



# United States Air Force Academy

---

Environmental Assessment  
for the Construction and Operation of a New Facility to  
House the Center for Character and Leadership  
Development Program

06/30/2010

| Report Documentation Page                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    |                                     |                                                           | Form Approved<br>OMB No. 0704-0188                  |                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------|-----------------------------------------------------------|-----------------------------------------------------|---------------------------------|
| Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. |                                    |                                     |                                                           |                                                     |                                 |
| 1. REPORT DATE<br><b>30 JUN 2010</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    | 2. REPORT TYPE                      |                                                           | 3. DATES COVERED<br><b>00-00-2010 to 00-00-2010</b> |                                 |
| 4. TITLE AND SUBTITLE<br><b>Environmental Assessment for the Construction and Operation of a New Facility to House the Center for Character and Leadership Development Program</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                                     |                                                           | 5a. CONTRACT NUMBER                                 |                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                     |                                                           | 5b. GRANT NUMBER                                    |                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                     |                                                           | 5c. PROGRAM ELEMENT NUMBER                          |                                 |
| 6. AUTHOR(S)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                    |                                     |                                                           | 5d. PROJECT NUMBER                                  |                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                     |                                                           | 5e. TASK NUMBER                                     |                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                     |                                                           | 5f. WORK UNIT NUMBER                                |                                 |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)<br><b>10 Civil Engineer Squadron (45 CES/CEV),8120 Edgerton Drive,USAF Academy,CO,80840</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                    |                                     |                                                           | 8. PERFORMING ORGANIZATION REPORT NUMBER            |                                 |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |                                     |                                                           | 10. SPONSOR/MONITOR'S ACRONYM(S)                    |                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                     |                                                           | 11. SPONSOR/MONITOR'S REPORT NUMBER(S)              |                                 |
| 12. DISTRIBUTION/AVAILABILITY STATEMENT<br><b>Approved for public release; distribution unlimited</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                    |                                     |                                                           |                                                     |                                 |
| 13. SUPPLEMENTARY NOTES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |                                     |                                                           |                                                     |                                 |
| 14. ABSTRACT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                    |                                     |                                                           |                                                     |                                 |
| 15. SUBJECT TERMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                    |                                     |                                                           |                                                     |                                 |
| 16. SECURITY CLASSIFICATION OF:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                     | 17. LIMITATION OF ABSTRACT<br><b>Same as Report (SAR)</b> | 18. NUMBER OF PAGES<br><b>56</b>                    | 19a. NAME OF RESPONSIBLE PERSON |
| a. REPORT<br><b>unclassified</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | b. ABSTRACT<br><b>unclassified</b> | c. THIS PAGE<br><b>unclassified</b> |                                                           |                                                     |                                 |

**FINAL**  
**FINDING OF NO SIGNIFICANT IMPACT (FONSI)**  
**For the Construction and Operation of a New Facility**  
**To House the Center for Character and Leadership Development Program**  
**United States Air Force Academy**

Pursuant to the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] (1500-1517), Air Force Instruction (AFI) 32-7061, and the Environmental Impact Analysis Process (EIAP), as promulgated in Title 32 CFR Part 989. Title 32 CFR 989, the U.S. Air Force Academy (USAF or Academy) has prepared an Environmental Assessment (EA) of potential environmental effects associated with construction and operation of a new facility to house the Center for Character and Leadership Development (CCLD) program at the Academy.

**PURPOSE AND NEED**

The Academy proposes to construct a new facility to house the Character and Leadership Development program (the program) to be located within the grounds of the Academy Cadet Area. The purpose of the Proposed Action is to create a facility that is dedicated to focusing efforts of character and leadership development throughout all aspects of the Academy experience.

The Proposed Action is needed because the current facilities are inadequate for the ongoing operations of the current the program, which is the foundation for the future leaders of the US Air Force. The program is expanding, which entails a mission increase (adding a Scholarship Division for research and assessment) and increased manning. A new facility is required to accommodate the expanding the program and set the standard of excellence demanded of such a vital organization. The existing program is located in three different buildings and has only 48% of the square footage required for the current training mission. It also conducts 40% of its cadet seminars (approximately 65 per year) outside the Cadet Area due to facility limitations, at a cost of approximately \$70,000 per year. This situation creates a transportation cost, causes cancellations during inclement weather, and more importantly adds about one hour of unproductive travel time for over 2,300 junior and senior cadets each year. This fragmentation and lack of space impedes operational effectiveness and reduces efficiency of the program.

**DESCRIPTION OF THE PREFERRED ALTERNATIVE**

The Preferred Alternative would construct an approximate 46,000 square foot facility within the Cadet and public accessible area of the Academy on a portion of the Honor Court and the existing landscaped courtyard area just south of Arnold Hall. Sustainable principles will be integrated into the design, development, and construction of the project in accordance with EO 13423 and other applicable laws and Executive Orders. This project complies with DoD force protection requirements per DoD Unified Facilities Criteria 4-010-01 and the Energy Independence and Security Act (EISA) of 2007. This facility will be in EISA compliant (Section 434) by employing the most energy efficient design, system equipment and controls that are life-cycle cost effective. All construction will be accomplished on a 7-foot extended-grid pattern to match US Air Force Academy international style architectural requirements to be consistent with the architecture of the existing Cadet Area (a National Historic Landmark District (NHLD)).

**ALTERNATIVES CONSIDERED**

**Alternative 2.** The Academy considered constructing the new facility between Vandenberg Hall and Arnold Hall. Construction activities would be similar to the activities involved in the Preferred Alternative with the addition of construction activities needed to create public access. This particular siting is confined by Anti-terrorism/Force Protection (AT/FP) space requirements and is also within the Chapel View Corridor, a protected corridor view discussed with Mr. Walter Netsch, original architect of the Academy, in describing the reasons supporting the renowned architecture that makes the Academy design internationally important.



**Other Alternatives Considered but Eliminated from Further Study.** There was one other siting alternative considered (Alternative 3). This alternative would place the new facility under the honor court resulting in an underground facility. The underground building siting location was deemed non-acceptable for structures located in the Cadet Area, in accordance with Academy Design Standards and 13 guiding principles. Additionally, after further analysis by the development team, it was not in the "L" shaped area that was determined to be both efficiently accessible to the Cadets and the public participants of the CCLD program.

**No-Action Alternative.** The No Action Alternative is included as required by the CEQ regulations to identify the existing baseline conditions against which potential impacts are evaluated. The No Action Alternative must be described because it is the baseline condition or the current status of the environment.

## ENVIRONMENTAL IMPACTS SUMMARY

Ten environmental and socioeconomic resource areas were characterized and evaluated for potential impacts for Preferred Alternative. No potential impacts were classified as significant. Implementation of the proposed action at the Preferred Alternative would result in minor, short-term impacts to air quality due to construction activities, minor, short-term and long-term negative impacts to geology and soils, water resources, and, hazardous and toxic materials. Positive impacts would result from the implementation of the Preferred Alternative for land use, socioeconomic, transportation, and utilities. No impacts to biological or cultural resources are anticipated for the Preferred Alternative. The Preferred Alternative, when combined with other past, present, and reasonably foreseeable future projects in the general vicinity, would not result in significant cumulative impacts. Mitigation measures for Water Resources and Hazardous Waste are required for the Preferred Alternative. Specific concerns are addressed below.

**Land Use** – The Preferred Alternative implementation will create a positive impact of land being used according to the Master Plan.

**Water Resources** – No cumulative impacts to surface water or floodplains would occur from implementation of the Preferred Alternative. Minimal short-term impacts to stormwater would be minimized through design and post construction BMP's.

**Biological Resources** – The Preferred Alternative would not impact vegetation, wildlife, threatened and endangered species or wetlands.

**Geology and Soils** – Potential for soil erosion exists during construction and should be minimized to insignificance through use of Best Management Practices.

**Socioeconomic Resources** – The Preferred Alternative would have minor long-term impacts related to loss of income/employment related to seminars that were previously conducted off-site at commercial facilities.

**Air Quality** – Minor, temporary, short-term impacts from air emissions during construction activity would occur also with minor impacts due to operational activities. There would be no cumulative impacts with the implementation of the Preferred Alternative.

**Cultural Resources** – The Preferred Alternative will not impact Cultural Resources.

**Utilities** - Minimal short-term impacts and construction of a LEED facility will provide environmentally positive long term impacts resulting in the reduction of use of electricity and water.

**Hazardous and Toxic Substances** – Minor, short-term impacts during construction are expected with the implementation of the Preferred Alternative. Minor, long-term impacts related to solid-waste and use of hazardous materials during operations will be managed to insignificance through inclusion in the USAFA Hazardous Waste Management Plan.

**Transportation** – Short-term, minor impacts during construction from increase in traffic along USAFA roadways. The Preferred Alternative offers a positive long-term-cumulative impact due to reduction in Cadet commuting requirements to off-site activities.

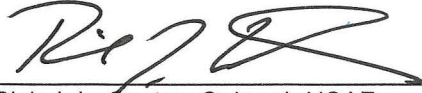


## DECISION

Direct, indirect, and cumulative impacts of the Preferred Alternative have been considered. No significant adverse impacts from the Preferred Alternative were identified. Mitigations for Water Resources and Hazardous Waste during construction and operation must be addressed through Best Management Practices to make the impacts insignificant. The issuance of a FONSI is warranted, and preparation of an environmental impact statement is not required.

Signature:

Approved by:

  
Rick J. LoCastro, Colonel, USAF  
Commander, 10<sup>th</sup> Air Base Wing

1 Aug 10  
Date

# TABLE OF CONTENTS

|                                                                                              |           |
|----------------------------------------------------------------------------------------------|-----------|
| <b>SECTION 1- PURPOSE AND NEED FOR THE PROPOSED ACTION .....</b>                             | <b>1</b>  |
| 1.1 PURPOSE AND NEED FOR ACTION .....                                                        | 1         |
| 1.2 LOCATION OF THE PROPOSED ACTION .....                                                    | 1         |
| 1.3 SCOPE OF ENVIRONMENTAL REVIEW .....                                                      | 5         |
| 1.4 SITE SELECTION CRITERIA .....                                                            | 5         |
| 1.5 IDENTIFICATION OF BIOPHYSICAL RESOURCES APPLICABLE TO THE ENVIRONMENTAL ASSESSMENT ..... | 6         |
| 1.6 APPLICABLE REGULATORY REQUIREMENTS .....                                                 | 6         |
| 1.7 PUBLIC INVOLVEMENT .....                                                                 | 6         |
| <b>SECTION 2- DESCRIPTION OF ALTERNATIVES .....</b>                                          | <b>7</b>  |
| 2.1 BACKGROUND .....                                                                         | 7         |
| 2.2 HISTORY OF FORMULATION OF ALTERNATIVES .....                                             | 9         |
| 2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED .....                                             | 9         |
| 2.4 DETAILED DESCRIPTION OF ALTERNATIVE 2. ....                                              | 10        |
| AREA BETWEEN VANDENBERG HALL AND ARNOLD HALL .....                                           | 10        |
| 2.5 DESCRIPTION OF THE NO-ACTION ALTERNATIVE .....                                           | 10        |
| 2.6 IDENTIFICATION OF THE PREFERRED ALTERNATIVE .....                                        | 10        |
| 2.7 SUMMARY OF COMPARISON OF ALTERNATIVES .....                                              | 11        |
| <b>SECTION 3- AFFECTED ENVIRONMENT .....</b>                                                 | <b>13</b> |
| 3.1 SUMMARY OF COMPARISON OF ALTERNATIVES .....                                              | 13        |
| 3.2 WATER RESOURCES .....                                                                    | 13        |
| 3.3 WATER RESOURCES .....                                                                    | 16        |
| 3.4 GEOLOGICAL RESOURCES .....                                                               | 19        |
| 3.5 SOCIOECONOMICS .....                                                                     | 20        |
| 3.6 AIR QUALITY .....                                                                        | 21        |
| 3.7 CULTURAL RESOURCES .....                                                                 | 23        |
| 3.8 UTILITIES .....                                                                          | 23        |
| 3.9 HAZARDOUS MATERIALS .....                                                                | 24        |
| 3.10 TRANSPORTATION .....                                                                    | 24        |
| <b>SECTION 4- ENVIRONMENTAL CONSEQUENCES .....</b>                                           | <b>26</b> |
| 4.1 LAND USE .....                                                                           | 26        |
| 4.2 WATER RESOURCES .....                                                                    | 27        |
| 4.3 BIOLOGICAL RESOURCES .....                                                               | 29        |
| 4.4 GEOLOGICAL RESOURCES .....                                                               | 29        |
| 4.5 SOCIOECONOMICS .....                                                                     | 30        |
| 4.6 AIR QUALITY .....                                                                        | 31        |
| 4.7 CULTURAL RESOURCES .....                                                                 | 34        |
| 4.8 UTILITIES .....                                                                          | 36        |
| 4.9 HAZARDOUS MATERIALS/SOLID WASTE .....                                                    | 36        |
| 4.10 TRANSPORTATION .....                                                                    | 37        |
| <b>SECTION 5- LIST OF PREPARERS .....</b>                                                    | <b>39</b> |
| <b>SECTION 6- CONSULTATION AND COORDINATION .....</b>                                        | <b>40</b> |
| <b>SECTION 7- REFERENCES .....</b>                                                           | <b>41</b> |
| <b>SECTION 8- ACRONYM LIST .....</b>                                                         | <b>42</b> |

## TABLE OF CONTENTS (CONTINUED)

|                                                               |           |
|---------------------------------------------------------------|-----------|
| <b>APPENDIX A: PHOTOGRAPHS .....</b>                          | <b>44</b> |
| <b>APPENDIX B: AGENCY CONSULTATION AND COORDINATION .....</b> | <b>48</b> |
| <b>APPENDIX C: DRAFT FINAL COMMENTS .....</b>                 | <b>67</b> |

## FIGURES

|                                                                                  |           |
|----------------------------------------------------------------------------------|-----------|
| <b>FIGURE 1-1. REGIONAL LOCATION MAP, U.S. AIR FORCE ACADEMY, COLORADO .....</b> | <b>2</b>  |
| <b>FIGURE 1-2. GENERAL VICINITY MAP FOR USAFA, COLORADO SPRINGS, CO .....</b>    | <b>3</b>  |
| <b>FIGURE 1-3. PROJECT LOCATION WITH USAFA BOUNDARIES .....</b>                  | <b>4</b>  |
| <b>FIGURE 2-1. AREA OF PREFERRED ALTERNATIVE AND ALTERNATIVE 2 .....</b>         | <b>8</b>  |
| <b>FIGURE 3-1. 100 YEAR FLOODPLAIN IN PROJECT VICINITY .....</b>                 | <b>15</b> |
| <b>FIGURE 3-2. PMJM HABITAT BUFFER ZONES WITHIN PROPOSED PROJECT AREA .....</b>  | <b>18</b> |



## **SECTION 1- PURPOSE AND NEED FOR THE PROPOSED ACTION**

This section has seven subsections: the purpose and need for the Proposed Action; the location of the Proposed Action; a summary of the scope of the environmental review; selection criteria for the Proposed Action; identification of the biophysical resources applicable to the environmental assessment; a listing of applicable regulatory requirements and public involvement.

### **1.1 PURPOSE AND NEED FOR ACTION**

The United States Air Force Academy (USAF or Academy) proposes to construct a new facility for the Center for Character and Leadership Development (CCLD) program. This new facility is to be located within the grounds of the Academy Cadet Area, a National Historic Landmark District (NHLD). The purpose of the Proposed Action is to create a facility in the Cadet Area that is dedicated to focusing efforts of character and leadership development throughout all aspects of the Academy experience.

The Proposed Action is needed because the current facilities are inadequate for the ongoing operations of the CCLD program, which is the foundation for the future leaders of the US Air Force. The CCLD program is expanding, which entails a mission increase (adding a Scholarship Division for research and assessment) and increased manning. A new facility is required to accommodate the expanding CCLD program and set the standard of excellence demanded of such a vital organization. The CCLD program mission is to facilitate character and leadership development programs and activities throughout all aspects of the Academy experience. The existing CCLD program is located in three different buildings and has only 48% of the square footage required for the current training mission. It also conducts 40% of its cadet seminars (approximately 65 seminars per year) outside the Cadet Area due to facility limitations, at a cost of approximately \$70,000/year. This situation creates a transportation cost, causes cancellations during inclement weather, and more importantly adds about one hour of unproductive travel time for over 2,300 junior and senior cadets each year. This fragmentation and lack of space impedes operational effectiveness, efficiency and jeopardizes overall command and control of the CCLD program.

### **1.2 LOCATION OF THE PROPOSED ACTION**

The Academy is located 6 miles north of Colorado Springs and 60 miles south of Denver (Figure 1-1, Figure 1-2, Figure 1-3). Slightly more than 19,000 acres are owned by the U.S. Air Force. Approximately 18,500 acres are dedicated to the mission of the Academy and 650 acres are known as Farish Memorial Recreational Annex. The Academy is bordered by residential development to the north and south, commercial, industrial, and residential development to the east, and National Forest land to the west.

# CCLD Regional Location

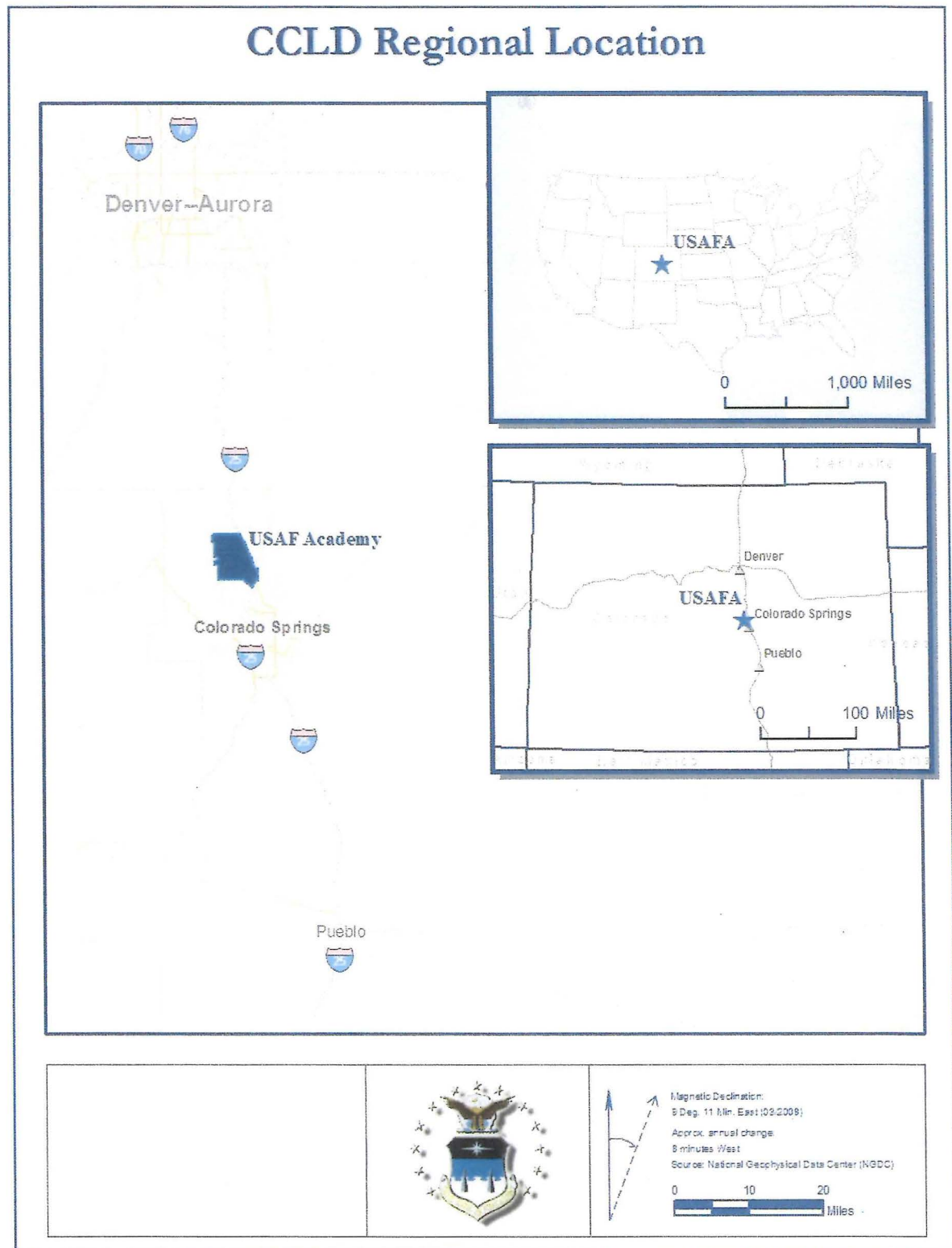


Figure 1-1  
Regional Location Map, U.S. Air Force Academy, Colorado



## USAFA and Colorado Springs Vicinity

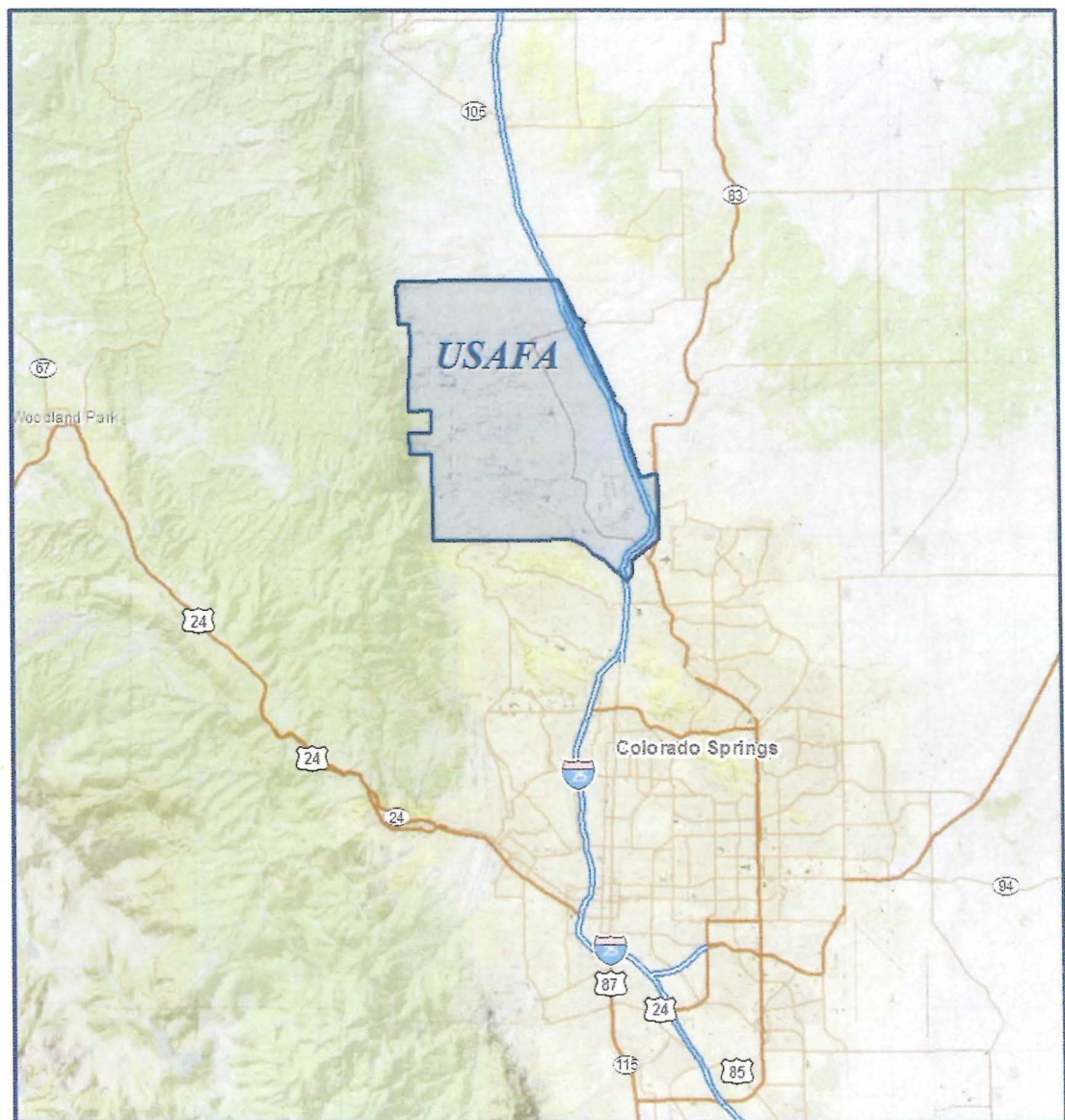


Figure 1-2  
General Vicinity Map for USAFA, Colorado Springs, Colorado



## CCLD Proposed Location

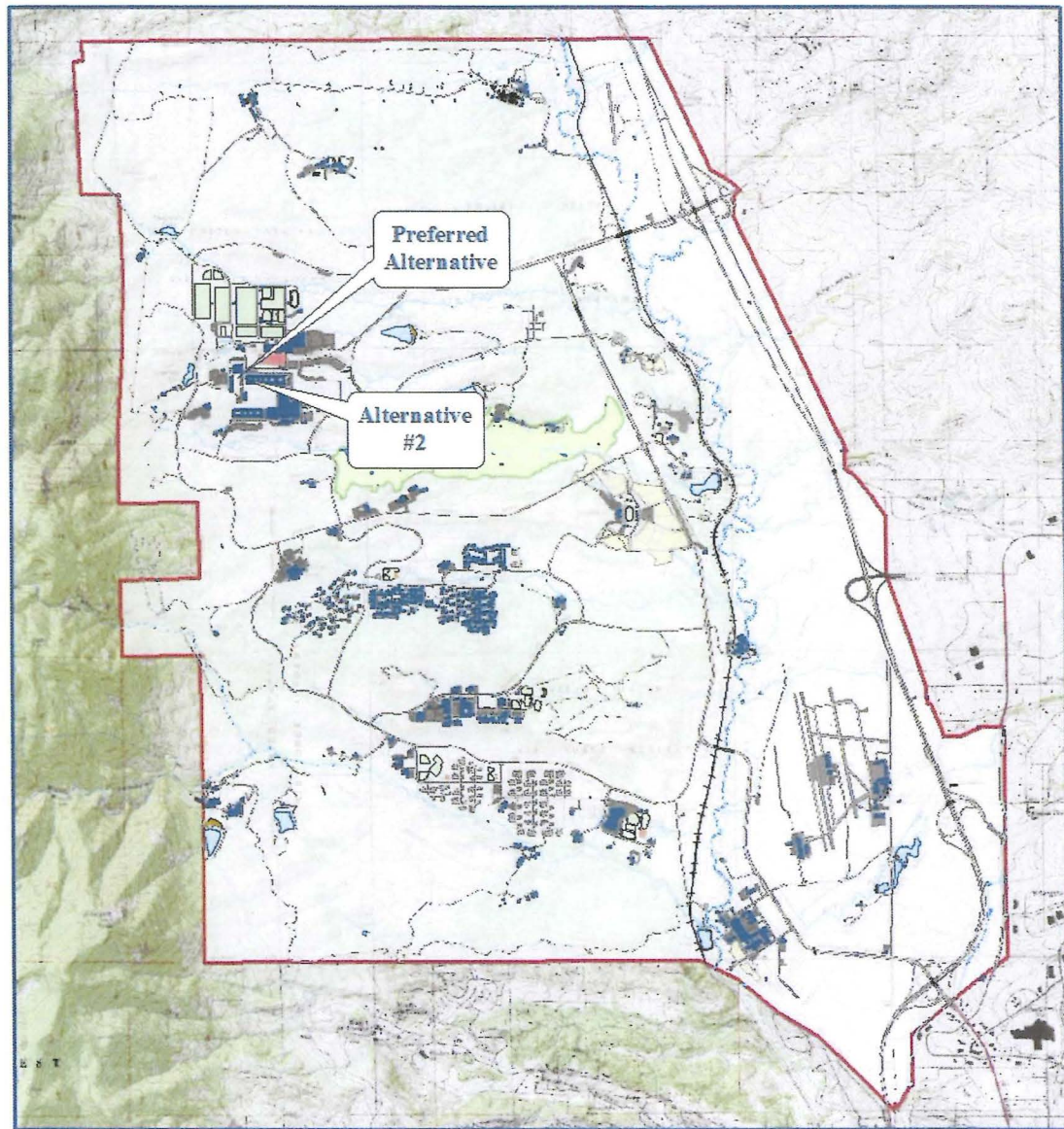


Figure 1-3  
Project Location with USAFA Boundaries



### 1.3 SCOPE OF ENVIRONMENTAL REVIEW

The Academy has prepared this Environmental Assessment (EA) to assess the potential environmental impacts resulting from construction of, and operation of, a new facility within the Cadet Area.

This environmental analysis has been conducted in accordance with the President's Council on Environmental Quality (CEQ) regulations, Title 40 of the Code of Federal Regulations (CFR) §§ 1500-1508, as they implement the requirements of the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §4321, et seq., Air Force Instruction (AFI) 32-7061, The Environmental Impact Analysis Process (EIAP), as promulgated in Title 32 CFR Part 989. Title 32 CFR 989 addresses implementation of NEPA and directs Air Force officials to consider environmental consequences as part of the planning and decision-making process. These regulations require federal agencies to analyze the potential environmental impacts of the Proposed Action and alternatives and to use these analyses in making decisions on a Preferred Alternative. Cumulative effects of other ongoing activities also must be assessed in combination with the Preferred Alternative. The CEQ was instituted to oversee federal policy in this process. The CEQ regulations declare that an EA is required to accomplish the following objectives:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).
- Aid in an agency's compliance with NEPA when an EIS is not necessary and facilitate preparation of an EIS when necessary.

AFI 32-7061, as promulgated in Title 32 CFR 989, specifies procedural requirements for the implementation of NEPA and preparation of the EA. This EA also identifies other environmental regulatory requirements relevant to the Proposed Action and alternatives. Regulatory requirements under the following programs, among others, will be assessed: Noise Control Act of 1972; Clean Air Act (CAA); Clean Water Act (CWA); National Historic Preservation Act (NHPA); Endangered Species Act of 1973; Resource Conservation and Recovery Act (RCRA); Toxic Substances Control Act (TSCA) of 1970; and Occupational Safety and Health Act. Requirements also include compliance with Executive Order (EO) 11988, Floodplain Management; EO 12423; EO 11990, Protection of Wetlands; EO 12898, Environmental Justice; EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management.

This EA evaluates the potential environmental impacts that may result from the implementation of the Proposed Action as well as possible cumulative impacts from other actions planned for the Academy. The EA also identifies required environmental permits relevant to the Proposed Action. As appropriate, the affected environment and environmental consequences of the Proposed Action may be described in terms of site specific descriptions or regional overview. Finally, the EA identifies mitigation measures to prevent or minimize environmental impacts, as well as cumulative and long term impacts.

### 1.4 SITE SELECTION CRITERIA

The following criteria were determined to be critical to achieve the purpose of the proposed activity:

- The facility should be large enough to accommodate the majority of activities associated with the current CCLD program while meeting Anti-Terrorism/Force Protection (AT/FP) standards.
- The building should be located in an area that allows for sufficient access for both unescorted public participants and the cadets and minimizes travel time to attend scheduled activities for the cadets.
- The building should be designed and located so that it will not adversely affect the view shed or view corridors (as discussed between Mr. Walter Netsch, original design architect of the Academy and the current Academy design architect, Mr. Duane Boyle)) or the historic context of the Cadet Area, a National Historic Landmark District (NHLD).

## **1.5 IDENTIFICATION OF BIOPHYSICAL RESOURCES APPLICABLE TO THE ENVIRONMENTAL ASSESSMENT**

The following biophysical resources were identified for study at the Academy: land use, water resources, biological resources, geological resources, socioeconomics, air quality, cultural resources, hazardous and solid waste, utilities, and transportation.

Initial environmental analyses indicated that the proposed activities would not result in either short- or long-term impacts to the Air Installation Compatible Use Zone program (AICUZ), or noise. The Proposed Action would not involve any aircraft or result in any aircraft operations, nor would it result in any change to existing and planned aviation activities in the vicinity of the new facility. For this reason, accident potential, encroachment, airspace, and airfield operations are not evaluated further in this EA.

## **1.6 APPLICABLE REGULATORY REQUIREMENTS**

The regulatory permits applicable to the Proposed Action are the National Pollutant Discharge Elimination System (NPDES) Construction General Permit COR10000F for construction activities disturbing more than one acre. Air Quality permits and the use of Certified Asbestos Abatement and Lead-Based Paint Abatement personnel for construction activities may be required. The Proposed Action may require environmental permits and amendments to existing permits. The construction contractor would be responsible for ensuring that applicable permits are identified and obtained from base, local, state, and federal agencies.

## **1.7 PUBLIC INVOLVEMENT**

The Academy invites public participation in the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decision making. All agencies, organizations, and members of the public having a potential interest in the Proposed Action (all alternatives) are urged to participate in the decision-making process.

Public participation opportunities with respect to this EA and decision-making on the Proposed Action are guided by 32 CFR Part 651. This Draft EA will be available to the public for 30 days. At the end of the 30-day public review period, the Academy will consider all comments submitted by individuals, agencies, or organizations on the Proposed Action in the Draft Final EA.

A Notice of Availability (NOA) will be published in the Colorado Springs Gazette, The Tri-Lakes Tribune, and the Academy Spirit which announces the beginning of the 30-day public review period. The Draft EA is available for review during the public comment period at the following local public libraries:

Pikes Peak District Main Library, 5 Cascade Street, Colorado Springs, CO; The 10th ABW Library, 5136 Redtail Dr, Suite H103, USAFA, CO and the USAFA McDermott Library, 2354 Fairchild Drive, Suite 3A10, USAF Academy, CO 80840-6214. Comments received via email must contain the name and address of the person submitting the comments.

Reviewers are invited to submit comments on the Draft EA during the 30-day public comment period via mail, fax, or e-mail to the following:

10 CES/CEV  
8120 Edgerton Drive  
U.S. Air Force Academy, CO 80840  
Fax: 719.472.9295  
[10CES.cevenvironmental@usafa.af.mil](mailto:10CES.cevenvironmental@usafa.af.mil)

**Comments received will be addressed within the Final EA.**



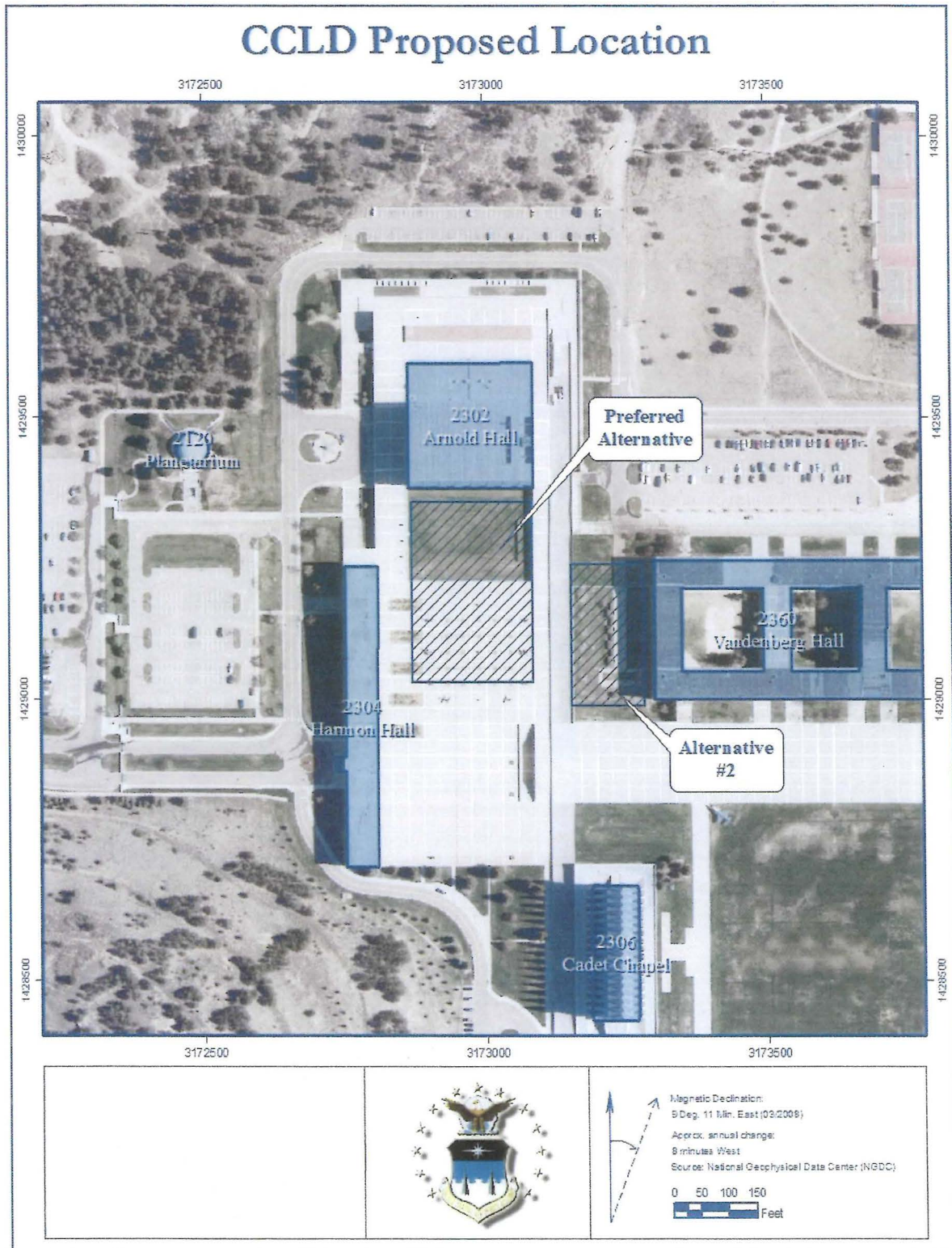
## **SECTION 2- DESCRIPTION OF ALTERNATIVES**

This section describes the alternatives and provides a comparison summary of the environmental impacts of each. Section 2.1 and Section 2.2 describe the background and history of formulation of the alternatives. Section 2.3 describes those alternatives considered, but eliminated from further consideration. Sections 2.4-2.6, describe the Alternatives selected for analyses, Section 2.7 identifies the Preferred Alternative, and Section 2.8 summarizes the environmental consequences of each alternative evaluated in the EA.

### **2.1 BACKGROUND**

Currently the CCLD Program occupies space in both Vandenberg Hall, Fairchild Hall and at the adventure-based learning facility northwest of Arnold Hall. This creates a split operation detrimental to USAFA's number one program. There is no existing facility, which is not already utilized, available to provide the CCLD program with space and flexibility to become one of the nation's leading think tanks for character and leadership development. The existing CCLD program has 48% of the square footage required for the current training mission, in three separate buildings. In addition, there is a lack of dedicated seminar space for the program resulting in the use of banquet rooms in Arnold Hall on a competitive basis with other USAFA needs. Even with the use of the Arnold banquet rooms, additional space is also required from local hotels and at Doolittle Hall, the headquarters of the USAFA Association of Graduates. This creates further disconnects within the program elements. Continuing to use existing space does not satisfy program functionality and vision.

**Figure 2-1  
Area of the Preferred Alternative and Alternative 2**



**Figure 2-1. Area of the Preferred Alternative and Alternative 2.**



## 2.2 HISTORY OF FORMULATION OF ALTERNATIVES

A series of meetings between a jury of advisors and stakeholders resulted in two proposals (Alternative 1 and Alternative 2) for construction of a new facility to house the CCLD program. The difference between the two options was the siting location of the building (See Figure 2-1).

## 2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED

The USAFA enlisted a detailed analysis for consideration of other alternatives for both construction and building design. Building construction siting alternatives consisted of a search within the Cadet Area where new construction would support efficient cadet access and available public access. The design basis of the new facility was to focus on a symbolic representation of the CCLD Program and remain within the General Plan and USAFA Design Standards. The design was developed through a competition within the Skidmore, Owings, and Merrill (SOM) offices (the original designer of the USAFA) and the proposed design was selected by a jury of advisors and stakeholders.

There was one other siting alternative considered (Alternative 3): Beneath the existing honor court, east of Harmon Hall, resulting in an underground facility. The underground building siting was deemed non-acceptable for structures located within the Cadet Area, in accordance with USAFA Design Standards and 13 guiding principles. Additionally, after further analysis by the development team, it was not in the "L" shaped area that was determined to be both efficiently accessible to the Cadets and the Public participants of the CCLD program.

Alternative 3 does not meet all the proposed site evaluation criteria and will not be considered in subsequent sections of this analysis.

Alternative 1, Alternative 2, and the No Action Alternative will be considered further in the remaining sections of this document.

**Site Description:** The site of the new facility would be constructed on a portion of the Honor Court and the existing landscaped courtyard area just south of Arnold Hall. The existing site consists of landscaped grass, trees, concrete walkways, and partial re-use of Arnold Hall facilities.

This location provides a visual presence that is symbolic of the primary function of the Academy: Character and Leadership Development. This location also provides excellent access for both Cadets and the public participants of the CCLD program.

**Building Description:** Alternative 1 would construct an approximately 46,629 square foot facility built on reinforced concrete footings, concrete slab foundation, steel column and beam structure, aluminum/granite wall system and membrane roof system with exposed aggregate paving. Construction plans include a skylight pylon that consists of a steel frame with glass panels over a general forum. Plans also include an open air terrace that will contain landscape trees, sod and reflecting pools surrounding the general forum. The facility includes security, fire detection/suppression systems, utilities, and support requirements. (See Photograph #1 in Appendix A.)

This project has been sited according to the design and guiding principles of the US Air Force Academy General Plan (2005). This project meets the criteria and scope specified in Air Force Handbook (AFH) 32-1084, "Facility Requirements." Sustainable principles will be integrated into the design, development, and construction of the project in accordance with EO 13423 and other applicable laws and Executive Orders. This project complies with DoD force protection requirements per DoD Unified Facilities Criteria 4-010-01 and the Energy Independence and Security Act (EISA) of 2007. This facility will be in EISA compliance (Section 434) by employing the most energy efficient design, system equipment, and controls that are life-cycle cost effective. The CCLD will be designed to a Leadership in Energy and Environmental Design (LEED)-Platinum Standard. The sustainability strategy of the preliminary design includes the use of the following elements with their predicted energy savings: photovoltaic cells (8%), thermal roof mass (+/- 5%), earth tubes (+/- 12%), solar chimney (+/- 20%), evaporative cooling (2%), and natural lighting (18%). Thirty percent of hot water requirements will be gained through solar heating if life-

cycle cost effective (Section 523) and geo-thermal, photovoltaic and energy-reducing systems will be used in the construction of this facility (DoD Form 1391, November 2009).

All construction will be accomplished on a 7-foot extended-grid pattern to match US Air Force Academy international architectural style requirements to be consistent with the architecture of the existing Cadet Area, a National Historic Landmark District (NHLD).

### **2.3.1 CONSTRUCTION ACTIVITIES**

Construction of Alternative 1 would require site clearing and building construction as described herein. The proposed site for the new facility would be cleared of the honor court statues, seating elements, vegetation, and concrete. The maximum total area to be cleared would be approximately 1 acre. Additionally, the lower level courtyard grass area just south of Arnold Hall would need to be prepared for construction. Pre-building construction activities will generate a large amount of demolition debris consisting of concrete, steel, and excavated soil that will need to be transported, stored for future reuse, disposed of off-base, or recycled. Additionally, the area of construction will require storing of heavy equipment during non-work times. This equipment will consist of excavators, front end loaders, and dump trucks. During construction of the actual structure, construction equipment such as cranes will occupy the construction area.

## **2.4 DETAILED DESCRIPTION OF ALTERNATIVE 2. AREA BETWEEN VANDENBERG HALL AND ARNOLD HALL**

The USAFA considered constructing the new facility between Vandenberg Hall and Arnold Hall (See Figure 2-1). Construction activities would be similar to the activities in Section 2.4.1 with the addition of security elements required for access of public participants/facilitators of the CCLD program. In order to construct a large enough facility, AT/FP space requirements would be compromised. This siting is within the Chapel View Corridor established by the USAFA Master Plan (Skidmore, Owens and Merrill USAFA Master Plan, 1955). See the following aerial photograph and illustration of protected corridor views within the Cadet Area.

## **2.5 DESCRIPTION OF THE NO-ACTION ALTERNATIVE**

The No Action Alternative is included as required by the CEQ regulations to identify the existing baseline conditions against which potential impacts are evaluated. The No Action Alternative must be described because it is the baseline condition or the current status of the environment.

Under the No-Action Alternative the Academy would not construct a new facility and the daily operations of the existing CCLD program will become increasingly less effective and less efficient as the program evolves. Continuing to operate in the current situation with an unconsolidated facility, operations and training will continue to include a wide array of mission work-arounds, which are not desirable, effective nor efficient. Current facilities would continue to be used in ways not originally intended (dormitory space as office space).

## **2.6 IDENTIFICATION OF THE PREFERRED ALTERNATIVE**

The proposed action is to implement Alternative 1, as described in Section 2.4, and will herein be designated as the Preferred Alternative.



## 2.7 SUMMARY OF COMPARISON OF ALTERNATIVES

Table 2-1 provides a summary comparison of the alternatives (Preferred Alternative, Alternative 2, and No Action Alternative) with respect to the resource areas discussed in this EA.

**Table 2-1 Summary Comparison of Alternatives**

| Resources               | Preferred Alternative                                                                                                                                                  | Alternative 2                                                                                                                                                          | No-Action Alternative  |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Land Use                | Positive impact of land being used according to the Master Plan and increased efficiency of the CCLD program.                                                          | Long term impacts due to AT/FP spacing, Chapel View corridor axis.                                                                                                     | No impacts would occur |
| Water Resources         | No cumulative impacts to surface water or floodplains. Minimal short-term impacts to stormwater; minimized through design and post construction BMP's.                 | No cumulative impacts to surface water or floodplains. Minimal short-term impacts to stormwater; minimized through design and post construction BMP's.                 | No impacts would occur |
| Biological Resources    | No impacts to vegetation and wildlife from construction; no impacts to Threatened and Endangered Species; no impacts to wetlands                                       | No impacts to vegetation and wildlife from construction; no impacts to Threatened and Endangered Species; no impacts to wetlands                                       | No impacts would occur |
| Geology and Soils       | Potential for soil erosion during construction; minimized through use of Best Management Practices (BMPs), no long-term cumulative impacts.                            | Potential for soil erosion during construction; minimized through use of Best Management Practices (BMPs), no long-term cumulative impacts.                            | No impacts would occur |
| Socioeconomic Resources | Short-term positive impacts on local economy during construction; minor long-term impacts related to loss of income/employment related to seminars conducted off-site. | Short-term positive impacts on local economy during construction; minor long-term impacts related to loss of income/employment related to seminars conducted off-site. | No impacts would occur |
| Air Quality             | Minor, temporary, short-term impacts from air emissions from construction activity, potential minor impacts due to operational activities.                             | Minor, temporary, short-term impacts from air emissions from construction activity, potential minor impacts due to operational activities.                             | No impacts would occur |
| Cultural Resources      | No minor or long-term cumulative impacts.                                                                                                                              | Major impact due to siting within the Chapel view corridor axis and compromised AT/FP requirements.                                                                    | No impacts would occur |
| Utilities               | Minimal short-term impacts and environmentally positive long term impacts result from the benefits of a design of a LEED Platinum Standard facility                    | Minimal short-term impacts and environmentally positive long term impacts result from the benefits of a design of a LEED Platinum Standard facility                    | No impacts would occur |

| Resources                      | Preferred Alternative                                                                                                                                                                         | Alternative 2                                                                                                                                                                                 | No-Action Alternative  |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Hazardous and Toxic Substances | Minor, short-term impacts during construction. Minor, long-term impacts related to solid-waste and use of hazardous materials during operations.                                              | Minor, short-term impacts during construction. Minor, long-term impacts related to solid-waste and use of hazardous materials during operations.                                              | No impacts would occur |
| Transportation                 | Short-term, minor impacts during construction from increase in traffic. Positive long-term-cumulative impact (minor) due to reduction in Cadet commuting requirements to off-site activities. | Short-term, minor impacts during construction from increase in traffic. Positive long-term-cumulative impact (minor) due to reduction in Cadet commuting requirements to off-site activities. | No impacts would occur |

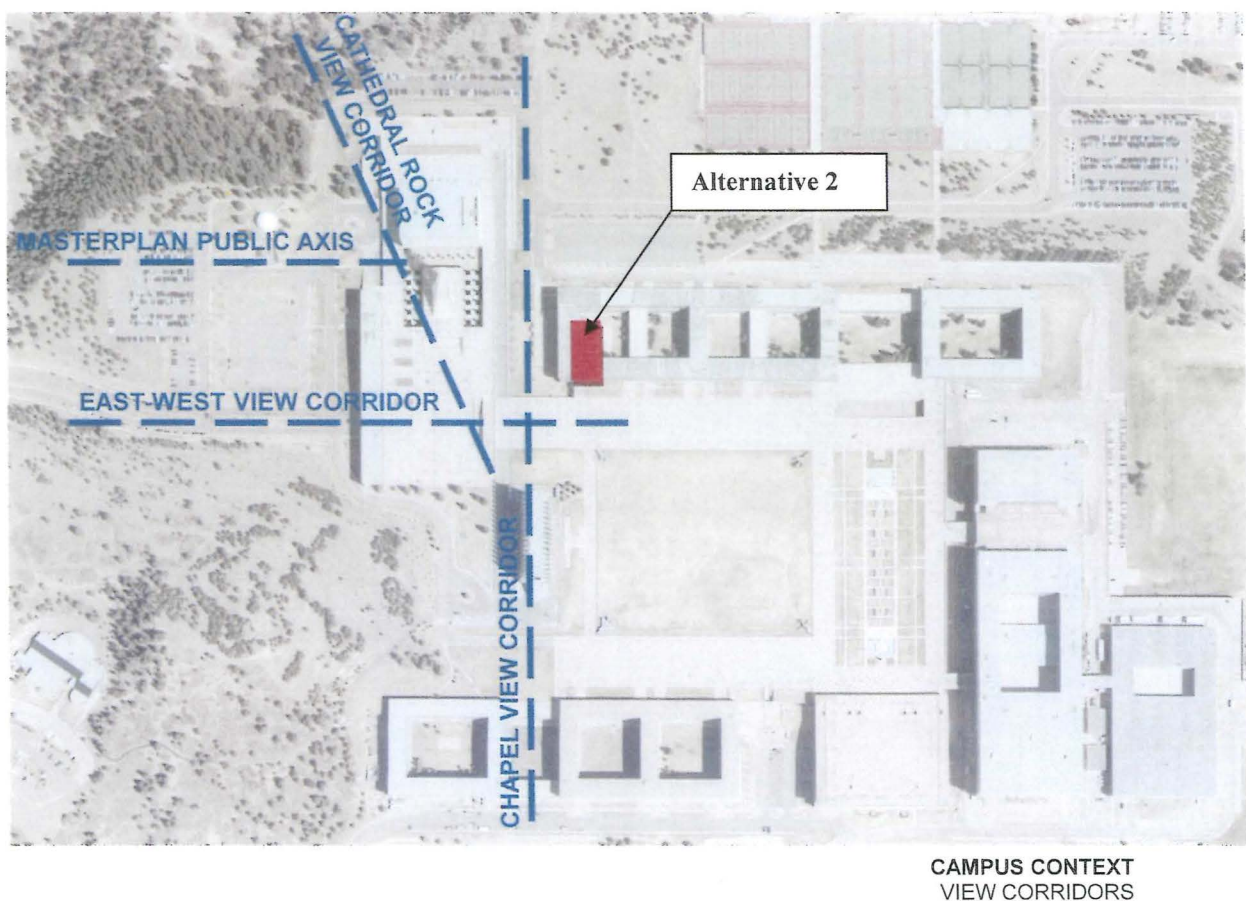


Figure 2.2  
Illustration of Corridor Views within the Cadet Area,  
(SOM presentation to NPS and SHPO)



## **SECTION 3 AFFECTED ENVIRONMENT**

### **3.1 SUMMARY OF COMPARISON OF ALTERNATIVES**

#### **3.1.1 LAND USE PLANS AND POLICIES**

To guide future development and land use decisions the Academy prepared a land use component to the General Plan (2005) for USAFA. The land use component identifies and analyzes functional relationships of organizational units and activities assigned to the Academy, and supports existing and future mission requirements by allocating or reserving land necessary to support ongoing and proposed operations.

#### **3.1.2 CURRENT LAND USE**

Existing land use on the Academy includes approximately 1,109 developed acres spread throughout the installation. The remaining 17,406 acres are composed of a variety of uses that include recreational, training, and conservation. The proposed facility is planned to be located at the current court of honor site which is designated in the General Plan (2005) as "Open Space (Designated)". The "Open Space (Designated)" category encompasses all outdoor uses that support the academic, military, and athletic programs.

#### **3.1.3 FUTURE LAND USE**

The Academy developed a future land use plan for the installation. Identifying land suitable for future development (usable land) is made possible by mapping all development constraints in a comprehensive fashion. To facilitate the base wide use of land in a manner supportive of general environmental objectives, the General Plan (2005) suggested the following policies and strategies that are applicable to the Preferred Alternative:

Accommodate any foreseeable development within the present Academy land holdings.

Accommodate all expected growth and change to the base and its facilities within the defined sub-areas. The sub-areas are broad in functional definition and contain land area to accommodate all foreseen Academy additions.

Maintain development edge boundaries for all sub-areas and specific function areas. "Creeping" development and ad hoc growth should be curtailed. The original concept of concentrated and controlled development, within a predominantly natural environment, should be maintained.

- Development should not occur outside specified area boundaries.
- Prohibit scattered facility construction.
- Prohibit street and roadway parking.

The Academy standard should provide for off-street parking in all areas. Existing deficiencies should be corrected. Consider alternative supplementary transportation for all areas within the base. Increasing demands on roadways, parking areas and land resources require consideration of shuttle bus, van or other transit alternatives as supplements to the individual automobile, particularly for visitors.

Maintain the visual quality of the approach sequence to the Academy sub-areas at the highest level. As evidenced by the approaches to the Cadet Area and the Community Center, dramatic views have been created through the native vegetation and up the rugged topography. Sensitivity to these views must be maintained throughout the Academy in order to preserve its majestic image.

### **3.2 WATER RESOURCES**

#### **3.2.1 SURFACE WATER**

Surface water drainages are among the most important natural resource features on the Academy. They represent areas of concentrated biodiversity, and various wildlife habitat values overlap in these areas. The predominant surface water feature on the base is Monument Creek, which runs from north to south on the east side of the Academy. The headwaters of Monument Creek originate from springs in the Rampart Range north and west of the Academy. Monument Creek serves as a refuge for several species

of rare plants and for the Preble's meadow jumping mouse (INRMP 2008).

The major surface water features in the vicinity of the Preferred Alternative are the Goat Camp Creek to the northwest, Deadman's Creek to the North and Lehman Run to the south. The Parade Loop tributary also extends to the east from the Cadet Area. These drainages traverse from west to east to their confluence with Monument Creek east of Stadium Blvd. All of these surface water features are at least 1000' from the Preferred Alternative.

These sub-watersheds are located within the larger Fountain Creek Watershed which drains into the Arkansas River. All of the above mentioned tributaries are ephemeral drainages (only convey flow during stormwater events) and are normally dry.

Currently, stormwater from the proposed project area is proposed to be collected into a storm drain system that appropriately takes the stormwater from the Cadet Area eastward through a stormwater conveyance system to Parade Loop Creek.

There are no springs located in the proposed project area.

### 3.2.2 FLOODPLAINS

Floodplains are defined by Executive Order 11988 (Floodplain Management), as lowland and relatively flat areas adjoining inland and coastal water that would be inundated by a 100-year flood. The proposed project areas are outside of the 100-year floodplain (Figure 3-1).



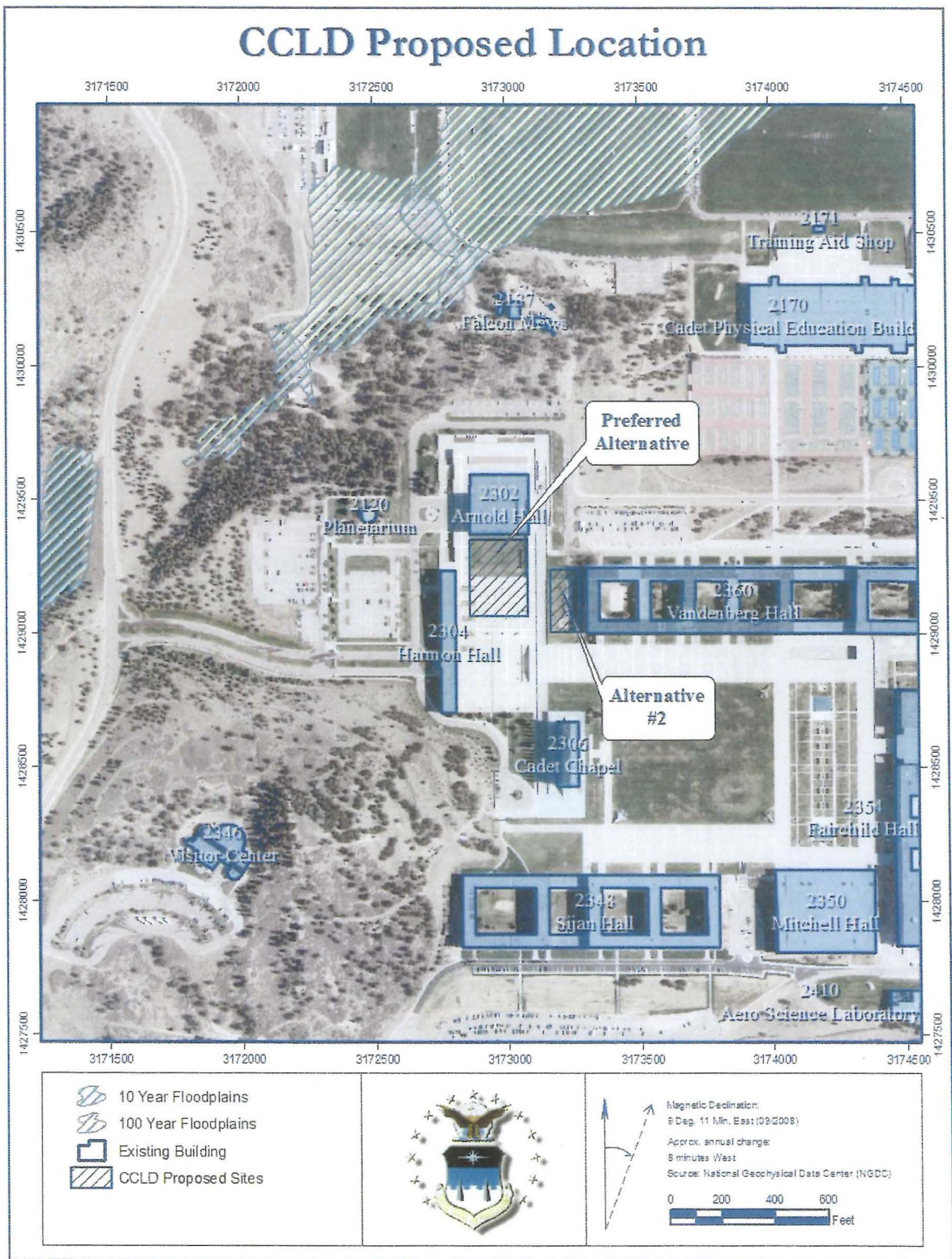


Figure 3-1  
100 year Floodplain in Project Vicinity



### 3.2.3 GROUND WATER

The Preferred Alternative ties onto the western edge of the Denver aquifer, which composes part of the larger Denver underground water basin. This basin is formed of several layers of aquifers that are each separated by a confining layer. The water present in these aquifers was deposited millions of years ago when the basin was formed. Due to lack of connectivity between aquifers and to surface water (infiltration or recharge of aquifer from surface water), ground water present in the aquifers is not considered renewable.

## 3.3 BIOLOGICAL RESOURCES

### 3.3.1 VEGETATION

The Academy is situated along the Rocky Mountain Front Range, which extends, in Colorado, from the Wyoming border to the Arkansas River at Pueblo. The Rampart Range, which forms the western boundary of the Academy, is a north-south trending uplift within the Front Range that extends from Platte Canyon near Denver south to Pikes Peak. The 14,110 foot Pikes Peak is about 10 miles southwest of the Academy. The Academy's location in a bioregional context is distinguished by the meeting of different physiographic regions.

The north boundary of the Academy is about 6 miles south of the Palmer Divide, an east-west trending ridge that separates the South Platte and Arkansas River drainages. This divide also separates the northern and southern ranges of many plant and wildlife species. This results in the overlap on the Academy of several species at either the northern or southern limits of their ranges. The Academy is also unique because it represents the Front Range transitional ecosystem where the Great Plains and Southern Rocky Mountain physiographic regions come together. These factors combine to contribute to the important diversity of plant and wildlife species at the Academy.

The Academy's Integrated Natural Resources Management Plan (INRMP 2008) describes the Academy's vegetation resources as significant because they encompass the elevation-related gradient from prairie grasslands to montane forests. The mosaic, or the pattern that the different plant communities create in relationship to one another, is a critical aspect of the biodiversity found at the Academy. Because the foothills are prime development areas along the Front Range, relatively intact foothills vegetation communities are declining in number and area. The Academy, along with Roxborough Park (about 50 miles to the north), represents one of the last remaining relatively "untouched" mature ponderosa pine, scrub oak habitat type on the Front Range. Fire is a known disturbance mechanism affecting the health and distribution of these vegetation communities.

The major compositional trend of the vegetation over time is toward an increased density of conifers, especially in the Montane zone. Forests that were originally open woodlands are now dense forests; and where vegetation was originally grassland, there are young populations of ponderosa pine. This trend is dramatic in many cases and is a widespread pattern throughout the west. Three factors that have contributed to this are a shift toward a more mesic climate, overgrazing by livestock, and fire suppression. There are many types of vegetative cover on the base driven by local site differences and hydrology, soils, topography, elevation, and aspect.

Diffuse knapweed and yellow toadflax, both state-listed noxious weeds, are widespread and abundant on the base. Other common herbaceous plants include hairy aster, sand dropseed, western wheatgrass, smooth brome, mountain muhly, cheatgrass, mullen, coyote willow, ragweeds, annual sunflower, and an assortment of early successional forbs (INRMP 2008). The vegetation in the area of the proposed development is perennial grasses and forbs.



### 3.3.2 WILDLIFE

Because of habitat diversity and preservation, more native wildlife species exist on the Academy than would be expected in an area of equivalent size and proximity to an urban center. For example, 247 (55%) of the 444 bird species found in Colorado occur at the Academy, and about 70 (56%) of the 125 mammal species known to occur in Colorado are found on the installation.

Factors contributing to the high biodiversity on the Academy are the topographic variation, the location at the convergence of north-south and plains-mountains transition zones, the presence of high quality riparian habitat, and the adjacency to the undeveloped forested expanses of the Pike National Forest. The large percentage of undeveloped natural areas on the base and the numerous vegetation types and their resulting mosaic, or pattern, provide a high degree of connectivity between habitat types and maintain essential migration routes for deer, elk, black bear, mountain lion, wild turkey, and other animals.

Monument Creek and its tributaries are important riparian habitats. These areas are important to wildlife, especially white-tailed deer, Preble's meadow jumping mouse, amphibians, and neotropical migratory birds. The highest diversity of species occurs in the riparian and shrub communities. Mature ponderosa pine stands with grass understory provide habitat for Abert's squirrel. Ridges and valleys that run west to east across the base are important travel corridors for wildlife. Most south-facing slopes are important feeding and warming areas for deer and elk. The north slopes of some ridges are used as bedding and thermal cover areas. Elk are most commonly observed in the northern half of the installation.

The Academy is home to mountain lions and black bears. Bears have become an increasing nuisance in housing areas and at other facilities. Sightings of mountain lions and bears have been infrequent, and no human-lion encounters have resulted in injury.

Additional animals that could be present in the project area include the following: mule and white-tail deer, black bear, mountain lion, small-footed bat, least chipmunk, several mouse species, cottontail rabbit, red fox, Gunnison's prairie dog, spotted ground squirrel, plains pocket gopher, western harvest mouse, and coyote. Common birds are wild turkey, broad-tailed hummingbird, Williamson's sapsucker, redtailed hawk, prairie falcon, scrub jay, rufus-sided towhee, and pygmy nuthatch. The shorthorned lizard, bullsnake, and western rattlesnake also occur in these areas (INRMP 2008).

### 3.3.3 THREATENED AND ENDANGERED SPECIES

No proposed or designated critical habitat occurs in the immediate area of the Preferred Alternative for a Federally-listed "threatened" species, the Preble's meadow jumping mouse (PMJM) that occurs elsewhere on the Academy. The Academy is known to support one of the largest and most stable populations of Preble's mice throughout its range. Preble's are most often found in dense, herbaceous riparian vegetation and closely adjacent uplands. Suitable habitat on the Academy, if delineated is 300 feet either side of the 100-year floodplain. Buffer zones for delineated habitat are found at Goat Camp Creek approximately 1,000 feet west of the Preferred Alternative (Figure 3-2). The project area is not currently suitable habitat because of extensive modification of the terrain from construction of the existing honor court area and plaza.

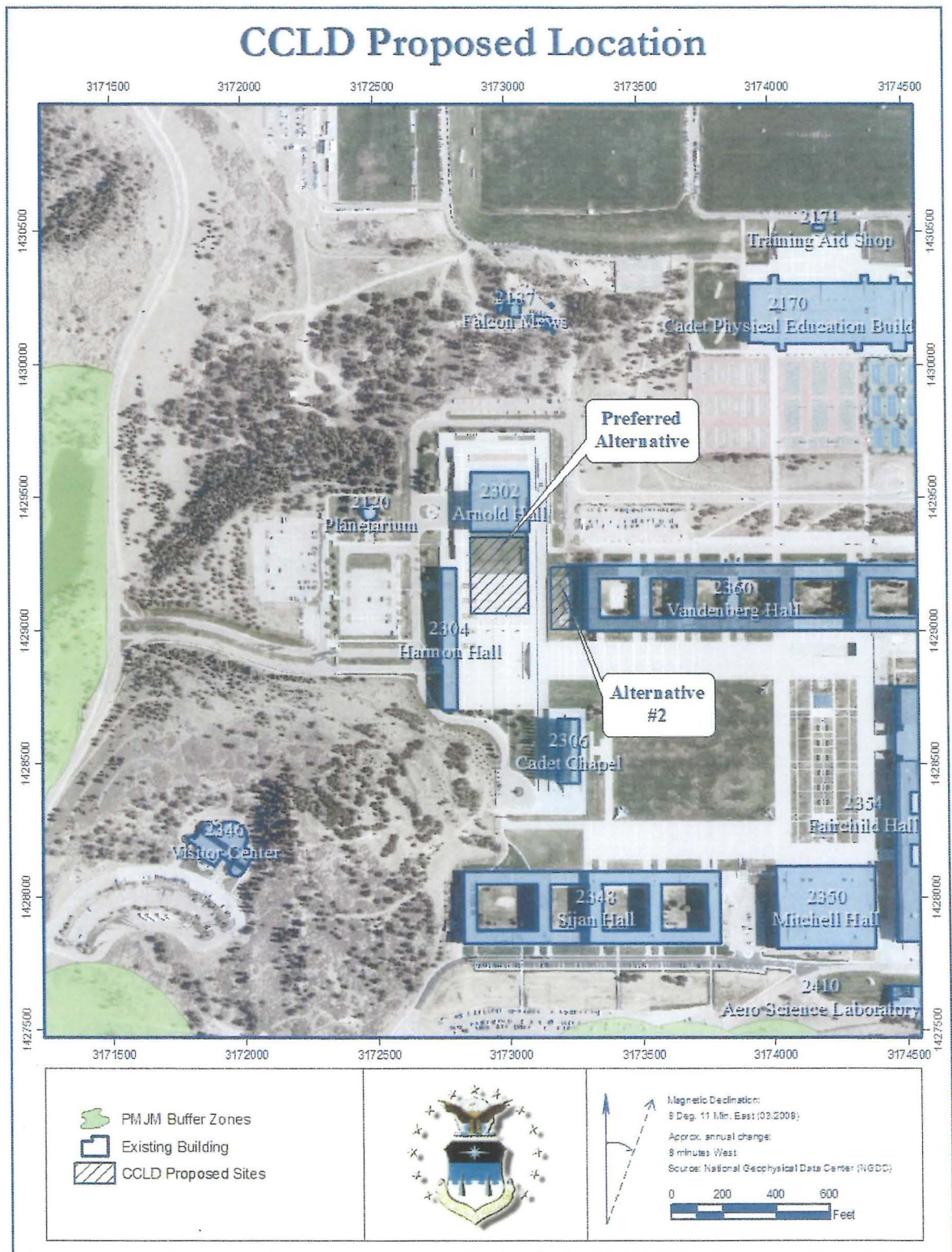


Figure 3-2  
PMJM Habitat Buffer Zones within Proposed Project Area



### 3.3.4 WETLANDS

National Wetlands Inventory maps exist of the Academy, however these maps are incomplete, out of date, and have not been subjected to extensive investigation. The Academy commissioned a study resulting in the delineation of non-jurisdictional wetlands in 2002. The study shows no wetlands exist in the proposed project area (INRMP 2008).

## 3.4 GEOLOGICAL RESOURCES

### 3.4.1 PHYSIOGRAPHY AND GEOLOGY

The Geology of the Academy is influenced by its position at the transition from plains to mountains. The Rampart Range was formed during the latest period of mountain building when Precambrian Pikes Peak Granite was forced upwards along the Rampart Range fault. The fault separates the older Precambrian granite from the younger and softer sedimentary rocks that compose the dissected plains to the east. These rocks are primarily from the Cretaceous age (144 to 65 million years ago).

The oldest sedimentary rock exposed within the Academy area is the Fountain Formation of Pennsylvania and Permian age with the predominant bedrock being the Dawson Arkose of the Cretaceous and Paleocene age. The Dawson Arkose consists of coarse arkosic sandstone and of interbedded lenticular siltstone and clay.

The surface geology in the vicinity of the Preferred Alternative consists primarily of Husted Alluvium and Colluvium overlaying the Dawson Arkose. The Dawson Formation bedrock consists of weakly indurated (hardened), non-cemented, and friable sandstones derived from granite highlands to the west. The Dawson Formation also contains beds of firm silty claystone. Dawson Formation sandstone and claystone may act as aquicludes, which are beds that inhibit percolation of water through the subsurface (Varnes and Scott, 1967).

### 3.4.2 TOPOGRAPHY

Geological mapping of the Academy conducted in 1967 identified five distinct landform types occurring at the Academy. 1) The steep lower slopes of the Rampart Range, an extension of the Rocky Mountain Front Range running from Wyoming to southern Colorado, 2) ridges of sedimentary rock that run parallel to the range, 3) mesas and foothill ridges separated by broad valleys extending eastward from the base of the mountains, 4) the Monument Creek valley, 5) an even to gently rolling area sloping southwestward towards Monument Creek. The proposed CCLD location is near the west end of the Cadet Area which is located on Lehman Mesa.

### 3.4.3 SOILS

The Natural Resources Conservation Service (NRCS) identifies the soils in the proposed project area as Jarre-Tecolote complex, 8 to 65% slopes and Pring coarse sandy loam, 3 to 8% slopes. The Jarre-Tecolote complex occurs mostly on the slopes above the valley floor and covers approximately 50% of the project area. Pring coarse sandy loam is found on the valley floor where water has historically flowed through the area. The Pring soil occurs on approximately 50% of the project area.

The Jarre-Tecolote complex is composed of about 40% Jarre soil and 30% Tecolote soils. The Jarre soil is deep and well drained with moderate permeability. Surface runoff is medium to rapid with a moderate to high hazard of erosion. Large amounts of cobbles and stones are typical of this complex.

The Pring coarse sandy loam is a deep, noncalcareous (absent of calcium carbonate, calcium, or limestone) well drained soil. The Pring soil has rapid permeability with moderate available water capacity, medium surface runoff, and a moderate hazard of erosion.



### 3.5 SOCIOECONOMICS

The Region of Influence (ROI) is the geographic area within which the majority of potential impacts to socioeconomic resources would be concentrated. The ROI for the Preferred Alternative is the Colorado Springs Metropolitan Statistical Area (MSA) in the State of Colorado (CO). The Colorado Springs MSA contains El Paso and Teller counties. This section describes the existing socioeconomic conditions for the Colorado Springs MSA. Socioeconomic factors include economic development, demographics, housing, and environmental justice.

#### Population

The Colorado Springs MSA population was estimated at 617,714 in 2008, an increase of 14.4% from the July 2000 population estimate of 540,084 (U.S. Census Bureau, 2009). The 2020 MSA population is projected to be 742,852, which is a 37.54% increase between 2000 and 2020 (<http://proximityone.com/situation/17820.htm>). This is a more rapid projected rate of growth than anticipated for State of Colorado as a whole; the Census projects that the State of Colorado will experience a 34.7% population increase by 2030 (U.S. Census Bureau 2005).

#### Demographics

The population in the Colorado Springs MSA is almost evenly divided regarding sex (49.8% male and 50.2% female). Seventy-four percent of the population is over the age of 18 and 12% of the population is 62 or older. Ninety-five percent of the population is classified as 'one race,' while the remaining is classified as 'two or more races.' Of the 'one race' population, 85% are White, 6% are Black or African American, 1% are American Indian or Alaska Native, 3% are Asian, and 5% are 'Some other race.' (2006-2008 American Community Survey, U.S. Census Bureau).

#### Housing

The total number of housing units in the Colorado Springs MSA was estimated at 258,747 in the 2008 American Community Survey. Of the total units, 229,554 (88.7%) were occupied and 29,193 (11.3%) were vacant. Of the occupied units, 156,067 (68%) are owner-occupied, while 73,487 (32%) are renter-occupied. Approximately 66% of the housing units in the ROI are single family detached structures, 12% contain 10 units or more in the structure, and 5% are mobile homes. The majority of the housing stock in the MSA has been built in the last forty years: 21% has been built since 2000, and 54% was built between 1970 and 1999 (American Community Survey, U.S. Census Bureau 2008).

On-base housing currently exists of 427 privatized units. These units are available to military personnel and do not impact local housing economics.

#### Economic Development

##### Employment

Of the 476,040 people that are 16 or older in the Colorado Springs MSA, 70% are in the labor force and 62% are employed. Approximately 5% are in the Armed Forces. Of the 293,703 people who are in the civilian labor force, 41% are classified in a 'Management, professional, and related occupation,' 24% are in a 'Sales and office occupation,' and 18% are in a 'Service occupation.' In the civilian labor force, 78% are classified as 'Private wage & salary workers,' 16% are classified as 'Government workers,' and 6% are classified as 'Self-employed workers in own not incorporated business.' (American Community Survey, US Census Bureau 2008).

According to NAICS Industry Coding, the major industries (those with 25,000 or more employees in the industry) in the Colorado Springs MSA in 2007 are: Government and government enterprises- 20% of total employment (of the 20%, 41% are employed in local government and 39% are in the military); Retail trade- 11% of total employment; Professional, scientific, and technical services- 8% of total employment; Health care and social assistance- 8% of total employment; Administrative & waste services- 7% of total employment; and Accommodation and food services- 7% of total employment. (Regional Economic Information System, Bureau of Economic Analysis, 2009).

#### Regional Income and Earnings

In 2008, per capita income stood at \$28,459 for the ROI area. For household income, 17.6% of the total households earned \$24,999 or less; 24.6% earned between \$25,000 and \$49,999; 21.8% earned



between \$50,000 and \$74,999; 14.1% earned between \$75,000 and \$99,999; 14.1% earned between \$100,000 and \$149,999; and 8.3% of households earned \$150,000 or more in inflation-adjusted annual dollars. (American Community Survey, US Census Bureau 2008).

Personal income in the Colorado Springs MSA in 2007 totaled \$21,710,803,000. The majority of this income (72%) was derived from net earnings, with an additional 16% attributable to dividends, interest, and rents. The remaining 12% contribution was derived from personal current transfer receipts. (Bureau of Economic Analysis, 2009).

### **Unemployment**

As of September 2009, the national unemployment rate was 9.8%. The rate of national unemployment doubled from December 2007 to September 2009, from 7.6 million unemployed persons to 15.1 million unemployed. The Colorado Springs, CO MSA had an unemployment rate lower than the national average in August of 2009 at 7.6%. However, the State of Colorado unemployment rate was lower than that of the MSA, at 7% for the same time period. (Bureau of Labor Statistics, 2009)

### **Environmental Justice**

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994), requires federal agencies to achieve environmental justice "to the greatest extent practicable" by identifying and addressing "disproportionately high adverse human health or environmental effects of activities on minority populations and low income populations." Based on the 2007 American Community Survey of the Colorado Springs MSA, the minority population comprises 20% of the total population and approximately 10% of the population has had an income below the poverty line within the last twelve months. (American Community Survey, U.S. Census Bureau).

### **Protection of Children**

The Academy follows the guidelines as specified for the protection of children as indicated in EO 13045 (1997), Protection of Children from Environmental Health Risks and Safety Risk. This EO requires that federal agencies shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that policies, programs, and standards address disproportionate risks to children that result from environmental health or safety risks.

## **3.6 AIR QUALITY**

For this EA, the area considered and analyzed for air quality is defined as El Paso County, Colorado where the Proposed Action is located. The Academy is required to permit stationary air emission sources with the Colorado Department of Public Health and the Environment (CDPHE). Air emissions generated on the Academy are below Title V reporting requirements and the installation is classified as a "Synthetic Minor" source by CDPHE.

The ambient air quality in an area can be characterized in terms of whether it complies with the primary and secondary National Ambient Air Quality Standards (NAAQS). The Clean Air Act (42 U.S.C. 7401 et seq.) requires the U.S. Environmental Protection Agency (EPA) to set NAAQS for pollutants considered harmful to public health and the environment. NAAQS have been established for seven criteria pollutants: carbon monoxide (CO); lead (Pb); nitrogen dioxide (NO<sub>2</sub>); ozone (O<sub>3</sub>); particulate matter with an aerodynamic size less than or equal to 10 microns (PM<sub>10</sub>); particulate matter with an aerodynamic size less than or equal to 2.5 microns (PM<sub>2.5</sub>); and sulfur dioxide (SO<sub>2</sub>). These pollutants are believed to be detrimental to public health and the environment, and are known to cause property damage. Table 4-1 lists the NAAQS values for each criteria pollutant. The Colorado Air Quality Control Commission, The Colorado Department of Public Health and Environment (CDPHE), and the Pikes Peak Area Council of Governments (PPACG) work to ensure that the air quality within Colorado meets or is better than the levels required by Federal and State standards. Colorado has a State Implementation Plan (SIP) for the management and regulation of air pollution.

The Colorado Springs area is under a CO Maintenance Plan until 2020 to demonstrate compliance with the CO NAAQS ([http://www.ppacg.org/cms/index.php?option=com\\_content&task=view&id=320&Itemid=48](http://www.ppacg.org/cms/index.php?option=com_content&task=view&id=320&Itemid=48)).



**Table 3-2 National and Colorado Ambient Air Quality Standards**

| <b>Pollutant</b>                                                   | <b>National</b>        | <b>Colorado</b>                |
|--------------------------------------------------------------------|------------------------|--------------------------------|
| <b>Carbon Monoxide (CO)</b>                                        |                        |                                |
| 8-hour average                                                     | 9 ppm                  | 10 mg/m <sup>3</sup>           |
| 1-hour average                                                     | 35 ppm                 | 40 mg/m <sup>3</sup>           |
| <b>Lead (Pb)</b>                                                   |                        |                                |
| Quarterly Average                                                  | 1.5 µg/m <sup>3</sup>  |                                |
| <b>Nitrogen Dioxide (NO<sub>2</sub>)</b>                           |                        |                                |
| Annual arithmetic mean                                             | 0.053 ppm              | 100 µg/m <sup>3</sup>          |
| <b>Ozone (O<sub>3</sub>)</b>                                       |                        |                                |
| 8-hour average                                                     | 0.075 ppm              | 235 µg/m <sup>3</sup> (1 hour) |
| <b>Particulate matter less than 10 microns (PM<sub>10</sub>)</b>   |                        |                                |
| Annual Mean                                                        | 50 µg/m <sup>3</sup>   | 50 µg/m <sup>3</sup>           |
| 24-hour average                                                    | 150 µg/m <sup>3</sup>  | 150 µg/m <sup>3</sup>          |
| <b>Particulate matter less than 2.5 microns (PM<sub>2.5</sub>)</b> |                        |                                |
| Annual arithmetic mean                                             | 15.0 µg/m <sup>3</sup> |                                |
| 24-hour average                                                    | 35 µg/m <sup>3</sup>   |                                |
| <b>Sulfur dioxide (SO<sub>2</sub>)</b>                             |                        |                                |
| Annual arithmetic mean                                             | 0.03 ppm               |                                |
| 24-hour average                                                    | 0.14 ppm               |                                |

Source: 40 CFR 50.4 through 50.13, CDPHE, Air Quality Control Commission, 5 CCR 1001-14, amended 11/19/09, effective 12/30/09  
 µg/m<sup>3</sup> micrograms per cubic meter  
 mg/m<sup>3</sup> milligrams per cubic meter  
 ppm parts per million

#### **Air Emission Sources at Proposed CCLD Site**

There are permits for stationary air emission generators at the USAFA. Emissions generated at USAFA are from vehicular/mobile sources.

#### **Regional Air Pollution Emissions Summary**

General air quality monitoring is conducted in areas of high population density and near major sources of air pollutant emissions. Regions that are in compliance with the NAAQS are designated as attainment areas. Areas for which no monitoring data is available are designated as unclassified and are by default considered to be in attainment of the NAAQS. In areas where the applicable NAAQS are not being met, a non-attainment status is designated. Both the Preferred Alternative and Alternative 2 are located in EPA Region 8. These sites are currently in an attainment area.

To regulate the emission levels resulting from a project, federal actions located in non-attainment areas are required to demonstrate compliance with the general conformity guidelines established in 40 CFR Part 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans (the Rule). Section 93.153 of the Rule sets the applicability requirements for projects subject to the Rule through the establishment of *de minimis* levels for annual criteria pollutant emissions. These *de minimis* levels are set according to criteria pollutant nonattainment area designations. Projects below the *de minimis* levels are not subject to the Rule. Those at or above the levels are required to perform a conformity analysis as established in the Rule. The *de minimis* levels apply to direct and indirect sources of emissions that can occur during the construction and operational phases of the action.

In addition to evaluation of air emissions against *de minimis* levels, emissions are also evaluated for regional significance. A federal action that does not exceed the threshold emission rates of criteria pollutants may still be subject to a general conformity determination if the direct and indirect emissions from the action exceed 10% of the total emissions inventory for a particular criteria pollutant in a non-attainment or maintenance area. If the emissions exceed this 10% threshold, the federal action is considered to be a "regionally significant" activity, and thus, the general conformity rules apply.



### 3.7 CULTURAL RESOURCES

The Cadet Area is a National Historic Landmark District (NHLD). Additionally, the CO SHPO determined that the USAFA has cultural resources that are eligible for listing to the National Register of Historic Places for the period of significance of 1954-1968. USAFA has coordinated the CCLD preliminary design in accordance with 36 CRF Part 800.10 (c), with the Colorado State Historic Preservation Office (CO SHPO), and the National Parks service (NPS), see Appendix B. Return correspondence from both agencies indicates that they anticipate no adverse effect by the construction of the CCLD, however they would like continued consultation on the height of the skylight and material selection later in the design process.

One of the major components of the USAFA Design Standards is the potential impact a building may have on the viewsheds that have been established since the Academy's inception.

### 3.8 UTILITIES

This section describes existing utilities at the CCLD site. In general, the utility systems are classified as distribution and collection systems, including water, wastewater system, and energy sources. Local municipal and commercial utility entities provide all major utilities (water, sewer, natural gas, electricity, and communications) at the proposed USAFA CCLD. The Academy receives water, electric service, and natural gas supply from Colorado Springs Utilities (CSU), a community-owned utility. The Academy treats its own wastewater at a facility located on Academy grounds. The wastewater treatment facility is not located at or near the project site.

#### **Potable Water Supply**

Potable water (drinking water) is only supplied by the utility company. Two water treatment plants, along with clear wells and pumping facilities, are owned and operated by Colorado Springs Utilities (CSU) and co-located on leased Academy property. The two plants were recently expanded to 92 million-gallon per day (MGD) Pine Valley Treatment Plant and the 75 MGD J. A. McCullough Treatment Plant. Both plants supply all the potable water to the Academy and a portion to the City of Colorado Springs. The Academy potable requirement ranges from 1 to 3 MGD. The water demand 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 3.5 miles away. A hydroelectric plant located in the raw-water tunnel from the reservoir to the plants captures the potential energy from the large elevation difference. The raw water then 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 a 10-million gallon capacity clear well, while the McCullough Plant has a five million-gallon clear well. The Pine Valley Pumping station can pump from either clear well, but is primarily valved to the Pine Valley plant.

The Pine Valley Pumping Station pumps are controlled via telemetry off the Academy's Reservoir No. 1. All the reservoir's levels and high and low alarms are monitored at CSU's main water system control room. 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 Academy's western and southern borders.

#### **Non-Potable Water Supply**

The Academy's non-potable water 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 USAF Academy 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 the AFA for the near



future. It is likely that any future improvements to the treatment facility will be replacements rather than expansion of capacity (Pikes Peak Area Council of Government 2003 208 Plan-Amended September 2007).

The Academy's treatment facility generally achieves zero discharge 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 USAF Academy grounds. Any discharge to Monument Creek may occur if the nonpotable reservoirs are full and only in emergency conditions when conveyance facilities are inoperable. The AFA 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 the Air Force Academy.

### **Energy Sources**

The United States government has contracted with CSU for the provisions of reliable electric power generation through the payment of an \$18.3 million connect charge. The Academy requirements for design of the new facility are for it to be a LEED – Platinum Standard facility (DDForm 1391, Nov 2009). Geo-thermal, photovoltaic, and other energy-reducing systems will be used to construct this facility. Other LEED items that will impact energy usage that are incorporated into the design include: 50% reduction in non-potable water usage, 40% potable water usage reduction by incorporating dual flush fixtures, optimized energy performance by metering, and solar generation with the Building Integrated Photovoltaic array on the skylight (SOM, LEED meeting minutes, 05 OCT 2009). As the provider of electric service to the Academy, CSU will design, build, own, and operate a Solar Array that will generate renewable electricity for use by the Academy. The Solar Array will produce approximately 4 to 7 % of the total power requirement for the Academy. The Solar Array will be funded entirely with federal stimulus money provided to the Academy. If a formal agreement is made, the Solar Array could be completed by the end of 2010.

## **3.9 HAZARDOUS MATERIALS**

Hazardous materials and hazardous wastes, if mishandled, can pose risks to the public through exposure. Potential health and safety impacts can stem from interactions of construction workers, the public and/or future residents/workers with hazardous materials and wastes encountered or generated during project construction activities or project operations.

In qualitative terms, an increase in the level of risk would correlate with an increase in the nature and relative quantities of hazardous materials and wastes handled and/or stored at the Academy and from potential exposure of workers to hazardous materials associated with construction.

The most common threat of hazardous materials at the Academy is the release of petroleum, oils and lubricants (POLs) due to spills or leaks from aircraft, vehicles or generators. The Academy implements a *Hazardous Materials Emergency Planning and Response Plan* that describes preventative actions that should be taken to reduce the potential for hazardous materials from entering the environment and provides guidance concerning the containment and cleanup of spills. The Academy also has a Hazmat Management System for distributing hazardous materials and an Installation Hazmat Management Process (IHMP) Team for use at industrial shops on base (INRMP, 2008). Construction debris will be recycled or disposed in accordance with solid waste regulations off-installation.

## **3.10 TRANSPORTATION**

This section describes the general traffic conditions within the Proposed Action area in terms of access and circulation. The impacted area for transportation is defined as the Academy and the immediate vicinity.



### **General Transportation**

The Academy is served by a comprehensive roadway system linking its various functional areas across the 18,455-acre site. Interstate 25 (I-25) is the primary regional conduit traffic into Colorado Springs. I-25 extends north through Denver and beyond and south through Pueblo into New Mexico. It also extends north-south through the eastern portion of the Academy. Two major interchanges connect I-25 to the base at North Gate and South Gate Boulevards inside the base's eastern boundary. They remain the only vehicular access points to the USAF Academy, and they are both on Academy property (General Plan 2005).

The Academy is open to the general public. With a driver's license or other form of identification, the public is authorized access to the base throughout the day; military identification is required between 2300-0600 hours. The Academy is considered one of the most frequented tourist attractions in the State of Colorado (General Plan 2005).

Parking facilities in the area of the Preferred Alternative are available and sufficient for demand. There are no plans to provide additional parking facilities, as the majority of users are either already on campus or have already been parking to participate in the program.

Air transportation is handled through the Colorado Springs Municipal Airport. The airport is located in the southeastern portion of Colorado Springs. Six (6) airlines operate at this airport, with over 100 flights daily. The airport shares its runways with Peterson Air Force Base.

### **Public Transportation**

There is no direct transit service to the Academy at the time of preparation of this EA. The General Plan (2005) describes a location at the Supply and Services area; however, local transit authorities have discontinued this service due to funding constraints.

Currently, the CCLD program annually transports 2100 cadets and 200 facilitators to various off-base seminars.

## SECTION 4- ENVIRONMENTAL CONSEQUENCES

### 4.1 LAND USE

Potential impacts to land use from a Preferred Alternative were determined by evaluating whether an action is compatible with existing land use and in compliance with existing land use plans and policies. Potential land use impacts were analyzed by: 1) identifying and describing land uses that could affect or be affected by the Preferred Alternative, 2) assessing the degree to which construction and/or operation of facilities would interfere with the activities or functions of adjacent existing or proposed land uses; and, 3) determining whether interference with adjacent or nearby land use would be incompatible to the point that public health or safety would be threatened. Impacts to visual resources are also evaluated by considering the visual sensitivity of the area.

#### 4.1.1 PREFERRED ALTERNATIVE

The proposed location for the new facility would include part of the Court of Honor (statues to be relocated at a later time) and most of the open court yard on the south side of Arnold Hall. Both of these existing areas are classified as Open Space (Designated) in the Base General Plan (2005). The proposed facility would have the land use classification of "Academics". The construction and operation of the new facility would require a change of the current land use from "Open Space (Designated)" to "Academics".

**Academics:** This land use category includes those facilities where educational activities are pursued. Specific facilities include classroom, lecture halls, laboratories, library facilities, computer facilities, research space, and faculty/administrative offices.

**Open Space (Designated):** This open space category encompasses all outdoor uses that support the academic, military, and athletic programs. Facilities include the athletic fields, parade grounds, pools, family camping, parks and picnic areas, golf courses, riding stables, the Terrazzo level, and the Court of Honor. This category also includes all Academy easements for public transportation and utilities corridors.

The new facility is being specifically designed to fulfill its purpose while complementing the surrounding structures. The benefit of the Preferred Alternative location is the ease of accessibility to both the cadets and to the public participants of the CCLD program. Care is being taken in the design of the new facility to prevent the public from accessing secure Cadet Areas.

The existing Open Space (Designated) area is the location of the Court of Honor. The Court of Honor serves an important purpose on the Academy but that purpose is not exclusively served at the existing location. The purpose of the Court of Honor can be served at another Open Space (Designated) location where the function of the CCLD program is specially served at the proposed location by increasing both Cadet access and CCLD program efficiency.

#### 4.1.2 ALTERNATIVE 2

The construction and operation of the new facility at the Alternative 2 location would also require a change of the current land use from "Open Space (Designated)" to "Academics". The Alternative 2 location would not directly impact the Court of Honor, but the location has Anti-Terrorism/Force Protection (AT/FP) requirement difficulties to overcome due to space availability and it would impact the viewshed in relation to the Chapel. The other Land Use impacts associated with implementation of Alternative 2 would be comparable to those described for the Preferred Alternative in section 4.1.1.

#### 4.1.3 NO ACTION ALTERNATIVE

Land use on USAFA would not change from the baseline condition as a result of implementation of the No Action Alternative.



#### 4.1.4 MITIGATION

No mitigation is required if the Preferred Alternative is implemented.

#### 4.1.5 CUMULATIVE AND LONG-TERM IMPACTS

Future construction projects planned for USAFA would be consistent with planned land use patterns. This activity combined with future activities would not cumulatively impact land use. According to the General Plan (2005) additional construction activities in this specific area are not programmed in the foreseeable out years. For this reason, cumulative impacts would not be considered significant.

### 4.2 WATER RESOURCES

Water resources include all surface and groundwater. For the purposes of this analysis, those water resources within the proposed project area, and the watershed areas affected by existing and potential surface water runoff, were investigated. Floodplains and wetlands (jurisdictional and non-jurisdictional) were also considered.

The criteria for determining the significance of impacts to Water Resources are based on water quantity, quality, and use; whether they occur within a 100-year floodplain or wetland, consume or add to surface water or groundwater resources, alter surface water flow patterns that could affect stormwater runoff, or alter releases of pollutants to water, or land (surface water drainages) that would affect the hydrologic system.

#### 4.2.1 PREFERRED ALTERNATIVE

**Construction Stormwater Quality:** Grading and construction of the new facility under the Preferred Alternative would result in temporary soil disturbance that will be controlled with stormwater best management practices (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 Best Management Practices (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 every 14 days or after precipitation events of 0.5 inches or more to ensure sediment is not leaving the site.
- Document inspections on a form developed by the Contractor.

As a result of these controls, construction impacts to water resources are anticipated to be minimal.

**Post-Construction Stormwater Quality:** Operation of the facility after construction will not materially increase pollutant loads since the facility is an educational building with no industrial, materials handling, or other pollutant generating activities. In addition, the Academy is considered a small municipal separate storm sewer system (MS4) subject to EPA regulations at 40 CFR 122. These regulations require the Academy to develop and implement a Stormwater Management Program (SWMP) to address stormwater runoff quality from new development and significant redevelopment. This program will continue to be implemented and through education of students, staff, and visitors and along with the implementation of drainage design practices defined in facility design criteria and manuals, pollutant discharges will be reduced to the maximum extent practicable using post-construction BMP's (operations and maintenance, surface cleaning, sweeping, swales, infiltration, source control, etc.)

As a result of these design and operational practices, post-construction impacts to water resources are anticipated to be minimal.

**Stormwater Runoff Volume:** Implementation of the Preferred Alternative will convert some of the managed turf grass immediately south of Arnold Hall to impervious surfaces (approximately 34,000 sq. ft.). This conversion is anticipated to increase post-development runoff flows slightly. Post-development flows should be mitigated by conforming to the post-construction stormwater runoff control design criteria presented in the Colorado Springs City / County Storm Water Drainage Control Manual Volumes I and II, which requires control of runoff to historical rates of release from the 2-, 5-, 10-, 50-, and 100-year storms.

**Wetlands and Floodplains:** No wetlands or floodplains are in the immediate vicinity of the proposed project area. Therefore the Preferred Alternative would not be expected to result in significant effects on wetlands or floodplains.

#### 4.2.2 ALTERNATIVE 2

Impacts to Water Resources under Alternative 2 would be similar to those described for the Preferred Alternative in Section 4.2.1.

#### 4.2.3 NO ACTION ALTERNATIVE

The No Action alternative would not result in any construction activities at the USAFA. No changes to groundwater or surface water would occur.

#### 4.2.4 MITIGATION

Storm water management is mandatory for both construction and post-construction phases of the project under the Clean Water Act. With the development and implementation of BMPs as described in the Preferred Alternative, no impacts to natural resources and water quality would be expected.

During design and construction the following items must be implemented:

Low Impact Development (LID) practices in accord with EPA's Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects Under Section 438 of the Energy Independence and Security Act (EPA 841-B-09-001).

Post-construction stormwater runoff control designs shall be consistent with criteria presented in the Colorado Springs City / County Storm Water Drainage Control Manual Volumes I and II, which requires control of runoff to historical rates of release from the 2-, 5-, 10-, 50-, and 100-year storms.

With the development and implementation of BMPs as described, no impacts to natural resources and water quality would be expected.

#### 4.2.5 CUMULATIVE AND LONG-TERM IMPACTS

The cumulative impacts of continued development in the past at the Academy have been the degradation of several stream corridors. A number of factors have contributed to this. Erosion and sedimentation during construction, increased stormwater volume, increased stormwater peak flows, and sequential frequency of stormwater events have all contributed to stream deterioration. Soils at the Academy generally consist of decomposed granite that exhibit low water and moisture holding capacity. During precipitation events, storm water is absorbed by these highly permeable soils, but once saturation occurs or the run-off velocity is excessive, erosion of the soils occurs rapidly.

Efforts to control stormwater on the Academy have focused on maintaining pre-development historic rates of release from the project site. This method of control mitigates stream degradation such as stormwater volume, erosion and sediment deposition.

Storm water management would be conducted during both the construction and operation of the Preferred Alternative.

Future projects in the vicinity of the Preferred Alternative would utilize source control to minimize downstream impacts. (See Photograph #3, Appendix A). The objective of source control is to imitate the existing hydrologic conditions and in so doing preserve the existing water balance to minimize



downstream impacts. With site specific implementation of BMPs such as source control, future actions would not be expected to cumulatively contribute to impacts on water resources.

#### **4.3 BIOLOGICAL RESOURCES**

Biological resources refer to native, naturalized, or introduced plants and animals and the habitats in which they occur. Effects on biological resources would be considered significant if the action: substantially diminished habitat for a plant or animal species; resulted in an impact to threatened or endangered species; substantially diminished a regionally or locally important plant or animal species; interfered substantially with wildlife movement or reproductive behavior; resulted in a substantial infusion of exotic plant or animal species; or, destroyed, lost or degraded jurisdictional wetlands or floodplains.

##### **4.3.1 PREFERRED ALTERNATIVE**

Overall, potential impacts to biological resources from the Preferred Alternative would not be significant. The Preferred Alternative would have no overall effect on biodiversity or regional plant and animal populations.

Construction and operation of the proposed new facility would disturb less than one acre of ground. BMPs for erosion control, topsoil management, and revegetation would be required and stated in the construction contract, and therefore potential effects would not be significant. The new facility would be built on land that has already been disturbed (i.e. the area appears to have been stripped of topsoil and is currently being maintained or is presently concrete), so there would not be any loss of native vegetation. Potential impacts to vegetation would not be significant.

There are no documented threatened or endangered species or critical habitat on the proposed project site. Any potential transient species that may enter the site would move to other similar habitat within the area.

##### **4.3.2 ALTERNATIVE 2**

Impacts to wildlife and vegetation anticipated to occur from Alternative 2 would be similar to those discussed under the Preferred Alternative.

##### **4.3.3 NO ACTION ALTERNATIVE**

Under the No Action Alternative, no changes or impacts would occur to biological resources.

##### **4.3.4 MITIGATION**

There will be no significant impacts to biological resources. Therefore, no mitigation will be required.

##### **4.3.5 CUMULATIVE AND LONG-TERM IMPACTS**

The cumulative impact to biological resources consists of the irreversible changes to the ecosystem on and surrounding the project area. Due to the previously disturbed nature and small size of the project area, the Preferred Alternative would result in minimal cumulative impacts on biological resources.

#### **4.4 GEOLOGICAL RESOURCES**

Geological resources consist of all soil and rock materials. Soil refers to a complex mixture of weathered mineral particles, decaying organic material, living organisms, gases, and liquid solutions overlying bedrock or other parent material.

The criteria for determining the significance of impacts to geology/soils are based on the extent the Preferred Alternative would alter or be affected by geologic or soil resources, such as top soils, mineral reserves, energy sources, seismic activity, or unique or important land forms. Additionally, the potential

for large uncontrolled erosion was also considered.

#### 4.4.1 PREFERRED ALTERNATIVE

Construction of the new facility would be located in an area that has been altered as a result of construction activities associated with the establishment of the Academy.

Alteration of ground surface on the site would be limited to clearing, removal of existing structures, excavation to shallow depths, and grading. Soils in the vicinity of the proposed building are deep and well drained with moderate permeability. The area of the Preferred Alternative is generally flat with mostly hard impermeable surfaces surrounding the location. Surface runoff will be minimal with little hazard of erosion.

#### 4.4.2 ALTERNATIVE 2

Impacts to Geological Resources under Alternative 2 would be very similar to those described for the new facility in section 4.4.1.

#### 4.4.3 NO ACTION ALTERNATIVE

No ground disturbing activities would occur. Therefore, no impact to physiographic features and soils would be anticipated.

#### 4.4.4 MITIGATION

The Preferred Alternative is planned to be constructed in the Cadet Area. Mitigation measures would not be required.

#### 4.4.5 CUMULATIVE AND LONG-TERM IMPACTS

This area has been previously disturbed and modified by construction activities. Based on this, the Preferred Alternative would not be expected to cumulatively contribute to impacts to geologic resources consisting of soil and rock materials.

Soil refers to a complex mixture of weathered mineral particles, decaying organic material, living organisms, gases, and liquid solutions overlying bedrock or other parent material. The criteria for determining the significance of impacts to geology/soils are based on the extent the Preferred Alternative would alter or be affected by geologic or soil resources, such as top soils, mineral reserves, energy sources, seismic activity, or unique or important land forms.

### 4.5 SOCIO-ECONOMICS

Potential socioeconomic impacts are considered significant if the Preferred Alternative would cause substantial gains or losses in population and/or employment, or disequilibrium in the housing market, such as severe housing shortages or surpluses, resulting in substantial property value changes.

Potential environmental justice impacts are considered significant if the Preferred Alternative would cause disproportionate effects on low-income and/or minority populations.

#### 4.5.1 PREFERRED ALTERNATIVE

##### Economic Development

##### **Construction Phase**

In terms of personnel, the Preferred Alternative involves the relocation of existing USAFA personnel that are currently located within the ROI. In the short term, expenditures in the local economy for goods and services and direct employment associated with construction would increase sales volume, employment, and income in the ROI. The economic benefits would be temporary, lasting only for the duration of the



construction period.

Estimates of both the direct and secondary effects of construction activities and the induced effects in related industrial sectors that would be affected by construction expenditures and employment are minimal. The percentage increase in sales volume, income, and employment are relatively minor and fall within the range of historical fluctuations in those economic parameters. Short-term minor beneficial effects to the regional economy can be expected from the construction activities required to implement the Preferred Alternative.

#### ***Operations Phase***

There would be no measureable change in long-term employment because the Preferred Alternative involves the relocation of existing personnel within the ROI.

#### **Population and Housing**

The workforce required during the construction phase of the Preferred Alternative would be available within the region and no in-migration of construction workers would occur. Thus, no increase in population is anticipated and potential impacts to housing and other community resources would not occur.

#### **Environmental Justice and Protection of Children**

The Preferred Alternative would be confined to the Academy. Construction and operation of the proposed Academy location would not result in adverse impacts associated with air quality, noise, groundwater, surface water, or hazardous materials and wastes. Safety measures to protect pedestrians, including children, would be implemented during construction. As a result, minorities, low-income residents, and children living in proximity to the Academy would not be disproportionately impacted by the Preferred Alternative. This analysis is considered valid regardless of the total number or percentage of minorities, low-income residents, or children that live in proximity to the area, or the distance of their residences from the area. For these reasons, the Preferred Alternative would have no effect on environmental justice or protection of children.

### **4.5.2 ALTERNATIVE 2**

Impacts anticipated to occur from Alternative 2 would be similar to those discussed under the Preferred Alternative, as the ROI is the same for both alternatives.

### **4.5.3 NO ACTION ALTERNATIVE**

Under the No Action Alternative there would be no changes to existing socioeconomic conditions within the ROI.

### **4.5.4 MITIGATION**

Because no impacts would occur, no mitigation is required for socioeconomic impacts, environmental justice, or children's environmental health and safety.

### **4.5.5 CUMULATIVE AND LONG-TERM IMPACTS**

The Preferred Alternative when combined with future projects would have short- and long-term beneficial effects on the regional economy in terms of employment, income, and business sales.

## **4.6 AIR QUALITY**

Potential impacts to air quality are considered significant if the Preferred Alternative would: increase ambient air pollution above any NAAQS; contribute to an existing violation of any NAAQS; interfere with or delay timely attainment of NAAQS; or impair visibility within any federally mandated Prevention of Significant Deterioration (PSD) Class I area.

#### 4.6.1 PREFERRED ALTERNATIVE

Temporary increases in air pollution would occur from the use of construction equipment in building new facilities. Dust, diesel emissions, and particulate matter are expected to temporarily increase during the first 12 to 18 months of the project. Due to the short duration of the construction project, any increases or impacts on ambient air quality are expected to be short-term and minor.

Calculations were performed to estimate the total air emissions from the new construction activities. Calculations were made for standard construction equipment such as bulldozers, excavators, front end loaders, backhoes, cranes, and dump trucks. Assumptions were made regarding the type of equipment, duration of the total number of days each piece of equipment would be used, and the number of hours per day each piece of equipment would be used. The assumptions and resulting calculations are presented in Table 4-1.



**Table 4-1 Construction Emissions Calculation Table**  
**Estimated Emissions Summary - Construction Equipment**

| Construction Equipment | Operating Assumptions |               |            |           | Emission Factor (grams/hp-hr) <sup>(1)</sup> |                  |                   |          |                 |                 |
|------------------------|-----------------------|---------------|------------|-----------|----------------------------------------------|------------------|-------------------|----------|-----------------|-----------------|
|                        | Days per Year         | Hours per Day | Horsepower | Fuel Type | VOC                                          | PM <sub>10</sub> | PM <sub>2.5</sub> | CO       | NO <sub>x</sub> | SO <sub>2</sub> |
| Dump Truck             | 30                    | 12            | 340        | Diesel    | 0.25824                                      | 0.26393          | 0.25601           | 1.92811  | 4.37321         | 0.05421         |
| Excavator              | 30                    | 12            | 463        | Diesel    | 0.21535                                      | 0.23214          | 0.22518           | 1.63965  | 3.90861         | 0.05422         |
| Bulldozer              | 30                    | 12            | 324        | Diesel    | 0.23469                                      | 0.24432          | 0.23699           | 1.76853  | 4.18968         | 0.05421         |
| Front End Loader       | 30                    | 12            | 215        | Diesel    | 0.96801                                      | 0.61180          | 0.59345           | 3.61795  | 6.00615         | 0.06306         |
| Crane                  | 180                   | 12            | 275        | Diesel    | 0.29293                                      | 0.19268          | 0.18690           | 0.87924  | 4.08916         | 0.05361         |
| Backhoe                | 180                   | 12            | 92         | Gasoline  | 2.31934                                      | 0.06964          | 0.06407           | 56.14726 | 3.46978         | 0.14976         |

(1) Emission Factor from NONROAD Emissions Model

| Construction Equipment | Estimated Emissions (tons per year)                         |                  |                   |              |                 |                 |
|------------------------|-------------------------------------------------------------|------------------|-------------------|--------------|-----------------|-----------------|
|                        | VOC                                                         | PM <sub>10</sub> | PM <sub>2.5</sub> | CO           | NO <sub>x</sub> | SO <sub>2</sub> |
| Dump Truck             | 0.035                                                       | 0.036            | 0.035             | 0.260        | 0.590           | 0.007           |
| Excavator              | 0.040                                                       | 0.043            | 0.041             | 0.301        | 0.718           | 0.010           |
| Bulldozer              | 0.030                                                       | 0.031            | 0.030             | 0.227        | 0.539           | 0.007           |
| Front End Loader       | 0.083                                                       | 0.052            | 0.051             | 0.309        | 0.512           | 0.005           |
| Crane                  | 0.192                                                       | 0.126            | 0.122             | 0.576        | 2.677           | 0.035           |
| Backhoe                | 0.508                                                       | 0.015            | 0.014             | 12.29        | 0.760           | 0.033           |
| <b>Total Emissions</b> | <b>0.89</b>                                                 | <b>0.30</b>      | <b>0.29</b>       | <b>13.97</b> | <b>5.80</b>     | <b>0.10</b>     |
| Construction Equipment | Total Estimated Emissions<br>26 Month Construction Duration |                  |                   |              |                 |                 |
|                        | VOC                                                         | PM <sub>10</sub> | PM <sub>2.5</sub> | CO           | NO <sub>x</sub> | SO <sub>2</sub> |
| Dump Truck             | 0.075                                                       | 0.077            | 0.075             | 0.564        | 1.278           | 0.016           |
| Excavator              | 0.086                                                       | 0.092            | 0.090             | 0.653        | 1.556           | 0.022           |
| Bulldozer              | 0.065                                                       | 0.068            | 0.066             | 0.493        | 1.167           | 0.015           |
| Front End Loader       | 0.179                                                       | 0.113            | 0.110             | 0.669        | 1.110           | 0.012           |
| Crane                  | 0.416                                                       | 0.273            | 0.265             | 1.247        | 5.801           | 0.076           |
| Backhoe                | 1.101                                                       | 0.033            | 0.030             | 26.648       | 1.647           | 0.071           |
| <b>Total Emissions</b> | <b>1.92</b>                                                 | <b>0.66</b>      | <b>0.64</b>       | <b>30.27</b> | <b>12.56</b>    | <b>0.21</b>     |

The total air quality emissions, as presented in Table 4-2, were calculated to determine the applicability of the General Conformity Rule. The General Conformity Rule applies to areas that have been designated as a non-attainment or maintenance zone for an air pollutant, such as the Colorado Springs area. Regulations set forth in 40 CFR 51 Subpart W-Determining Conformity of the General Federal Action to State or Federal Implementation Plans determine if additional permits are needed. According to 40 CFR 51.853(b), Federal actions require a Conformity Determination for each pollutant where the total of direct and indirect emissions in a non-attainment or maintenance area caused by a Federal action would equal or exceed any of the rates in paragraphs 40 CFR 51.853(b)(1) or (2). A summary of the total emissions are presented in Table 4-1. As can be seen from this table, the proposed construction activities do not exceed thresholds and, thus, do not require a Conformity Determination.

**Table 4-2 Total Air Emissions (tons/year) from Construction Activities**

(26 month schedule) vs. the *de minimis* Thresholds

| Pollutant                        | Total | <i>De minimis</i> Thresholds |
|----------------------------------|-------|------------------------------|
| Nitrogen Oxides (NOx)            | 5.80  | 100                          |
| Volatile Organic Compounds (VOC) | 0.89  | 100                          |

Long-term impacts associated with operation of the proposed new facility are not likely to occur. No fueling facilities, underground storage tanks (USTs), or paint booths would be required for the new facility. The vehicles associated with the use of these facilities by cadets is expected to decrease, therefore a positive impact on the airshed is expected as a result in use and operation of the new facility. Cadets and CCLD program facilitators will no longer need to commute to off-base locations.

#### 4.6.2 ALTERNATIVE 2

Impacts anticipated to occur from Alternative 2 would be similar to those discussed under the Preferred Alternative.

#### 4.6.3 NO ACTION ALTERNATIVE

Implementation of the No Action Alternative would not change current conditions and therefore would not affect the current air quality conditions in the region.

#### 4.6.4 MITIGATION

There will be no significant environmental impacts related to air quality.

#### 4.6.5 CUMULATIVE AND LONG-TERM IMPACTS

As mentioned previously, emissions associated with construction activities for the Preferred Alternative would be insignificant and well below *de minimis* levels. Construction, renovation, or demolition may cause increased short-term external combustion in air emissions from heavy equipment usage. These impacts would be temporary impacts and would not be significant. Proper and routine maintenance of vehicles and other equipment would be implemented to ensure that emissions are within the design standards of all construction equipment.

### 4.7 CULTURAL RESOURCES

Cultural resources are any prehistoric or historic district, site, or building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious or other purposes. They include archaeological resources, historic architectural resources, and traditional resources. Archaeological resources are locations where prehistoric or historic activity measurably altered the earth or produced deposits of physical remains (e.g., arrowheads, bottles). Historic architectural resources include standing buildings, dams, canals, bridges, and other structures of historic or aesthetic significance. Traditional resources are associated with cultural practices and beliefs of a living community that are rooted in its history, and are important in maintaining the continuing cultural identity of the community.

Historic properties (as defined in 36 CFR 60.4) are significant archaeological, architectural, or traditional resources that are either eligible for listing, or listed in, the NRHP. Historic properties are evaluated for potential adverse impacts from an action, as are significant traditional resources identified by American Indian tribes or other groups.

Activities at the Academy, such as new construction and/or changes in mission, must consider the impact on the Academy's natural landscape as well. Changes at the Academy, either new buildings or mission changes, should be compatible with and must respect the existing natural landscape, an important component of the Academy's overall cultural landscape and part of its National Historic Landmark



designation. Structural additions that do not follow the original Academy design concepts would destroy the historic integrity of the Academy, which includes the natural landscape.

#### 4.7.1 PREFERRED ALTERNATIVE

Much of the Cadet Area has been previously disturbed by historical activities of the Academy. According to the Integrated Cultural Resources Management Plan (ICRMP), 2006, there are no previously recorded prehistoric or early historic archeological sites or homesteads within the Cadet Area National Historic Landmark District boundary. The USAFA General Plan (2005) does however state that there are several (not identified) archeological sites within the boundary of the Academy. Archeological significant sites are not considered further in this analysis.

The Academy has initiated the appropriate consultation with the Colorado (CO) SHPO and the NPS per Section 106 of the NHPA and in accordance with 36 CFR Part 800.10 (c) stating federal agencies are required to notify the Secretary of the Interior of any consultation involving an undertaking at a National Historic Landmark. A letter was sent, documenting the Preferred Alternative project description, to the CO SHPO and NPS on 23 July 2009.

The CO SHPO replied on 2 September 2009 and concurred with the response of the NPS on 06 August 2009 agreeing with USAFA's determination of "An Adverse Effect is not anticipated in this undertaking" for construction of the new facility. A copy of the consultation letter is contained in Appendix B. It should be noted that both agencies commented on the design elements of the proposed facility. The Academy has considered in its preliminary design of the Preferred Alternative impacts to the natural landscape, structures and monuments which is a requirement of all design and planning work at the Academy. Through height and alignment studies of the Preferred Alternative structure the determination has been made that it will not impact the protected viewshed from the Northgate or the axis alignment of the Chapel and Cathedral Rock. Notably, the new facility skylight will be aligned along the Polaris Axis which is an important symbol to the Cadets. (See Appendix C)

No impacts to archaeological or traditional resources are likely under the Preferred Alternative. Areas that would be disturbed by demolition activities have already been disturbed during the initial construction and operation of the Cadet Area existing facilities. If archeological resources are inadvertently discovered during demolition, all work would halt at that location and proceed as outlined in the Standard Operating Procedures identified in the USAFA ICRMP (2006).

#### 4.7.2 ALTERNATIVE 2

There is a major impact to Cultural Resources in the form of the Chapel View Corridor. Alternative 2 is in direct alignment with this view corridor as established in the SOM USAFA Master Plan, 1955. However in comparison to Alternative 1, the height of the skylight of the new facility would not be an issue if Alternative 2 were selected.

#### 4.7.3 NO ACTION ALTERNATIVE

Under the No Action alternative, no facilities would be constructed and the CCLD program would operate at its current status. No impacts to cultural resources would be expected. Resources would continue to be managed in compliance with federal law and Air Force regulation. The No Action alternative represents status quo conditions and would not represent any change from the existing environment.

#### 4.7.4 MITIGATION

No mitigation is needed during construction of the Preferred Alternative in regards to cultural resources.

#### 4.7.5 CUMULATIVE AND LONG-TERM IMPACTS

A number of federal regulations and guidelines have been established for the management of cultural resources. Section 106 of the NHPA, as amended, requires federal agencies to take into account the effects of their undertakings on historic properties.

Direct impacts are assessed by identifying the types and locations of proposed activity and determining the exact location of cultural resources that could be affected. Indirect impacts result primarily from the effects of project-induced population increases.

There are no foreseen cumulative and long-term impacts to cultural resources for the construction of the Preferred Alternative with other planned activities in the Cadet Area.

## **4.8 UTILITIES**

### **4.8.1 PREFERRED ALTERNATIVE**

Overall, energy impacts from the implementation of the Preferred Alternative will create no significant environmental consequences due to the Academy's design requirement for a LEED – Platinum Standard facility. The building will comply with the Energy Independence and Security Act (EISA) of 2007. This facility will be in EISA compliance (Section 434) by employing the most energy efficient design, system equipment and controls that are life-cycle cost effective. Thirty percent of hot water requirements will be gained through solar heating (Section 523) only if economically and technically feasible.

### **4.8.2 ALTERNATIVE 2**

Impacts anticipated to occur from Alternative 2 would be similar to those discussed under the Preferred Alternative.

### **4.8.3 NO ACTION ALTERNATIVE**

There would be no changes to energy usage as a result of the No-Action Alternative; thus no positive or negative impacts would be anticipated.

### **4.8.4 MITIGATION**

Due to the energy conservation elements from the construction and subsequent operation of the LEED – Platinum Standard CCLD, mitigation is not required for the Preferred Alternative.

### **4.8.5 CUMULATIVE AND LONG-TERM IMPACTS**

The Preferred Alternative will result in no significant cumulative and long term incremental impacts related to utility consumption when combined with future projects in the Cadet Area. The Preferred Alternative will have long term positive impacts due to the design and construction elements of a LEED Certified – Platinum Standard facility.

## **4.9 HAZARDOUS MATERIALS/SOLID WASTE**

For purposes of this document, hazardous materials/solid waste impacts would be considered significant if the Preferred Alternative involves the use, production, or disposal of materials in a manner that poses a hazard to people, animal or plant populations in the area affected. A significant impact would also occur if the action were to present an undue potential risk for health or safety-related accidents.

### **4.9.1 PREFERRED ALTERNATIVE**

The proposed facility would consist of a central forum and stage, seminar rooms, a library, as well as administrative service and classroom areas. There would be minimal use of hazardous materials, such as janitorial products and printing supplies during operations; however, it would be a minor increase from current conditions. Any hazardous materials will be handled and stored in accordance with applicable regulations and label precautions. As a result of operations there also will be an expected increase in solid waste. The management of this increase in solid waste generation will need to be addressed by the



## Pollution Prevention Program for the Academy.

During construction, small quantities of hazardous waste may be generated from vehicle maintenance activities, such as parts degreasing. The possibility for even these very small amounts of materials to migrate offsite or impact area natural resources would be insignificant by the use of common construction practices such as drip trays, mats, regular removal of fluids during longer vehicle storage periods, and the application of standard BMPs.

In the event that a spill incident does occur, the Academy implements a Hazardous Materials Emergency Planning and Response Plan (2008) that describes preventative actions that should be taken to reduce the potential for hazardous materials from entering the environment and provides guidance concerning the containment and cleanup of spills. The Academy also has a Hazmat Management System for distributing hazardous materials and an Installation Hazmat Management Process (IHMP) Team for use at industrial shops on base (INRMP, 2008).

Any issues relating to the potential presence of lead, lead based paint, or asbestos containing materials would be the responsibility of the demolition contractor to address prior and during demolition of any structures, according to state and federal regulations.

### 4.9.2 ALTERNATIVE 2

Impacts anticipated to occur from Alternative 2 would be similar to those discussed under the Preferred Alternative.

### 4.9.3 NO ACTION ALTERNATIVE

There would be no changes as a result of the No-Action Alternative; thus no impacts would occur.

### 4.9.4 MITIGATION

Hazardous waste impacts are expected due to construction of the facility and need to be handled in accordance with the Hazardous Materials Emergency Planning and Response Plan (2008). The construction firm will be responsible for implementing appropriate practices and coordinating with the Academy hazardous waste program manager. Solid waste generation is expected to increase due to operation of the CCLD program and will need to be addressed in accordance with the Academy's current Pollution Prevention Plan program.

### 4.9.5 CUMULATIVE AND LONG-TERM IMPACTS

The Preferred Alternative may cause short-term incremental impacts from the use of hazardous and toxic substances during construction when combined with future projects. Incremental impacts would also result from increased waste from heavy construction equipment (i.e. hydraulic fluid), addition of POVs, and/or cleaners or solvents. Overall cumulative impacts from hazardous and toxic substances would not be significant. Overall cumulative impacts from the generation of solid waste during operation of the CCLD program will be minor and will be addressed by the current Pollution Prevention Plan for the Academy.

## 4.10 TRANSPORTATION

Potential impacts to transportation are considered significant if the Preferred Alternative would disrupt or improve current transportation patterns and systems, deteriorate or improve existing levels of service, change existing levels of safety, and disrupt and deteriorate current installation activities.

### 4.10.1 PREFERRED ALTERNATIVE

Overall, potential transportation impacts from the Preferred Alternative will be moderate, from a point of reference of a decrease in Cadet transportation needs to off-base activities. During the construction phases of the Preferred Alternative, a temporary increase in vehicular traffic into and out of the Preferred

Alternative site is expected, including the use of heavy equipment.

Transportation impacts resulting from the daily operations of the proposed CCLD program are expected to improve by reducing the amount of driving time of cadets because the consolidation of the new center will promote staying in one place rather than driving to various locations.

#### 4.10.2 ALTERNATIVE 2

Impacts anticipated to occur from Alternative 2 would be similar to those discussed under the Preferred Alternative.

#### 4.10.3 NO ACTION ALTERNATIVE

There would be no changes as a result of the No-Action Alternative; thus no impacts would occur.

#### 4.10.4 MITIGATION

Due to the positive impact from the construction and subsequent operation of the CCLD program, mitigation is not required for the Preferred Alternative.

#### 4.10.5 CUMULATIVE AND LONG-TERM IMPACTS

The Preferred Alternative may cause incremental impacts to transportation when combined with future projects. Short term incremental impacts would result from increases in vehicular traffic from construction activities. Long term decrease in vehicular traffic would be caused by use of the Preferred Alternative.



## SECTION 5- LIST OF PREPARERS

| <u>Name</u>         | <u>Title</u>                                   | <u>Experience/Education</u>                                  |
|---------------------|------------------------------------------------|--------------------------------------------------------------|
| Jay Burgoon         | Toxics and Pests Management                    |                                                              |
| Amy R. Dalton       | Project Manager                                | 6 years, B.S. Natural Resources, M.S. Environmental Planning |
| Jeannie Duncan      | Pollution, Solid Waste and Air Quality Manager |                                                              |
| Loren Lauvray       | Project Manager                                | 4 years, B.S. Engineering                                    |
| Matt Lewis          | Water Quality Manager                          |                                                              |
| Jennifer McCorkle   | Environmental Planner                          |                                                              |
| David B. McCormack  | Program Manager                                | 27 years, B.S. Mechanical Engineering                        |
| Nancy V. Smith      | Senior Project Manager                         | 22 years, B.S. Geology                                       |
| Julie Wardle        | GIS Analyst                                    |                                                              |
| Christopher Simpson | Area Engineering Programs Manager              |                                                              |
| Neal Thatcher       | Hazardous Waste Manager                        |                                                              |

## **SECTION 6- CONSULTATION AND COORDINATION**

Tom Berry – Center for Character and Leadership Development  
Duane Boyle – USAFA Architect  
Jay Burgoon – USAFA Toxics and Pests Management  
Brian Bush – USAFA Environmental Law Attorney  
Jeanie Duncan – USAFA Pollution, Solid Waste and Air Quality Manager  
Jennifer Hewett- USAFA Community Planner  
Matthew Lewis – USAFA Water Quality Manager  
Jennifer McCorkle – USAFA Environmental Planner  
Christopher Simpson- USAFA Civil Engineer  
Neal Thatcher – Hazardous Waste Manager  
Julee Wardle – USAFA GIS Analyst  
Victoria Williams – USAFA Cultural Resources  
Paul Womble – AFCEE, MILCON Representative



## SECTION 7- REFERENCES

- Colorado Springs, CO Metropolitan Statistical Area Characteristics 2006-2008. American Community Survey, US Census Bureau. Retrieved from <http://factfinder.census.gov> on October 27, 2009.
- CTL | Thompson Incorporated. Geotechnical Investigation, Center for Character and Leadership Development, United States Air Force Academy, Colorado Springs, Colorado, October 22, 2009.
- CTL | Thompson Incorporated. Asbestos Survey, United States Air Force Academy, Center for Character and Leadership Development, Arnold Hall, Colorado springs, Colorado. October 29, 2009.
- Pikes Peak Area Council of Governments. CO Maintenance Plan Update. September, 2009.  
[http://www.ppacg.org/cms/index.php?option=com\\_content&task=view&id=320&Itemid=48](http://www.ppacg.org/cms/index.php?option=com_content&task=view&id=320&Itemid=48)
- Population Projections for Colorado Springs MSA. Retrieved from  
<http://proximityone.com/situation/17820.htm> on October 25, 2009
- Population Projections for Colorado. US Census Bureau. Retrieved from  
<http://www.census.gov/population/www/projections/projectionsagesex.html> on October 25, 2009.
- Regional Economic Accounts. Bureau of Economic Analysis. Retrieved from  
[www.bea.gov/regional/reis/action.cfm](http://www.bea.gov/regional/reis/action.cfm) on October 27, 2009.
- Soil Conservation Service. United States Department of Agriculture. Soil Survey of El Paso County Colorado. 1981.
- SOM LEED Workshop for CCLD Meeting Minutes, 05 October 2009.
- Unemployment Data. Bureau of Labor Statistics. Retrieved from the [www.bls.gov](http://www.bls.gov) on October 26, 2009.
- United States Air Force Academy. Conservation and Management Plan for Preble's Meadow Jumping Mouse. Colorado Natural Heritage Program, 1999.
- United States Air Force Academy. EIAP Submission Tracking. Center for Character and Leadership Development. Air Force Forms 813 and 814. March 18, 2009.
- United States Air Force Academy. Environmental Assessment. Golf Learning Center and Driving Range. March 2007.
- United States Air Force Academy. General Plan. 2005.
- United States Air Force Academy. Integrated Natural Resources Management Plan. E2M. September, 2008.
- United States Air Force Academy. USAF Academy Land Use Plan: 1988
- Varnes, David J., and Glenn R. Scott. Geological Survey. United States Department of the Interior. General and Engineering Geology of the United States Air Force Academy Site Colorado. Washington DC: United States Government Printing Office, 1967.

## SECTION 8- ACRONYM LIST

|                   |                                                        |
|-------------------|--------------------------------------------------------|
| µg/m <sup>3</sup> | micrograms per cubic meter                             |
| AFH               | Air Force Handbook                                     |
| AFI               | Air Force Instruction                                  |
| AIRFA             | American Indian Religious Freedom Act                  |
| APE               | Area of Potential Effects                              |
| AT/FP             | Anti-terrorism/Force Protection                        |
| BCC               | Bird of Conservation Concern                           |
| BEA               | Bureau of Economic Analysis                            |
| BLS               | Bureau of Labor Statistics                             |
| BMP               | best management practice                               |
| BRAC              | Base Realignment and Closure                           |
| CAA               | Clean Air Act                                          |
| CAIR              | Clear Air Interstate Rule                              |
| CCC               | Civilian Conservation Corps                            |
| CCLD              | Center for Character and Leadership Development        |
| CDPHE             | Colorado Department of Health and Environment          |
| CEQ               | Council on Environmental Quality                       |
| CFR               | Code of Federal Regulations                            |
| CO                | carbon monoxide                                        |
| CSU               | Colorado Springs Utilities                             |
| CWA               | Clean Water Act                                        |
| dB                | decibel                                                |
| dBA               | A-weighted decibel                                     |
| DoD               | U.S. Department of Defense                             |
| EA                | Environmental Assessment                               |
| ECM               | Erosion Control Measure                                |
| EIAP              | Environmental Impact Analysis Process                  |
| EIS               | Environmental Impact Statement                         |
| EISA              | Energy Independence and Security Act                   |
| EO                | Executive Order                                        |
| EPA               | U.S. Environmental Protection Agency                   |
| ESA               | Endangered Species Act                                 |
| FEMA              | Federal Emergency Management Agency                    |
| FNSI              | Finding of No Significant Impact                       |
| HUC               | Hydrologic Unit Code                                   |
| HVAC              | heating, ventilation, and air conditioning             |
| ICRMP             | Integrated Cultural Resource Management Plan           |
| INRMP             | Integrated Natural Resources Management Plan           |
| ISCP              | Installation Spill Contingency Plan                    |
| LEED              | Leadership in Energy and Environmental Design          |
| MBTA              | Migratory Bird Treaty Act                              |
| MSA               | Metropolitan Statistical Area                          |
| NAAQS             | National Ambient Air Quality Standards                 |
| NABCI             | North American Bird Conservation Initiative            |
| NAGPRA            | Native American Graves Protection and Repatriation Act |
| NEPA              | National Environmental Policy Act                      |
| NHPA              | National Historic Preservation Act                     |
| NO <sub>2</sub>   | nitrogen dioxide                                       |
| Nox               | nitrogen oxides                                        |
| NOA               | Notice of Availability                                 |
| NOI               | Notice of Intent                                       |
| NPDES             | National Pollutant Discharge Elimination System        |
| NRCS              | Natural Resource Conservation Service                  |
| NRHP              | National Register of Historic Places                   |
| O <sub>3</sub>    | Ozone                                                  |
| OSHA              | Occupational Safety and Health Administration          |

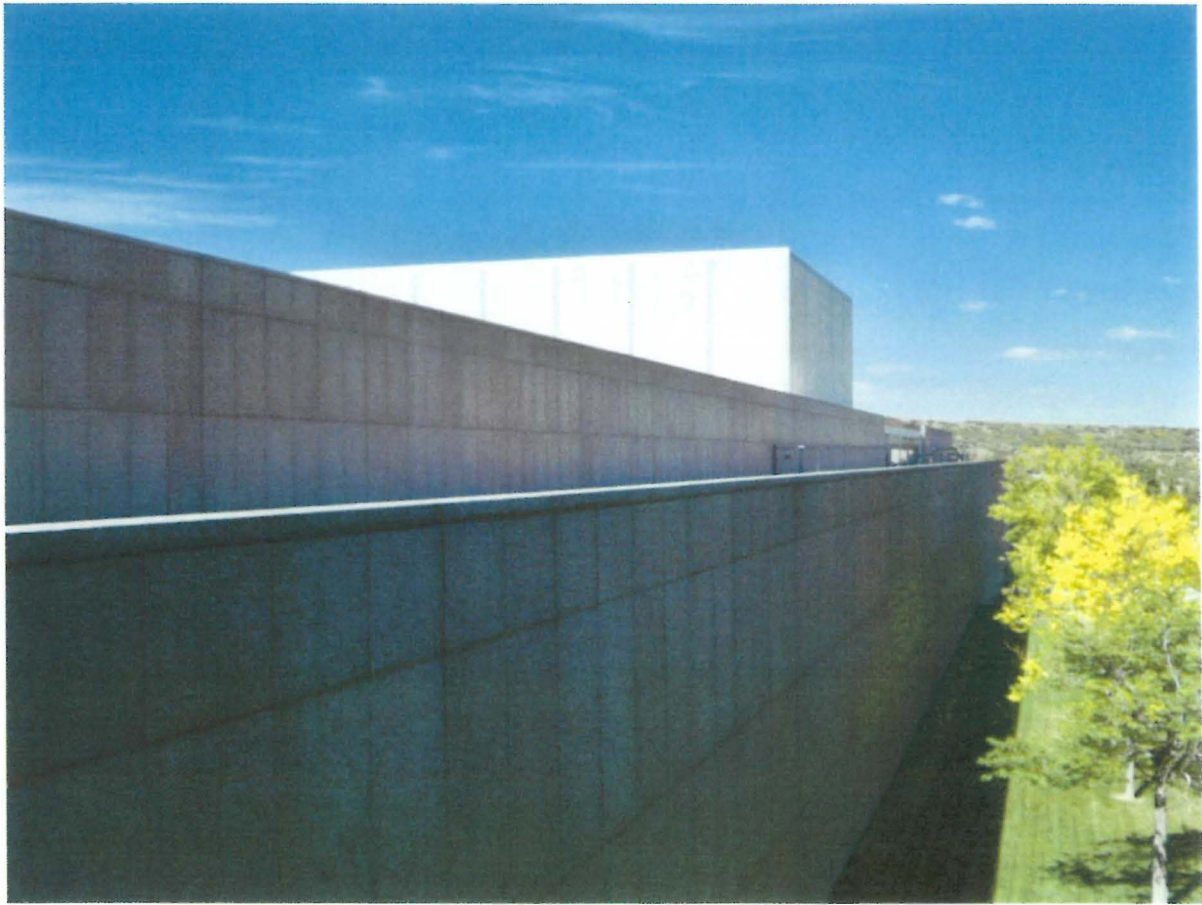


|       |                                                                               |
|-------|-------------------------------------------------------------------------------|
| OWS   | Oil/Water Separator                                                           |
| Pb    | Lead                                                                          |
| PM2.5 | particulate matter with an aerodynamic size less than or equal to 2.5 microns |
| PM10  | particulate matter with an aerodynamic size less than or equal to 10 microns  |
| POV   | Personal Occupancy Vehicle                                                    |
| PPACG | Pikes Peak Area Council of Governments                                        |
| ppm   | parts per million                                                             |
| PSD   | Prevention of Significant Deterioration                                       |
| RCRA  | Resource Conservation and Recovery Act                                        |
| REC   | Recognized Environmental Conditions                                           |
| ROI   | region of influence                                                           |
| RTV   | rational threshold value                                                      |
| SDD   | Sustainable Design and Development                                            |
| SF    | Square Feet                                                                   |
| SHPO  | State Historic Preservation Office                                            |
| SO2   | sulfur dioxide                                                                |
| SOP   | standard operating procedure                                                  |
| SOx   | sulfur oxides                                                                 |
| SPCC  | Spill Prevention, Control, and Countermeasures                                |
| SVOC  | semi-volatile organic compound                                                |
| SWPPP | Storm Water Pollution Prevention Plan                                         |
| SY    | Square Yards                                                                  |
| TEOM  | Tapered Element Oscillating Microbalance                                      |
| Tpy   | tons per year                                                                 |
| TSCA  | Toxic Substances Control Act                                                  |
| UFC   | Unified Facilities Criteria                                                   |
| USACE | U.S. Army Corps of Engineers                                                  |
| USDA  | United States Department of Agriculture                                       |
| USFWS | U.S. Fish and Wildlife Service                                                |
| UST   | underground storage tank                                                      |
| VOC   | volatile organic compound                                                     |
| WWTP  | Wastewater Treatment Plant                                                    |

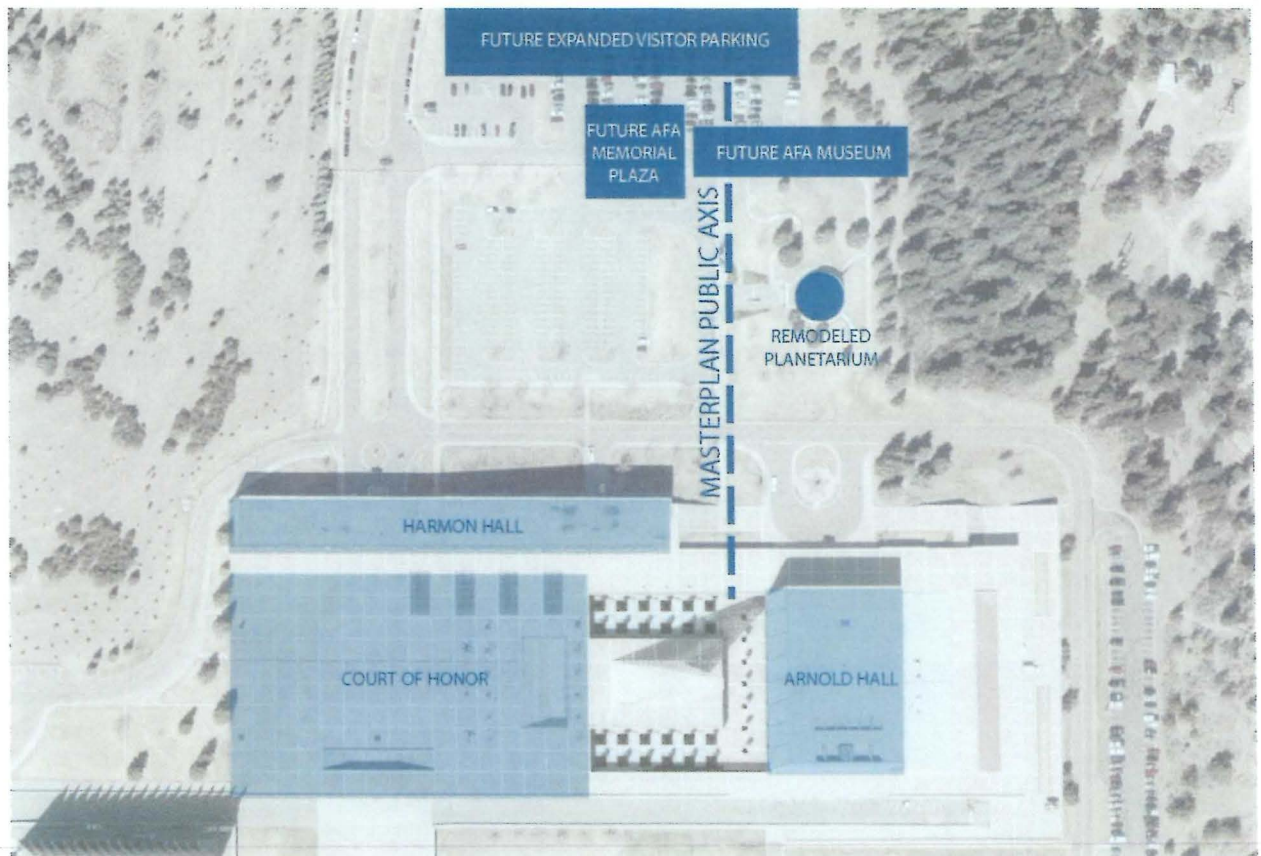


Photograph #1  
CCLD Rendering looking North toward Arnold Hall

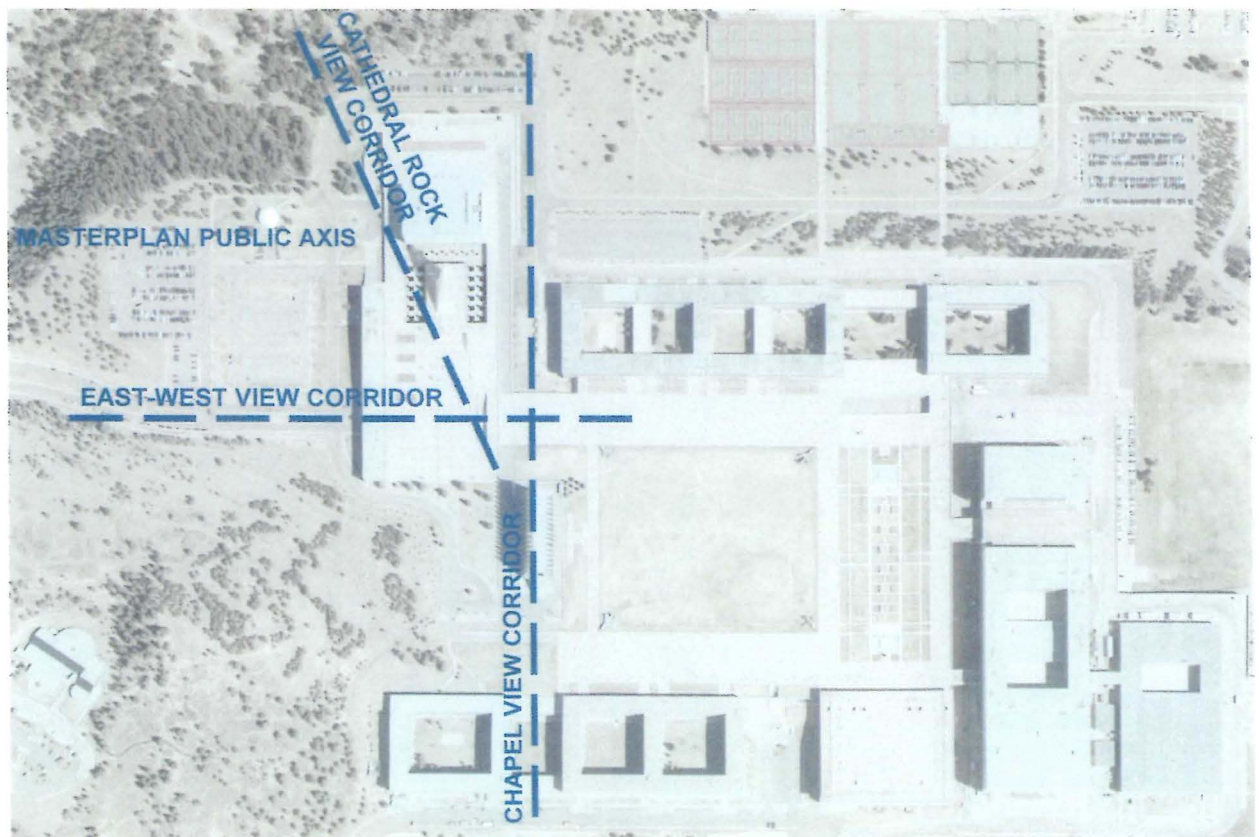




**Photograph #2**  
**Looking north along wall, east of Honor Court and Arnold Hall**



**Photograph #3**  
**Illustration of Future Planned Projects near the Preferred Alternative**



**Photograph #4**



**Illustration of Protected View Corridors within the Cadet Area**



**Photograph #5**

**View looking south from northern most edge of Honor Court**

## APPENDIX B: AGENCY CONSULTATION AND COORDINATION





 OFFICE of ARCHAEOLOGY and HISTORIC PRESERVATION

2 September 2009

CHS #55371

Lieutenant Colonel Justin C. Davey  
USAF Civil Engineer  
8120 Edgerton Drive, Suite 40  
USAF Academy, CO 80840-2400

RE: Center for Character and Leadership Development, United States Air Force Academy,  
El Paso County

Dear Lt. Col. Davey:

Thank you for your recent correspondence dated 23 July 2009, concerning the proposed construction of a new building within the boundaries of the Cadet Area National Historic Landmark District (SEP.4680). Our office has reviewed the submitted materials. The new building, known as the Center for Character and Leadership Development, will be constructed between Arnold Hall and the Cadet Chapel.

We concur with the 6 August 2009 letter from Thomas G. Keohan of the National Park Service that recommends changing the color and tint of the pylon glass to a darker color. Although the white color is similar to the color of the nearby Arnold Hall, the predominant color scheme at the Academy is one of darker glass and aluminum panels. We would recommend the use of an aluminum color for the steel as opposed to white or stainless; this will allow the building to blend into the built environment.

The new construction will also displace some existing objects at the Court of Honor, including metal sculptures of historic aircraft and landscaping features. If these are to be re-installed at a new location, we request that our office be consulted prior to the start of work.

If you have any questions, please contact Joseph Saldibar, Architectural Services Manager, at (303) 866-3741.

Sincerely,



Edward C. Nichols  
State Historic Preservation Officer, and  
President, Colorado Historical Society

---

OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION

303-866-3392 \* Fax 303-866-2711 \* E-mail: oahp@chs.state.co.us \* Internet: www.coloradohistory-oahp.org

- 1 -

 COLORADO HISTORICAL SOCIETY

1300 BROADWAY DENVER COLORADO 80203 TEL 303/866-3395 FAX 303/866-2711 www.coloradohistory-oahp.org

## APPENDIX C: DRAFT FINAL COMMENTS

No comments were received from the public during the public review period.