitigation of these adverse effects included completion and delivery of Level II archival photography of the segment of I-25 that would be impacted by the proposed improvements, while. USAFA representatives will also be included in the final interchange design process to ensure that the finalized designs are compatible with USAFA aesthetic expectations. CDOT will also provide a detailed narrative history on USAFA and archival photographs of the area prior to the I-25 expansion and interchange construction in the form of Level II documentation.

Off-installation actions (urban development east of the USAFA property) would not necessarily be subject to the same requirements for consultation and planning as federal actions are, and cultural resources are not necessarily protected to the same level outside of the USAFA and I-25 boundaries. It is therefore likely that urban development actions in the area could have negative effects on cultural resources, individually or cumulatively. However, mitigation along I-25 (a buffer between USAFA and the urban development areas) would be completed as part of the

design and construction of the proposed I-25/Powers Boulevard exchange, minimizing to the extent possible the adverse effects on the USAFA historic district.

5.1.2 Noise

Improvements on I-25 including the construction of the Powers Boulevard/I-25 Interchange at North Gate Boulevard will result in increased traffic volumes and noise levels in the area. These increased noise levels will be realized during construction (temporary noise impacts) and as an increase in volume (permanent noise impacts).

The number of miles being driven has been increasing along the I-25 corridor for many years. The result is an increase in traffic noise of 3 dBA for every doubling of traffic volume along I-25. An increase in heavy trucks can also add significantly to noise impacts because a semi-truck or tractor trailer is as loud as approximately 13 passenger cars. This is important, because truck traffic is growing at a faster rate than the general population.

Traffic speeds also contribute to an increase in noise pollution. Noise impacts increase approximately 1 to 2 dBA for every 10 mph increase in speeds. By widening I-25 and increasing flow volumes, speeds have also increased in the area resulting in increased noise.

CDOT is committed to implementing noise mitigation strategies including planning strategies (e.g. set back development at least 500 feet from major roadways). Unfortunately, continued population growth along the I-25 corridor is likely to result in additional development as houses and roads continue to be built next to each other. The impact on distance is a 3 dBA increase in traffic noise for every halving of distance between a receptor and a road.

Construction of residential and commercial development along the corridor will also add temporary impacts (construction noise) and permanent impacts (additional population leads to increased traffic and more receptors).

Therefore, cumulative impacts from noise would be seen along the I-25 corridor. According to the CDOT's *Sustaining Nature and Community in the Pikes Peak Region, A Sourcebook for Analyzing Regional Cumulative Effects,* noise levels are expected to increase in the Pike Peak region in the future. The increases will occur in established areas as a result of urban infill and high-density development. Noise levels along the interstate area also expected to increase as more residential areas are built next to major roads. The number of people living with noise levels of 60 dBA or greater (typical noise levels along interstate roadways) will increase over the next several years.

The Regional Cumulative Effects Analysis identifies numerous policy-level and project-level mitigation strategies for dealing with noise in the Pikes Peak region. Some of the regions noise-generation issues are national issues that would be minimally influenced by local governments (e.g. noise regulations applicable to interstate commerce via aircraft, trains, and interstate trucking). Typical policy-level mitigation measures under the jurisdiction of local governments (the City of Colorado Springs and El Paso County) would fall under the category of land use planning strategies. The following noise mitigation strategies were identified in the Regional Cumulative Effects Analysis:

- Separate development from major roadways by at least 500 feet
- Minimize future development near freight rail corridors
- Use zoning to keep noise polluting industry away from residential areas
- Install earthen berms where possible and use development features (e.g. sound walls, garages, and commercial buildings) as noise barriers

By implementing policy-level and project-level mitigation strategies and by using BMPs to control temporary and permanent noise sources in development areas along I-25, noise impacts would be minimized in the area.

5.1.3 Air Quality

Air quality has been monitored in the Colorado Springs area since the late 1970s and has been impacted primarily by the following sources:

- Automobiles (carbon monoxide, nitrous oxides, and lead)
- Coal and wood burning (particulate matter)
- Industry emissions (hazardous air pollutants)

Results of ongoing air quality monitoring indicate that the Pikes Peak region currently meets state and federal air quality standards (is in attainment) for all 6 major air quality pollutants. El Paso County has the authority to regulate and monitor stationary emission sources and area sources for pollutants. The owners of these source areas are ultimately responsible for reducing emissions to stay within regulatory levels.

As part of the I-25 Improvements through the Colorado Springs Urbanized Area Environmental Assessment (CDOT 2004) air quality modeling was completed at the project level. Carbon monoxide hot spot modeling was completed for intersections along I-25 that historically demonstrated a traffic level of service of D, E, or F during peak-hour with the highest traffic volumes (worst case scenarios). This study was completed prior to the expansion of I-25 from south Colorado Springs to Monument. Hot spot analysis is an estimation of likely future localized

pollutant concentrations that violate air quality levels by creating a new or worsening an existing exceedance of Federal CO standards. If the hot spot modeling analysis resulted in no new or worsened violations of the federal CO standard, then it was inferred and concluded that no violations would occur on a localized level. The 2004 EA results indicated that under all scenarios modeled, no concentrations of CO would exceed the carbon monoxide standard. The CDOT EA concluded that there would not be any new or worsened violations of the carbon monoxide standards. Current air quality monitoring confirms that carbon monoxide levels do not exceed federal CO standards.

In addition, the EA indicated that emissions from future travel conditions along I-25 are incorporated into the State of Colorado's visibility plan which is required by federal law to demonstrate the necessary visual improvements in Class I Areas. EPA-mandated improvements in vehicle emission reduction technologies will also reduce emissions resulting in visibility improvements along the I-25 corridor. Congested stop-and-go traffic produces excessive emissions. By improving traffic flow along I-25, CDOT has effectively reduced the amount of emissions along the I-25 corridor.

The Pikes Peak Area Council of Governments (PPACG) completed a regional conformity analysis as part of the PPACG Destination 2025 Long-Range Transportation Plan. It provides an accounting of mobile source carbon monoxide emissions from traffic on all modeled roadways in the Pikes Peak region. The analysis predicted that motor vehicle use in the region would produce approximately 266 tons of carbon monoxide daily by 2025 which is under the allowable daily emission budget of 270 tons.

CDOT's Regional Cumulative Effects Analysis identified several policy-level and project-level mitigation strategies that would minimize impacts to air quality in the Pikes Peak region. Many of these policy-level strategies address land use planning decisions that are under the jurisdiction of local governments such as the City of Colorado Springs and El Paso County. Land use planning strategies include: encouraging mixed-use development along transportation corridors to reduce the number of vehicular miles traveled, supporting higher density residential and mixed-use development in growth areas, and encouraging intermodal transportation system development to reduce the number of automobiles on the road.

Although it is not expected that any of the actions listed in **Table 5.1** would individually require a conformity determination, cumulative impacts to air quality in the region are expected. By implementing policy-level and project-level land use management planning strategies and BMPs to control source emissions, development in the area should allow El Paso County to maintain its current air quality attainment status.

5.1.4 Water Resources

Water is a valuable resource in the semi-arid steppe climate of Colorado Springs, where annual precipitation is estimated at 16.1 inches (408 millimeters). This natural precipitation is not adequate to supply the estimated 700,000 residents living in the metropolitan area, and, as a result, more than 85% of the region's water is brought in from the Rocky Mountains west of the Continental Divide.

The region also has more impervious surfaces than ever before, thereby increasing the amount of natural precipitation that runs off into local drainages rather than being absorbed into the ground. Increased runoff is also responsible for increased erosion and sedimentation that can diminish water quality in the local watershed. In 2000, CDOT estimated a total of 170 square miles of impervious surfaces in the Pikes Peak Region. This number is estimated to increase to 238 square miles of impervious surfaces by 2025.

Runoff from impervious surfaces can affect both the water quality and water quantity of surface drainage. Growth projections from the turn of the century estimated a population increase of 40 per cent over the next several decades, which will increase development and the amount of impervious surfaces in the region. The increase of impervious surfaces has become a topic of concern for the region, as flood flow has damaged streams, wetlands, and waterways in the area, including significant damage to some tributaries of Monument Creek.

The primary federal regulations that governs water quality are the Phase I and Phase II Stormwater Regulations implemented by the EPA. These regulations require municipalities and other regulated entities (including CDOT) to acquire a National Pollutant Discharge Elimination System (NPDES) Permit under 40 CFR Parts 122, 123, and 124 for their stormwater discharges. NPDES regulations must comply with the EPA requirement to control the discharge of pollutants to the maximum extent practicable.

In Colorado, the NPDES regulations are implemented under the Colorado Discharge Permit System (CDPS) administered by the CDPHE and include two types of permits:

- CDOT Municipal Separate Storm Sewer Systems (MS4) Discharge Permit
- CDPS General Permit for stormwater discharges associated with construction activities

The MS4 General Permit Remand Rule establishes two alternative approaches an NPDES permitting authority can use to issue and administer small MS4 general permits with the purpose of reducing the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the CWA.

CDOT's I-25 corridor improvements and expansion has been completed under a MS4 Permit (No. COS-000005) that covers "state and interstate highways and their right of ways within the jurisdictional boundary of CDOT served by, or otherwise contributing to, discharges to state waters from municipal separate storm sewers owned or operated by CDOT." The permit requires CDOT to develop and implement a program that ensures new highway projects and significant highway modifications are reviewed for the need to include permanent stormwater BMPs.
CDOT also received a CDPS General Permit for stormwater discharges for construction activities prior to completion of the I-25 corridor improvements. This general statewide permit required CDOT projects to obtain a certificate of compliance from CDPHE prior to initiating any construction activities. As required, CDOT completed numerous SWMPs outlining the location and types of temporary and permanent BMPs in each project area. Future CDOT projects will also be required to provide SWMPs, including the Powers Boulevard/I-25 interchange at North Gate Boulevard.

The significance of cumulative impacts to water quality in conjunction with past, present, and reasonably foreseeable future actions is dependent on the pace and extent of development in El Paso County. However, ongoing stream restoration projects and the implementation of stormwater management plans under the NPDES program would potentially mitigate adverse effects where they most critically affect the channel and floodplain.

Past, present, and future stream improvement projects will address stormwater management deficiencies; projects that include the Monument Branch Creek restoration program that is in the process of repairing significant stream damage from high volume flood flow. The future CSU Interceptor project will also impact stretches of Monument Creek and its tributaries during construction activities, but the project will be designed to minimize impacts and provide restoration of temporary activities. Projects with stream restoration designs would offset some of the impacts of off-installation development and potentially result in net improvements in surface water quality through reductions in water sediment load and sedimentation rates, organic material content, turbidity, and temperature.

Additional impacts to Water Resources, including impacts to floodplains and wetlands, are discussed in the following sub-sections.

Floodplains
Direct impacts to approximately 52 acres of floodplains occurred as a part of construction activities related to the I-25 widening project, including impacts to 9 acres of floodplains at Monument Creek and 5 acres at Smith Creek. Where the original highway (pre-widening) was within a floodplain, completion of roadway embankments, bridges, culverts, and channel stabilization were designed to remove the roadway from the floodplain in compliance with federal floodplain regulations including regulations administered by FEMA and the City and

County. In areas where base flood elevations or floodplain limits were increased, Conditional Letter of Map Revisions (CLOMR)s and Letter of Map Revision (LOMR)s, as required, were processed through the City/County Floodplain Administrator for approval by FEMA to revise the appropriate regulatory floodplain and/or floodway.

Detention basins were also constructed in open areas of interchanges and other large open areas to reduce peak discharges and limit runoff from the roadway. The final designs for I-25 corridor improvements were completed to assure that the floodplain base flood elevations and boundary increases did not extend outside the I-25 right of way by increasing the hydraulic capacity of the crossing structures as needed. Future CDOT projects, including the design and construction of the Powers Boulevard/I-25 Interchange, will also be completed in compliance with federal floodplain regulations.

Development in surrounding areas (past, present, and future) has resulted and will result in ongoing conversion of native vegetative habitats (e.g. shortgrass prairie) to housing and commercial developments, thereby increasing the percentage of the floodplain covered by impermeable surfaces, which, in turn, increases overland flow rates. These additional rates could ultimately impact Monument Creek and its tributary waterways. Water quality from the additional runoff, as discussed in previous sections, is controlled through the permitting processes established by the NPDES program.

Wetlands
Wetland impacts associated with the I-25 Corridor Improvements project included a total of 10.22 acres, consisting of 6.79 acres of jurisdictional wetlands and 3.43 acres of non-jurisdictional wetlands. Impacts to wetlands associated with Monument Creek north of Interquest Parkway included 4.25 acres of jurisdictional wetlands and 2.14 acres of non-jurisdictional wetlands. Most of these impacts were from the construction of interchanges and the associated infrastructure.

5.1.5 Safety and Occupational Health

Cumulative impacts to safety and occupational health associated with the combined implementation of the Proposed Action in conjunction with past, present, and reasonably foreseeable future actions would not be significant. The Proposed Action and the actions identified in **Table 5.1** would involve typical construction and development activities. While these types of activities are not without risk to workers, they are not expected to present exceptional risk. Safety regulations, plans and programs intended to manage risks to personnel safety associated with construction operations would continue to minimize those risks to the extent possible and practicable, whether they are executed at USAFA or on private or

public lands adjacent to the installation. Generally, risk is not cumulative between discrete projects at different locations, as risk associated with one project does not increase the likelihood of accidents at another. No extraordinary risks to workers are expected.

5.1.6 Hazardous Materials and Waste

The Proposed Action, as well as the actions identified as potential contributors of cumulative impacts in **Table 5-1**, would be expected to involve routine construction operations. All such operations must comply with RCRA requirements, including the preparation and approval of an SPCC plan. During construction activities, small amounts of hazardous materials are expected to be used, and the potential for spills would exist. Any spills or releases of hazardous materials would be cleaned up by the construction contractor as per their approved SPCC plan. Hazardous materials likely to be used during construction activities include fuels, solvents and POL.

Cumulative impacts to hazardous materials and waste management associated with the combined implementation of the Proposed Actions in conjunction with past, present, and reasonably foreseeable future actions would not be significant.

5.1.7 Biological Resources

Populations and habitat of the PMJM are known to exist along the I-25 corridor, and within the Project Area as discussed in Sections 3 and 4 of this EA. These habitats are typically identified along stream corridors and drainages with vegetation and protection favorite by the PMJM population. As part of CDOT's 2004 EA, several areas of PMJM habitat were identified between Monument and the Woodmen Road Interchange, especially within the USAFA property.

Widening of I-25 along the 9.2-mile stretch of highway was mitigated through workshops with environmental and design engineers to identify areas where impacts could be avoided or minimized. Design of the I-25 widening project resulted in a maximum total of approximately 20 acres of permanent impacts and 26 acres of temporary impacts to PMJM habitat. Following completion of the I-25 widening project, re-establishment of habitats preferable for PMJM was completed to allow the mouse population to recover and stabilize. In addition, completion of the I-25 corridor project has benefitted the PMJM population by improving habitat connectivity and PMJM mobility as a result of improved culvert and bridge crossing designs.

However, PMJM habitat in and near USAFA would be expected to continue to be affected by current and future planned projects including the implementation of the Monument Branch Creek restoration, construction of the Northern Interceptor, and development in and around PMJM habitats. Potential long-term losses of PMJM habitat and temporary short-term disturbances would be expected to occur and later be mitigated as part of the project design

(e.g. re-establishment of PMJM habitat in impacted areas); however, the USAFA Conservation Agreement only covers those maintenance and repair projects on the Academy. Actions off of USAFA would require a new ESA consultation. Projects that are designed to conserve or create new habitat would improve the quality and resilience of PMJM at USAFA in the long term.

Estimates in this document of ground disturbance made before project planning is complete are necessarily conservative and tend to overestimate the total disturbance. The Monument Branch Creek restoration initiative and the construction of the CSU Northern Monument Creek Interceptor would be planned so as to not cumulatively exceed 60 acres of habitat disturbance and proportional PMJM take permitted by the USAFA and USFWS PMJM Conservation Agreement in any given 5-year timeframe for maintenance and repair activities. Planning for these projects would proceed with the objective of avoiding an exceedance if feasible. In the unlikely event that that these actions cumulatively exceed 60 acres, formal consultation with USFWS would be initiated and analyzed in NEPA documents prepared for the projects. PMJM habitat on USAFA is expected to remain under USAFA jurisdiction in keeping with the provisions of the PMJM Conservation Agreement.

As presented in Sections 3 and 4 of this EA and as part of the Section 7 Consultation and resulting Biological Opinion (**Appendix E**), development of the TrueNorth Commons project including off-site stormwater infrastructure would result in direct impacts to 0.40 acres of PMJM habitat, 0.38 acres of which are temporary and 0.02 acres of which are permanent. Direct adverse impacts are anticipated in low-quality mouse habitat consisting of upland grassland habitats used by the PMJM for foraging, day nesting, and some dispersal. The impact area constitutes only a small portion of the species occupied range, approximately 0.00004 percent.

Past projects including the widening of the I-25 corridor have resulted in the loss of PMJM habitat, however CDOT completed the widening of the I-25 corridor with mitigation and re-establishment of PMJM habitat creating conditions facilitating recovery and stabilization of affected PMJM populations over the past 5+ years.

The Monument Branch stream restoration project includes an approximate 5,800-foot linear three-phase Channel Improvement Implementation Plan from Voyager Parkway to Monument Creek. A Biological Assessment and resulting Biological Opinion were completed under Section 7 of the Endangered Species Act for two of the restoration phases on Monument Branch, including the reach of Monument Branch adjacent to and upgradient of the USAFA property (Phase 2) and the reach of Monument Branch adjoining Monument Creek within the USAFA property (Phase 3). The Monument Branch restoration project would impact approximately 8.124 acres of PMJM habitat including 4.047 acres of temporary impacts and 4.077 acres of permanent impacts. Temporary direct impacts would include areas graded for bank stabilization that would be re-vegetated with native trees, shrubs, and herbaceous species. Permanent impacts are generally associated with channel realignment and drop structures. A reduction in

the quality of PMJM habitat (disruption of normal dispersal, foraging, breeding, and hibernation) is expected until revegetation of the area is completed, and the vegetation matures.

One of the goals of the Monument Branch Restoration project is to promote PMJM habitat enhancement following significant flood flow damage to the channel. The Phase 3 project area is expected to result in an increase of 0.79 acres (61 percent) of PMJM high-quality habitat and an increase of 2.38 acres (28 percent) of moderate quality habitat. Low quality habitat would be reduced by 2.39 acres. The Phase 3 creek habitat enhancement will ultimately result in a net project increase of 0.73 acres of high-quality habitat and 2.33 acres of moderate quality habitat and would provide a net benefit to Preble's and other wildlife by improving wetland and riparian habitat and promoting species migration.

Impacts to PMJM habitats from the future CSU Interceptor project are not yet known, the CSU Interceptor project through USAFA property will be required to complete the NEPA process including formal Section 7 Consultation with the USFWS. Impacts to PMJM habitat will be minimized during project design and enhancement of PMJM habitat is expected.

Lesser known impacts to PMJM habitat may be seen as part of future commercial and residential development in the area. However, because PMJM habitat is typically associated with wetlands along tributaries of Monument Creek, impacts to PMJM habitat during future development of the area would likely be minimized through water quality permitting including terms specified in project-specific 404 and MS4 permits and as part of required consultation with USFWS.

The Powers Boulevard extension and I-25 Interchange construction project located east of USAFA property could also impact the quality, connectivity and extent of PMJM habitat in the region. Based on the current design, direct and indirect impacts are possible over an area of approximately 22 acres. In general, development in riparian areas and adjacent uplands is expected to continue to effect regional losses of PMJM habitat and populations, though these projects are also required to incorporate consultation with USFWS if they are to be executed within critical habitat. Any cumulative effects from USAFA actions on the PMJM are expected to be negligible because of the small localized area of effects and the temporary nature of the construction, along with the conservation measures in place to minimize effects.

Because of project design planning, mitigation, and re-establishment of PMJM habitat expected as part of current and future projects, the Proposed Action and the actions identified in **Table 5.1** are not expected to contribute cumulatively to long-term local or regional declines in the range, prevalence, or populations of PMJM or any other species found in the area. Further, they are not expected to contribute to a reduction in the geographic extent, functioning, interconnectivity, or biogeographic distribution of any ecosystem or habitat type.

5.1.8 Cultural Resources

A determination of negligible impact can be reached because of the project specific PA and the language lease will ensure continued NHPA compliance within the lease area, resulting in no change that could contribute cumulatively to other activities resulting in impacts in the area. The actual signing of the enhanced use lease does not lead to an adverse effect. In conjunction with the project specific Programmatic Agreement (PA) leads to a determination the impact to historic properties will only be negligible in size and character.

Preparer's Note: Information on outcome of the project specific PA will be updated once consultation and filing with the ACHP is complete.

5.1.9 Earth Resources

Past, present, and reasonably foreseeable future development and infrastructure actions would result in soil disturbance and may include conversion to impermeable surfaces in a pattern typical of urban development. Typical construction operations, including the Proposed Action, in combination and other actions in the region described in **Table 5.1** are not expected to individually or cumulatively affect the stability of local bedrock or negatively affect soil stability in a manner likely to undermine infrastructure or create an elevated landslide or soil movement risk. USDA-designated prime farmland does not exist in the Front Range region. Significant cumulative impacts to earth resources associated with the implementation of the Proposed Action in conjunction with these actions would not therefore be expected.

5.1.10 Socioeconomic Resources

The Actions outlined in **Table 5.1** are not expected to have a negative impact on socioeconomic resources in the area, either individually or cumulatively. The construction phase for each project is expected to result in short-term cumulative beneficial impacts to socioeconomic resources by increasing the number of construction- and development-based jobs and providing more commercial revenue for local retail establishments.

Cumulative, long-term impacts from commercial and residential development along I-25 include the creation of additional jobs and a growth in population within the ROI. The creation of additional employment opportunities would be expected to decrease the unemployment rate for El Paso County (4.2% in December 2018) as a majority of the permanent jobs would likely be filled from current residents of El Paso County.

The availability of housing in the ROI and El Paso County is currently in short supply and residential development along I-25 is expected to remain strong as long as there is less

inventory than demand. No negative cumulative impacts to median household incomes in the area are expected, as the residential areas developing along the I-25 corridor are providing jobs that are similar income potential as the leading occupation categories within the ROI.

Additional commercial and residential development along I-25 will also increase the amount of tax revenue generated for El Paso County and Colorado Springs. Therefore, cumulative impacts would include beneficial increases in employment, income, and tax revenues within the ROI, El Paso County, and the City.

Cumulative impacts to the school systems and police and fire protection would be expected by the additional commercial and residential development along the I-25 corridor due to an increase in population and the need for additional law enforcement and fire protection services. The school system servicing the ROI is Colorado Springs Academy District 20 (D20) which, in November 2016, passed a bond initiative that includes the construction of five new schools/buildings to meet the demand of the growing D20 community. Colorado Springs also has substantial capacity in both law enforcement and nearby fire protection resources. The development area along I-25 is already part of the service area for both Colorado Springs Police and the Colorado Springs Fire Department, and the additional tax revenue generated by the developments would help support additional public services.

5.1.11 Transportation and Traffic

Projects identified in **Table 5.1** that have the potential to use North Gate Boulevard for construction access include the Monument Branch Creek Restoration project, the CSU Northern Interceptor project, and the Powers/I-25 Exchange project. Short-term cumulative impacts from these projects would include an increase in construction traffic and potential lane closures during construction cycles.

Long-term cumulative traffic impacts from the additional development of commercial and residential areas along I-25 would impact but would not result in an unacceptable LOS along North Gate Boulevard as confirmed in the Traffic Study presented in **Section 4.12.2.2**.

Beneficial long-term cumulative impacts to traffic would be expected from the construction of the Powers Boulevard/I-25 Exchange. By adding an additional access to I-25 and increasing through traffic capacity, traffic along North Gate Boulevard and throughout the ROI is expected to decrease.

5.2 Unavoidable Adverse Effects

This EA identifies any unavoidable adverse impacts that would be required to implement the Proposed Action and the significance of the potential impacts to resources and issues. Title 40 of

the *Code of federal Regulations* §1508.27 specifies that a determination of significance requires consideration of context and intensity. Design, development, and operation of a mixed-use commercial development would impact the proposed development area at USAFA. The severity of potential impacts would be limited by policy-level and project-level mitigation strategies (e.g. development plans, BMPs) and regulatory compliance for the protection of the human and natural environment to minimize adverse impacts to resources.

Unavoidable short-term adverse impacts associated with the implementing the Proposed Action would include: temporary erosion and sedimentation from soils disturbance, a temporary increase in fugitive dust and air emissions during construction activities, intermittent noise, minor alterations to local traffic, and temporary disturbance of 0.38 acres of low-quality PMJM habitat. However, these effects are considered minor and would be confined to the immediate area. Use of environmental controls and implementing controls required in permits and approvals obtained would minimize these potential impacts.

Unavoidable, long-term adverse impacts would include: change in land use for a portion of the site from open space to commercial, alteration to the visual landscape along North Gate Boulevard and I-25, minor damage to soils due to compaction and paving, wildlife deterrence from the development area, loss of approximately 36 acres of habitat including loss of approximately 0.873 acres of non-jurisdictional wetlands formed within upland drainage ditches, minor increase to traffic along North Gate, minor increase to CSU utility demand, and permanent impacts to 0.02 acres of low-quality PMJM which could include the possible incidental taking of Prebles meadow jumping mice in small numbers.

For the Proposed Action to be accomplished, these impacts would occur. The action is required to provide USAFA with a visitor center outside of the secure boundary and manage USAFA's obligation to the Air Force to engage the public. No other alternatives would provide the engineering and resource management solutions to meet the standards for USAFA's public engagement mission.

5.3 Relationship Between Short-Term Use of the Environment and the Maintenance and Enhancement of Long-Term Productivity

CEQ regulations (40 CFR § 1502.16) specify that environmental analyses must address "…the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity." Special attention should be given to impacts that narrow the range of beneficial uses of the environment in the long-term or pose a long-term risk to human health or safety. The relationship between short-term uses and enhancement of long-term productivity from implementation of the Proposed Action is evaluated from the standpoint of short-term effects and long-term effects. A short-term use of the environment is generally

defined as a direct consequence of a project in its immediate vicinity. Changes to long-term productivity generally refer to negative impacts to the long-term quality of the land, air or water. Short-term effects of the Preferred Alternative would be those associated with the 5-year phased construction of the 34.62-acre development. The long-term enhancement of productivity would be those effects associated with the operation and maintenance of the development after implementation of the Proposed Action.

The Proposed Action represents an enhancement of long-term productivity for security and accommodation of USAFA visitors outside of the secure portion of USAFA, allowing USAFA to remain dedicated to sharing the historical significance and fostering continued interest and respect for the Air Force while managing security threats in the rapid response period required to protect the safety of USAFA personnel. The only change with the long-term productivity of the development area is the conversion of the wetlands to buildings, roads, and other infrastructure.

USACE determined in an AJD that was finalized on May 3, 2019, that the impacted wetlands within the development area were non-jurisdictional, meaning those wetlands are not considered WOTUS. Because the site contains no jurisdictional wetlands, no mitigation of wetlands is required by USACE. Furthermore, the wetlands proposed for impact are vegetated drainage ditches, comprised of cattail and thistle, underlain by sheet metal or asphalt, and immediately adjacent to North Gate Boulevard, which severely diminish the conservational value of the areas; therefore, the impact on the aquatic sites in the area would have an adverse, but not significant, effect on long-term productivity. Additionally, the negative effects of short-term impacts during construction activities would be minor compared to the positive benefits from the proposed mixed-use commercial development that would facilitate the relocation of USAFA's Visitor Center outside of USAFA's secure boundary, enhance visitor experience, generate revenue for the City, generate jobs and recreational opportunities for USAFA cadets, and finance a new Visitor Center. Immediate and long-term benefits would be realized for USAFA's cohesive management of visitors and security operations after completion of the Proposed Action.

5.4 Irreversible and Irretrievable Commitments of Resources

This EA identifies any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action if implemented. An irreversible effect results from the use or destruction of resources (e.g., energy) that cannot be replaced within a reasonable time. An irretrievable effect results from loss of resources (e.g., endangered species) that cannot be restored as a result of the Proposed Action. The short-term irreversible commitments of resources that would occur would include planning and engineering costs, building materials and supplies and their cost, use of energy resources during construction, labor, generation of fugitive dust emissions and air pollutants, and creation of temporary construction noise. Long-

term irretrievable commitments of resources would include use of energy resources during operations of the Preferred Alternative and generation of additional air pollutants.

In addition to the loss of habitat, loss of wetlands, and permitted take of PMJM discussed in this EA, the following Irreversible and Irretrievable Commitment of Resources in direct response to the Preferred Action includes:

- Building materials (for construction of facilities), concrete and asphalt (for parking lots and roads), and various material supplies (for infrastructure) and would be irreversibly lost. These resources are not in short supply, would not limit other unrelated construction activities, and would not be considered significant. In addition,
- Energy resources used as a result of the Proposed Action would be irretrievably lost. These include petroleum-based products (e.g., gasoline and diesel), natural gas, and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operation, gasoline or diesel would be used for the operation of privately-owned vehicles, while natural gas, water, and electricity would be used by operational activities of the development. Consumption of these energy resources would not place a significant demand on their availability in the region.

6.0 LIST OF PREPARERS

Steve Young, PG
Program Manager
Matrix Environmental Services
2435 Research Parkway, Suite 300
Colorado Springs, Colorado 80920

Chad Coker
Senior Project Manager
Matrix Environmental Services
2435 Research Parkway, Suite 300
Colorado Springs, Colorado 80920

Tierney Walsh
Environmental Scientist
Matrix Environmental Services
2435 Research Parkway, Suite 300
Colorado Springs, Colorado 80920

Clint Henke
Biologist
ERO Resources Corporation
1842 Clarkson Street
Denver, Colorado 80218

Sarah Jennings
Principal Investigator in Archaeology
SWCA, Inc. Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021

7.0 REFERENCES

Burns & McDonnell (BMCD), 2018. Draft Installation Development Plan - United States Air Force Academy, Colorado (July) (to be finalized 2019)

City for Champions (C4C), Get the Facts, Gateway Visitor Center. http://www.cityforchampions.com/wp-content/uploads/2014/03/Fact-Sheet-Gateway-Visitor-Center-5-21.pdf

Colorado Department of Transportation (CDOT), 2003. Sustaining Nature and Community in the Pikes Peak Region, A Sourcebook for Analyzing Regional Cumulative Effects (December)

CDOT, 2004. Environmental Assessment, I-25 Improvements through the Colorado Springs Urbanized Area, Draft Section 4(f) Evaluation (March)

CDOT, 2012. Re-evaluation, Mileposts 149 to 161, Interstate 25 Improvements through the Colorado Springs Urbanized Area, Environmental Assessment (June)

Colorado Natural Heritage Program (CNHP), 2012. US Air Force Academy Biological Inventory.

Colorado Natural Heritage Program (CNHP), 2015. Integrated Noxious Weed Management Plan.

Colorado Parks and Wildlife (CPW), 2016. Raptor Monitoring Handbook (April)

Colorado Parks and Wildlife (CPW), 2019. Colorado Parks and Wildlife Threatened and Endangered List. Accessed at https://cpw.state.co.us/learn/Pages/SOC-ThreatenedEndangeredList.aspx. In January 2019.

Department of Defense, 2002. federal Register, 32 CFR Part 651 Environmental Analysis of Air Force Actions; Final Rule Part II (March 29)

Economic & Planning Systems (EPS) Memorandum, 2017. Estimated Market Values and Assumptions for USAFA EUL (November 6)

Environmental Laboratory, 1987. Corps of Engineers Wetlands Delineation Manual.

federal Transit Administration (FTA), 2018. Transit Noise and Vibration Impact Assessment Manual (September)

Matrix Design Group (Matrix), 2016. Final Monument Creek Watershed Restoration Master Plan (November)

Matrix Design Group (Matrix), 2019. TrueNorth Commons Design Guidelines – United States Air Force Academy, Colorado Springs, Colorado (February)

National Invasive Species Control (NISC), 2005. EO 13112: Invasive Species.
Pikes Peak Area Council of Governments (PPACG), 2013. Air Quality in the Pikes Peak Region – Monitoring and Trends Report (November)

U.S. Air Force Academy (USAFA), Updated 2005, Air Installation Compatible Use Zone Study, United States Air Force Academy, Aardvark auxiliary Airfield, and Bullseye Auxiliary Airfield, Colorado.

U.S. Air Force Academy (USAFA), 2019. USAFA Standards, Section 01351: Erosion Control, Revegetation and Tree Care Standards.

U.S. Air Force Academy (USAFA), 2018. U.S. Air Force Integrated Natural Resources Management Plan, U.S. Air Force Academy, Colorado Springs, Colorado (February)

U.S. Air Force, (2004). Environmental Center - Guide to Environmental Impact Analysis, A Supplement to the U.S. Air Force NEPA Manual Series (February)

U.S. Air Force (2007). Environmental Command - NEPA Analysis Guidance Manual (May)

U.S. Air Force (2012). Headquarters Air Force Center for Engineering and the Environment (AFCEC). Integrated Cultural Resources Management Plan, United States Air Force Academy, El Paso County, Colorado (March) (to be updated 2019)

U.S. Army Corps of Engineers (2007). Jurisdictional Determination Form Instructional Guidebook (May 30)

U.S. Environmental Protection Agency (EPA). 1974. Information levels of environmental noise requisite to protect public health and welfare with an adequate margin of safety. EPA/ONAC 550/9-74-004.

U.S. Environmental Protection Agency (EPA), 2014. 2014 National Emission Inventory Data. Accessed at https://gispub.epa.gov/neireport/2014/. In February 2019.

U.S. Department of the Interior, Geological Survey (USGS), 1969. General and Engineering Geology of the Northern Part of Pueblo, Colorado, Geological Survey Bulletin 1262

U.S. Fish and Wildlife Service (USFWS), 2008. Birds of Conservation Concern. Division of Migratory Bird Management, Arlington, VA.