

**STAFF SUMMARY SHEET**

	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	USAFA/ JA	Coord	 USAFA JA 10 MAY 10	6			
2	10 MSG/ CD	Coord	 12 May	7			
3	10 MSG/ CC	Coord	 11 Jun 10	8			
4	10 ABW/ CV	Coord	11 Signed 11 Robison, O-6, 1 Jun 10	9			
5	10 ABW/ CC	Sign	 3 Jun 10	10			

SURNAME OF ACTION OFFICER AND GRADE	SYMBOL	PHONE	TYPIST'S INITIALS	SUSPENSE DATE
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SUBJECT	DATE
Finding of No Significant Impact: New Mobile Aircraft Fire Trainer	6 May 10

**SUMMARY**

- PURPOSE:** Obtain 10 ABW/CC signature on the Finding of No Significant Impact (FONSI) at Tab 1.
- BACKGROUND:** USAFA proposes to construct a Mobile Aircraft Fire Trainer (MAFT). This project will create a site that can appropriately facilitate the use of the MAFT as a tool to train the Fire and Emergency Services Flight. A new site is required because the temporary location is hindering other types of firefighter training exercises. USAFA has prepared this Environmental Assessment (EA) to assess the potential environmental effects resulting from construction and operation of a MAFT within USAFA boundaries.
- DISCUSSION:**
  - Proposed Action:** The Preferred Alternative site for the MAFT is located immediately west of Building 6099, Fire Training Tower. This area of USAFA is currently designed for firefighter training. It has sufficient access for firefighting vehicles and with the construction of the proposed concrete pad, will be able to facilitate the firefighter training exercises without harming the natural environment. The reinforced concrete pad will be approximately 250ft by 130ft at its largest point.
  - Other Alternatives:** The Academy considered extending the northwest corner of the existing concrete pad to facilitate the MAFT training, Alternative 2. The construction of this alternative would require significant soil, and possible bedrock removal and resultant grading to assure proper drainage to acquire the needed space for safety and logistics around the training equipment.
    - Alternatives Considered.** Other considered alternatives were eliminated by applying the site selection criteria. Conducting training off-base required considerable planning and coordination of logistics. In addition, costs for rental of County/City Fire Department facilities and for transportation of trainee's and training staff would be incurred. Another alternative was the option of conducting the MAFT Program by the airfield. The airfield is crowded with gliders and planes and the operational use of the airfield on a daily basis would conflict with the MAFT firefighter training and FAA regulations.
    - No-Action Alternative.** Under the No-Action Alternative, the MAFT would continue to be removed from its temporary location and stored off the concrete pad to facilitate all of the different types of training required by the Academy Fire Department. Falling below their required training levels would impact firefighter mission readiness and emergency services capabilities.
- VIEWES OF OTHERS:** FONSI Public comment period was 19 March through 16 April 2010. No comments were received.
- RECOMMENDATION:** 10 ABW/CC sign FONSI at Tab 1 (2 copies for original signatures).

JUSTIN C. DAVEY, Lt Col, USAF  
 Commander, 10th Civil Engineer Squadron

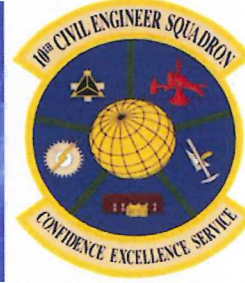
1 Tab  
EA/FONSI

# Report Documentation Page

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# United States Air Force Academy

## Final Environmental Assessment for the Mobile Aircraft Fire Trainer

**04/23/2010**

Final Environmental Assessment  
Mobile Aircraft Fire Trainer  
US Air Force Academy

**FINAL**  
**FINDING OF NO SIGNIFICANT IMPACT (FONSI)**  
**Construction and Operation of a New Mobile Aircraft Fire Trainer**  
**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 (Academy) has prepared an Environmental Assessment (EA) of potential environmental effects associated with construction and operation of a new Mobile Aircraft Fire Trainer (MAFT).

**PURPOSE AND NEED**

The Academy proposes to construct a Mobile Aircraft Fire Trainer (MAFT) to be located near the existing Fire Training Tower. The purpose of the Proposed Action is to create a site that can appropriately facilitate the use of the MAFT as a tool to train the Academy Fire Department. A new site is required because the MAFT is currently set at a temporary location that is hindering other types of firefighter training exercises. If training needs are not met, the USAFA will not meet their mandated readiness requirements and suffer funding consequences and possible mission changes.

**DESCRIPTION OF THE PROPOSED ACTION**

The MAFT training requirements were developed in accordance with AFI 10-210 (Air Force Prime Base Engineer Emergency Force (BEEF) Program) and approved by HQ AF/A7CX (Colonel Donald L. Gleason) on March 21, 2008. The Air Force Fire Emergency Services Training Program, draft July 2009 version, requires yearly airport firefighter live fire training for all Tier 1 firefighters, Tier 2 fire officers, and Tier 3 senior fire officers. To ensure Prime BEEF program effectiveness, commanders, with support from their MAJCOMs, must program for and implement recurring training opportunities for key personnel. The proposed action will provide a permanent training facility for the MAFT that is suitable for its training exercises without hindering other types of firefighter training.

**ALTERNATIVES CONSIDERED**

**Preferred Alternative.** The Preferred Alternative site for the MAFT is located immediately west of building 6099, the Fire Training Tower. This area of the Academy is currently designated for firefighter training, it has sufficient access for firefighting vehicles and with the construction of the proposed concrete pad it will be able to facilitate the firefighter training exercises without harming the natural environment. The reinforced concrete pad will be approximately 250' x 130' at its largest point.

**Alternative 2.** The Academy considered extending the northwest corner of the existing concrete pad to facilitate the MAFT training. The construction of this alternative would require significant soil and possible bedrock removal and resultant grading to assure proper drainage to acquire the needed space for safety and logistics around the training equipment.

**Other Alternatives Considered but Eliminated from Further Study.** Other considered alternatives were eliminated by applying the site selection criteria. Conducting training off-base required considerable planning and coordination of logistics; in addition, costs for rental of County/City Fire Department facilities and for transportation of trainee's and training staff would be incurred. Another alternative was the option of conducting the MAFT Program by the airfield. The airfield is crowded with gliders and planes and the operational use of the airfield on a daily basis would conflict with the MAFT firefighter training and FAA regulations.

**No-Action Alternative.** Under the No-Action Alternative, the MAFT would continue to be removed from its temporary location and stored off of the concrete pad to facilitate all of the different types of training required by the Academy Fire Department. If the Fire Department falls below their required training levels

they would be subject to funding cuts and reprimand for not meeting established training requirements for mission readiness and emergency services.

ENVIRONMENTAL IMPACTS SUMMARY

Seven (7) environmental resource areas were characterized and evaluated for potential impacts for Preferred Alternative, Alternative 2, and the No Action Alternative. No potential impacts were classified as significant. In summary, the proposed action at the Preferred Alternative and Alternative 2 sites would result in minor, short-term impacts to air quality due to construction activities, additionally, minor, short-term and long-term negative impacts would occur to geology and soils, water resources, and, hazardous and toxic materials. No impacts to biological or cultural resources are indicated for the Preferred Alternative. The proposed action at 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.


CONCLUSION

The Academy has chosen implementation of the Preferred Alternative for the MAFT. Direct, indirect, and cumulative impacts of the Preferred Alternative have been considered. No significant adverse impacts from the Proposed Action were identified. Mitigations for Water Resources and Hazardous Waste during construction and operation must be managed 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.

PUBLIC COMMENT

Public comment was invited for a period of 30 days after publication of the notice of availability (NOA) in the Colorado Springs Gazette. A copy of the EA and draft FONSI were made available for public review at the Colorado Springs Public Library Branches: Palmer Lake Branch, 66 Lower Glenway; Monument Branch, 1706 Lake Woodmoor Dr.; Briargate Branch, 9475 Briar Village Pt.; Rockrimmon Branch, 832 Village Center Dr.; and the USAFA, McDermott Library, 2354 Fairchild Drive, Suite 3A10, USAF Academy CO 80840-6214. No public comments were received.

Signature:  
Approved by:

  
RICK J. LOCASTRO, Colonel, USAF  
Commander, 10th Air Base Wing

3 JUN 10  
Date

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**SECTION 1**

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

This chapter has six sections: the purpose of and need for the Proposed Action; the location of the Proposed Action; a summary of the scope of the environmental review, criteria for the Proposed Action, identification of the biophysical resources applicable to the environmental assessment; and a listing of applicable regulatory requirements.

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

The US Air Force Academy (USAFA or Academy) proposes to construct a Mobile Aircraft Fire Trainer (MAFT) to be located near the existing Fire Training Tower. The purpose of the Proposed Action is to create a site that can appropriately facilitate the use of the MAFT as a tool to train the Academy Fire Department.

The proposed action is needed because the MAFT must be located on a site with sufficient access, adequate safety spacing and adequate spacing for logistics of moving Aircraft Rescue Fire Fighting vehicles and with a surface that can withstand the weight of the heavy vehicles and not deteriorate during multiple training sessions. A new site is required because the MAFT is currently set at a temporary location that is hindering other types of firefighter training exercises. AFI10-210 is the regulating document defining the training requirements. Air Force Prime Base Engineer Emergency Force (BEEF) Program training requirements are vetted and approved through the corporate readiness structure. If training needs are not met the USAFA will not meet their mandated readiness requirements and suffer funding consequences and possible mission changes.

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

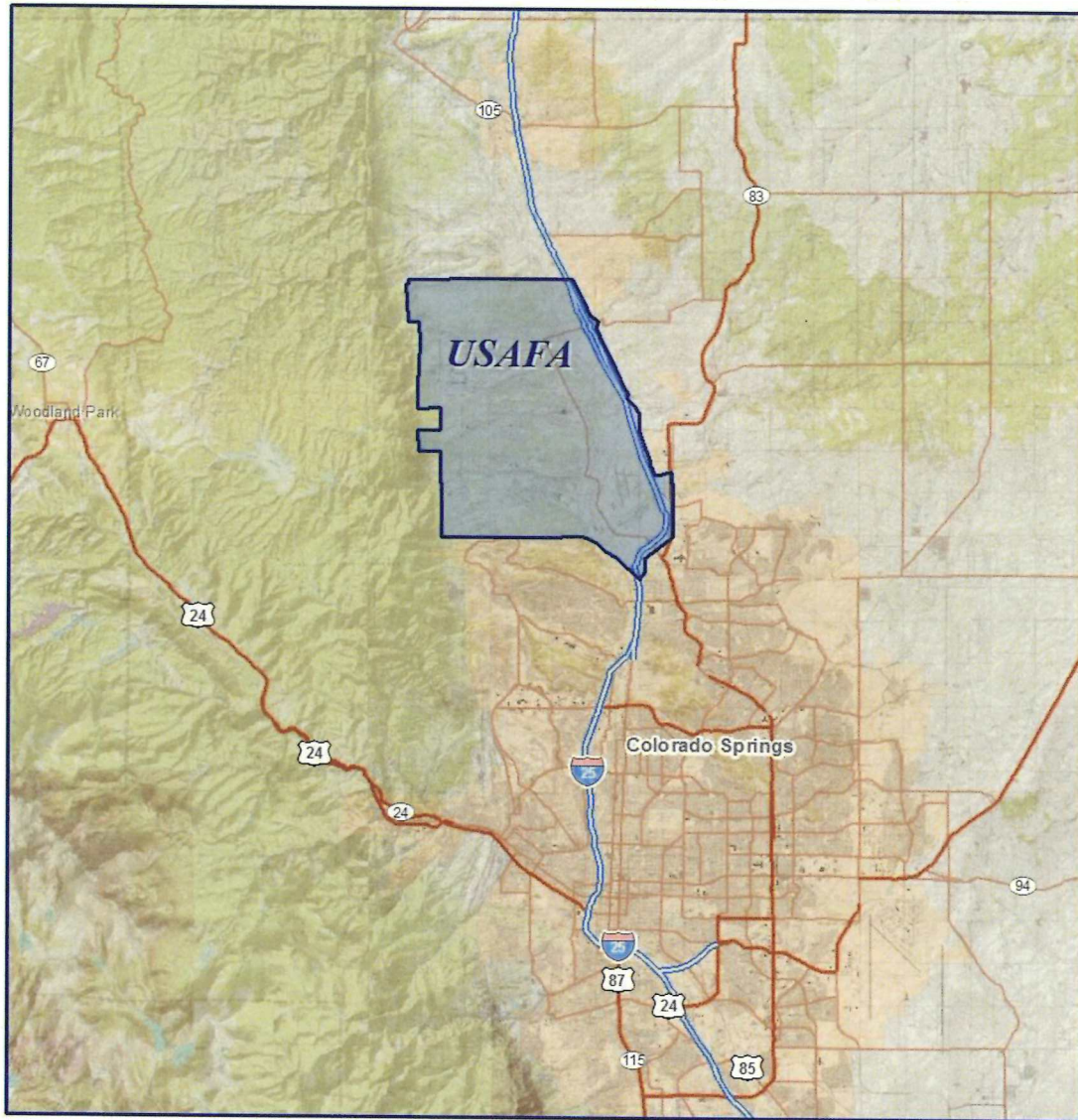
The United States Air Force Academy is located 6 miles north of Colorado Springs and 60 miles south of Denver. Slightly more than 19,000 acres are owned by the U.S. Air Force. Approximately 18,500 acres are dedicated to the mission of the Academy proper and 650 acres are known as Farish Memorial Recreational 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. The proposed concrete pad will be approximately 250'x130' at its largest point and will be located just west of building 6099, the Fire Training Tower (see Figure 2-1).

# MAFT Regional Location



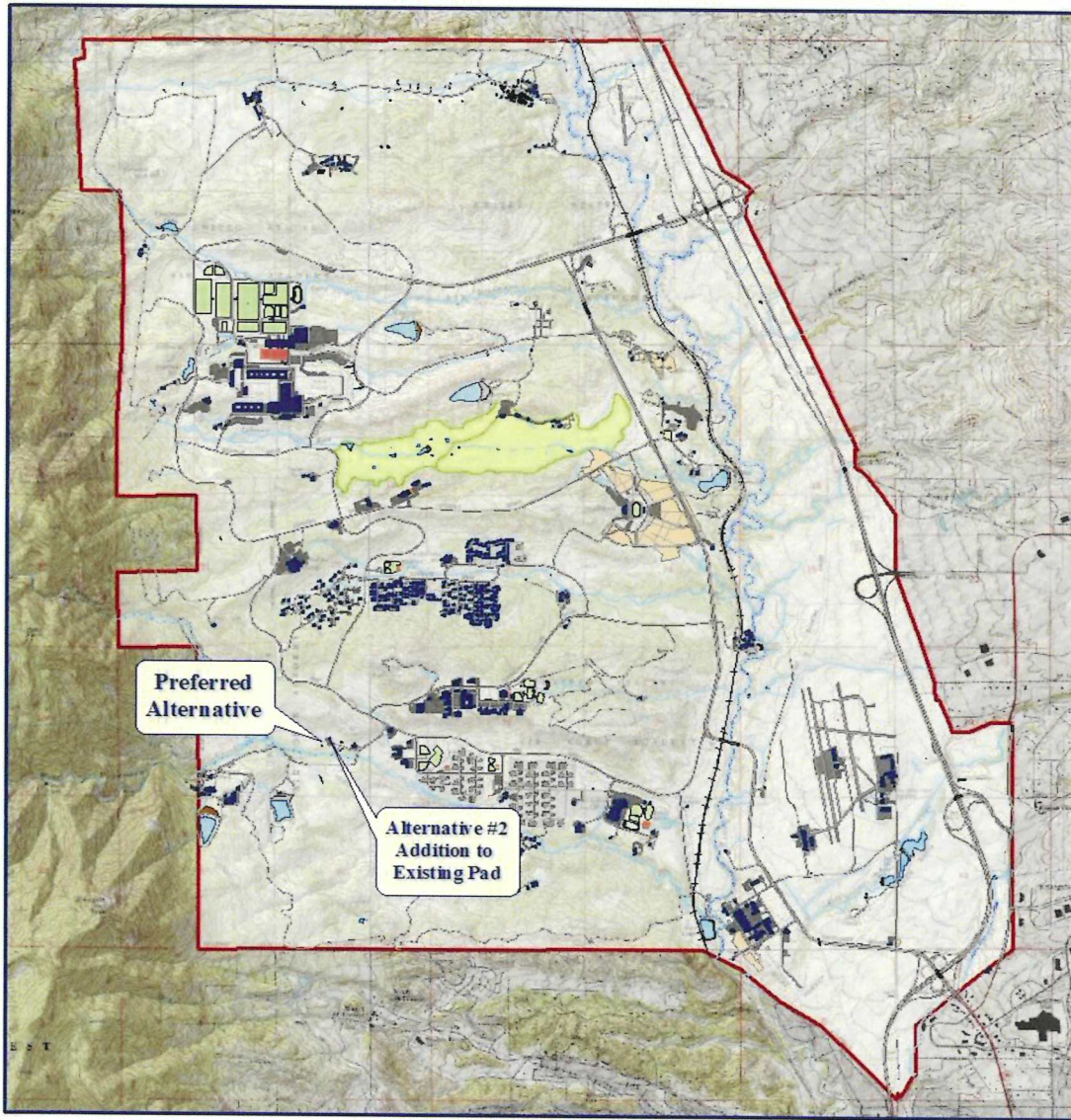
FIGURE 1-1 REGIONAL LOCATION

# USAFA and Colorado Springs Vicinity



**FIGURE 1-2 GENERAL VICINITY MAP**

# MAFT Proposed Location



**FIGURE 1-3 PROJECT LOCATION WITHIN USAFA BOUNDARIES**

### 1.3 SCOPE OF ENVIRONMENTAL REVIEW

The USAFA has prepared this Environmental Assessment (EA) to assess the potential environmental effects resulting from construction of, and operation of, a new MAFT installation at the USAFA proper. This document complies with the Environmental Impact Analysis Process (EIAP) set forth in 32 Code of Regulations (CFR) Part 989, which incorporates Air Force Instruction 32-7061 and implements the National Environmental Policy Act (NEPA), and the regulations implementing NEPA promulgated by the President's Council on Environmental Quality (CEQ) as Title 40 of the CFR, parts 1500-1508. This EA also evaluates any reasonable alternatives to the Proposed Action, including the No-Action Alternative.

This environmental analysis has been conducted in accordance with the President's CEQ regulations, Title 40 of the CFR §§ 1500-1508, as they implement the requirements of the NEPA of 1969, 42 U.S.C. §4321, et seq., and Air Force Instruction (AFI) 32-7061, The Environmental Impact Analysis Process, 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 Proposed Action. Cumulative effects of other ongoing activities also must be assessed in combination with the Proposed Action. 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; 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 11990, Protection of Wetlands; EO 12898, Environmental Justice and EO 13423, Alternative Fuel Vehicles.

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 USAFA. 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 required.

### 1.4 SITE SELECTION CRITERIA

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

- The site should be located in an area of the Academy that is appropriate for firefighter training.
- The site should be located in an area that allows for sufficient access for the Aircraft Rescue Firefighting vehicles.
- The site should have the capability to manage large quantities of water.

- The site should be located and designed to provide maximum protection for the natural habitat.
- AFI 10-210 requires readiness and emergency response training.

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

The following biophysical resources have been identified for study at the Academy: land use, water resources, biological resources, geological resources, cultural resources, and hazardous materials.

Initial environmental analyses indicated that the proposed activities would not result in either short- or long-term impacts to the following resources:

- **Noise** – The proposed action is in a remote area of the Academy. Site construction and the fire training exercises are expected to generate some noise, but no adverse affects are expected due to the remoteness of both alternatives.
- **Socioeconomics** – The socioeconomics impacts of a concrete pad are minimal and both alternatives are expected to have the same socioeconomic impacts thus this resource needs no further discussion.
- **Transportation** – The occasional Aircraft Rescue Firefighting vehicle trip to the MAFT location would be the only expected impact to the transportation resource and this impact would be the same for any alternative.
- **Utilities** – The only impact to the utility resources would be the use of water from the nearby fire hydrant which will be discussed under water resources. The MAFT is not expected to have any impacts to the energy, solid waste or communications utilities.
- **Air Installation Compatible Use Zone Program** - 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 near the MAFT installation. For this reason, accident potential, encroachment, airspace, and airfield operations are not evaluated further in this EA.
- **Air Quality** - Further evaluation of Air Quality during operation is eliminated based on the proposed facility (fire training facilities) is exempt from air conformity requirements under CDPHE 5CCR 1001-3, Regulation 1, Section 11.C.2. Air quality impacts will be analyzed for construction activities.

## 1.6 APPLICABLE REGULATORY REQUIREMENTS

The Proposed Action is required to meet AFI 10-210 mission readiness and emergency response training.

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. The following permits are required for the Proposed Action.

- Comply with EPA NPDES General Permit No. COR10000F and COR042000 for Storm Water Discharges from Construction Activities.
- Permit AF-103 (digging permit).
- Prepare a Storm Water Pollution Prevention Plan (SWPPP) for approval by 10 CEV.
- Install and adequately maintain all best management practices (BMP) described in the construction permit and relevant storm water control guidance documents.
- Maintain a copy of the SWPPP, electronic NOI, and NPDES General Permit No. COR10000F for Storm Water Discharges from Construction Activities, inspection reports and all applicable permit documentation requirements at the construction site.

- Submit a Notice of Termination (NOT) (EPA Form 3510-7) to the Contracting Officer (CO) and 10 CEV after:
  - Consultation with and release criteria approval by CEV
  - All construction debris, equipment, materials, and facilities are removed
  - Construction areas are inspected by CEV or the CO Technical Representative
  - All temporary storm water BMPs are removed
  - Ground cover is at 70 percent or when final stabilization of the site has been achieved as defined by the permit or other release criteria identified in the construction permit
  - Final inspection.

**SECTION 2**

## SECTION 2 – DESCRIPTION OF ALTERNATIVES

### 2.1 BACKGROUND

The MAFT training requirements were developed IAW AFI 10-210 (Air Force Prime Base Engineer Emergency Force (BEEF) Program) and approved by HQ AF/A7CX (Colonel Donald L. Gleason) on March 21, 2008. This Category II training requires Aircraft Live Fire Training once every 12 months. The Air Force Fire Emergency Services Training Program, draft July 2009 version, requires yearly airport firefighter live fire training for all Tier 1 firefighters, Tier 2 fire officers, and Tier 3 senior fire officers. To ensure Prime BEEF program effectiveness, commanders, with support from their MAJCOMs, must program for and implement recurring training opportunities for key personnel.

Currently the MAFT is located on a concrete pad in front of the existing Fire Training Tower. This temporary location allows the MAFT to be utilized for training but it is hindering other types of training exercises. The existing concrete pad is not large enough to handle all of the different types of training exercises.

The proposed action will provide a permanent training facility for the MAFT that is suitable for its training exercises without hindering other types of training.

### 2.2 HISTORY OF FORMULATION OF ALTERNATIVES

The USAFA considered several alternatives for the construction of the new MAFT location. Alternative 1 is to construct a new concrete pad immediately west of the existing location. Alternative 2 is to extend the existing concrete pad. The difference between the two alternatives is the location of the concrete pad.

### 2.3 ALTERNATIVE CONSIDERED BUT ELIMINATED

Other considered alternatives were eliminated by applying the site selection criteria in section 1.4. Conducting training off-base required considerable planning and coordination of logistics; in addition, costs for rental of County/City Fire Department facilities and for transportation of trainees and training staff would be incurred. Another alternative considered was the option of conducting the MAFT Program by the airfield. The airfield is crowded with gliders, planes and the operational use of the airfield on a daily basis would conflict with the MAFT training and scheduling requirements, thus the location would not be appropriate for firefighter training. Additionally, Federal Aviation Authority (FAA) rules and regulations prohibit construction and operation of non-airfield facilities within a specified area, which could impede airfield operations.

### 2.4 DETAILED DESCRIPTION OF ALTERNATIVE 1

To best serve the safety and needs of the Academy, the USAFA proposes to construct a new installation to best facilitate the use of the MAFT.

**Site Description.** The site of the MAFT is located immediately west of building 6099, the Fire Training Tower. This area of the Academy is currently designated for firefighter training, it has sufficient access for firefighting vehicles and with the construction of the proposed concrete pad it will be able to facilitate the firefighter training exercises without harming the natural environment. The site will allow access to the MAFT without conflicts from the existing firefighter training structures.

**Project Description.** The pad will be approximately 250' x 130' at its largest point. It will be made of concrete to withstand the fire fighting measures, like heat and large quantities of water, and substantial enough to support the heavy Aircraft Rescue Firefighting vehicles. The drainage requirements can be met with a collection system of swales around the new apron and a detention pond. A 2 inch diameter

orifice in the detention pond can limit the release of water at historical amounts. A small area of erosion protection in the form of 6" riprap is recommended at the discharge of the detention pond.

All construction documents must comply with the latest version of the USAFA Design Standards, the USAFA CAD standards, the A-E Standards manual, and the Department of Defense Unified Facility Criteria (UFC), including, but not limited to UFC 1-200-01 (Building Requirements), 3-600-01 (Fire Protection), 4-010-01 (Anti-Terrorism Standards), and all others shown on the UFC website: ([http://65.204.17.188/report/doc\\_ufc.html](http://65.204.17.188/report/doc_ufc.html)).

The MAFT is designed to provide mock-ups for the following types of training fires:

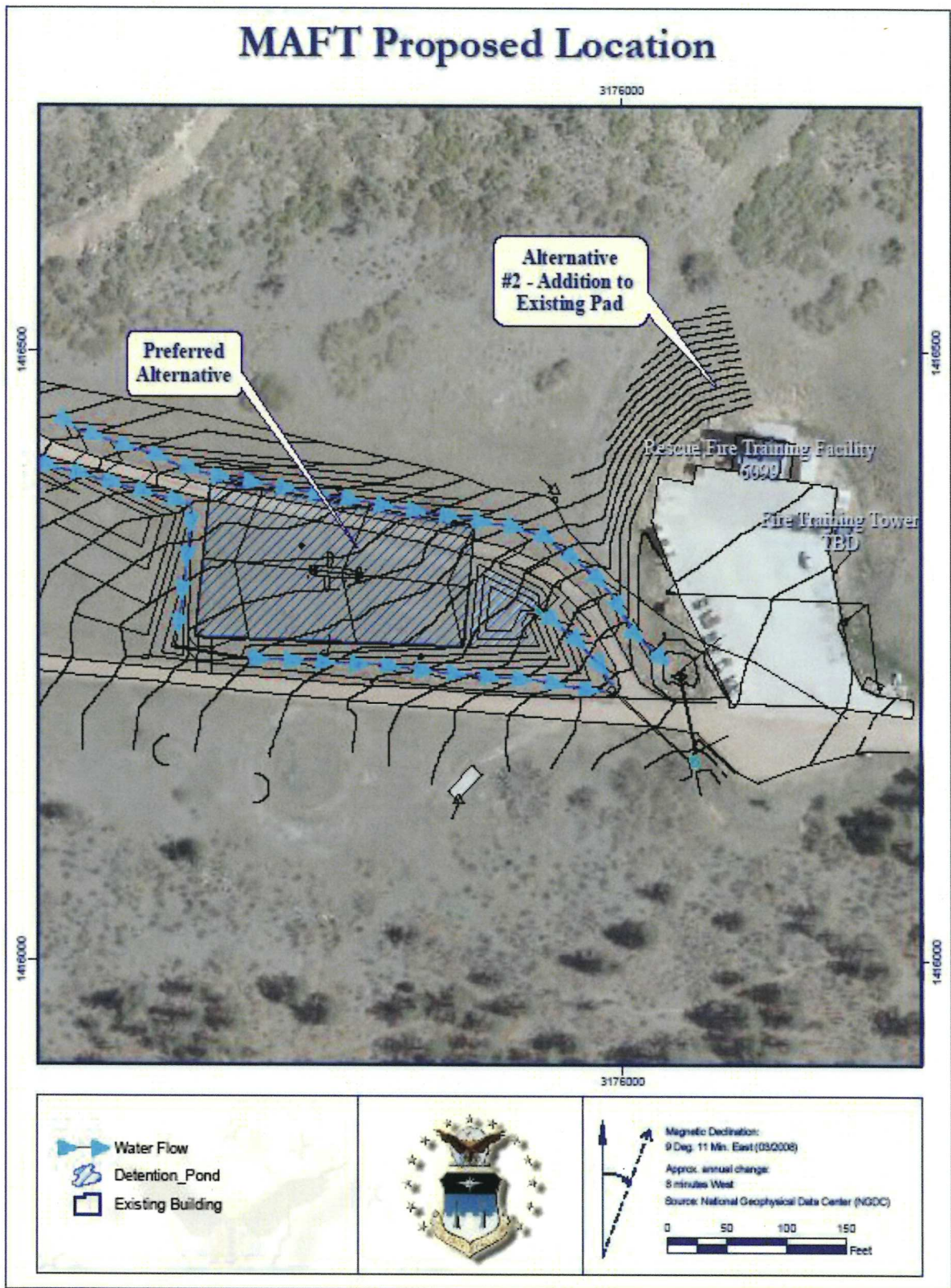
1. Cockpit Fires
2. Passenger Fires
3. Low Wing Engine Fires
4. Wheel Brake Fires
5. 3-D fire under low wing engine mockup
6. Fuselage Fire

#### 2.4.1 CONSTRUCTION ACTIVITIES

Construction of the Proposed Action would require site clearing and project construction as described herein.

The proposed site for the MAFT will be cleared of vegetation and debris. The maximum total area to be cleared is approximately 1 acre, though it is anticipated that the actual clearance would be less than 1 acre.

To prevent excessive erosion, to reduce runoff velocity, and to control the proliferation of noxious weeds, disturbed areas outside of the newly installed concrete pad would be re-seeded and stabilized upon project completion.



**FIGURE 2-1 LOCATION OF ALTERNATIVES**

## **2.5 DESCRIPTION OF ALTERNATIVE 2**

### **EXTENTION OF EXISTING CONCRETE**

The USAFA considered extending the northwest corner of the existing concrete pad to facilitate the MAFT training. For the purpose of this report, the environmental assessment is completed for Alternative 2 with the understanding that this alternative could function but the access would still have conflicts with the other training exercises due to the limited space and clearance around the equipment.

#### **2.5.1 CONSTRUCTION ACTIVITIES**

The construction of this alternative would require significant soil and possible bedrock removal and resultant grading to assure proper drainage to acquire the needed space for safety around the training equipment.

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

Currently, the MAFT is temporarily located on the existing concrete pad. Under the No-Action Alternative, the MAFT would have to be removed from its temporary location and stored off of the concrete pad to facilitate all of the different types of training required by the Academy Fire Department. The MAFT would then have to be moved on and off the existing concrete pad for training to take place. The required relocation of the MAFT to do the training would most likely reduce the MAFT training from a quarterly rotation of different departments to a once a year training for all departments. If any fire fighters cannot attend that one training opportunity then the Academy Fire Department could potentially fall below their required training levels.

If the Fire Department falls below their required training levels due to implementation of the No-Action Alternative then they would be subject to funding cuts and reprimand for not meeting established training requirements for mission readiness and emergency services.

## **2.7 IDENTIFICATION OF THE PREFERRED ALTERNATIVE**

The preferred alternative is to implement Alternative 1 as described in Section 2.4.

## **2.8 SUMMARY 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 COMPARISONS OF ALTERNATIVES**

Resources	Preferred Alternative	Alternative 2	No-Action Alternative
Land Use	No significant short term, long term or cumulative impact to land use.	No significant short term, long term or cumulative impact to land use.	No impacts would occur
Water Resources	No cumulative impacts to surface water or floodplains. To mitigate any potential water resource impacts, pre and post construction storm water BMPs should be implemented	No cumulative impacts to surface water or floodplains. To mitigate any potential water resource impacts, pre and post construction storm water BMPs should be implemented	Historic rates of discharge could be exceeded if all training were to occur on one day.
Biological Resources	Minor impacts to native vegetation and wildlife from construction; no impacts to Threatened and Endangered Species; no impacts to wetlands	Minor impacts to native 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 to insignificance through use of Best Management Practices (BMPs), no long-term cumulative impacts.	Excavation and relocation of large amounts of soil would need to occur for this alternative, resulting in a greater impact to the geological environment. Implementation of BMP's and a reclamation plan would make action insignificant.	No impacts would occur
Cultural Resources	No minor or long-term cumulative impacts.	No minor or long-term cumulative impacts.	No impacts would occur
Air Quality	Minor insignificant short-term impact during construction may occur. Long term operation impacts (fire training exercises) are exempt according to CDPHE 5CCR 1001-3, Regulation 1, Section 11.C.2.	Minor short-term impact during construction may occur. Long term operation impacts (fire training exercises) are exempt according to CDPHE 5CCR 1001-3, Regulation 1, Section 11.C.2.	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 to be managed to insignificance through Installation Hazmat Management Process (IHMP)	Minor, short-term impacts during construction. Minor, long-term impacts related to solid-waste and use of hazardous materials during operations to be managed to insignificance through Installation Hazmat Management Process (IHMP)	No impacts would occur

**SECTION 3**

## **SECTION 3 – AFFECTED ENVIRONMENT**

### **3.1 LAND USE**

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

To guide future development and land use decisions on USAFA, the Academy prepared a land use component to the General Plan for the 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 MAFT installation would be located in the Western Border area of the Academy in an area currently designated as Open Space (Preserved Natural) and future designation of Field Training.

- **Open Space (Preserved Natural):** This land use pertains to non-recreation land that does not contain buildings or other built improvements. Conservation areas, required buffer space, and utility easements are included. This land is not appropriate for building or recreational open space for a variety of reasons, including steep slopes, animal habitats, water bodies, streams, floodplain, or adjacency to a National Forest. It is imperative that the remaining natural open areas not be considered a land bank for development.

# MAFT Proposed Location Existing Land Use

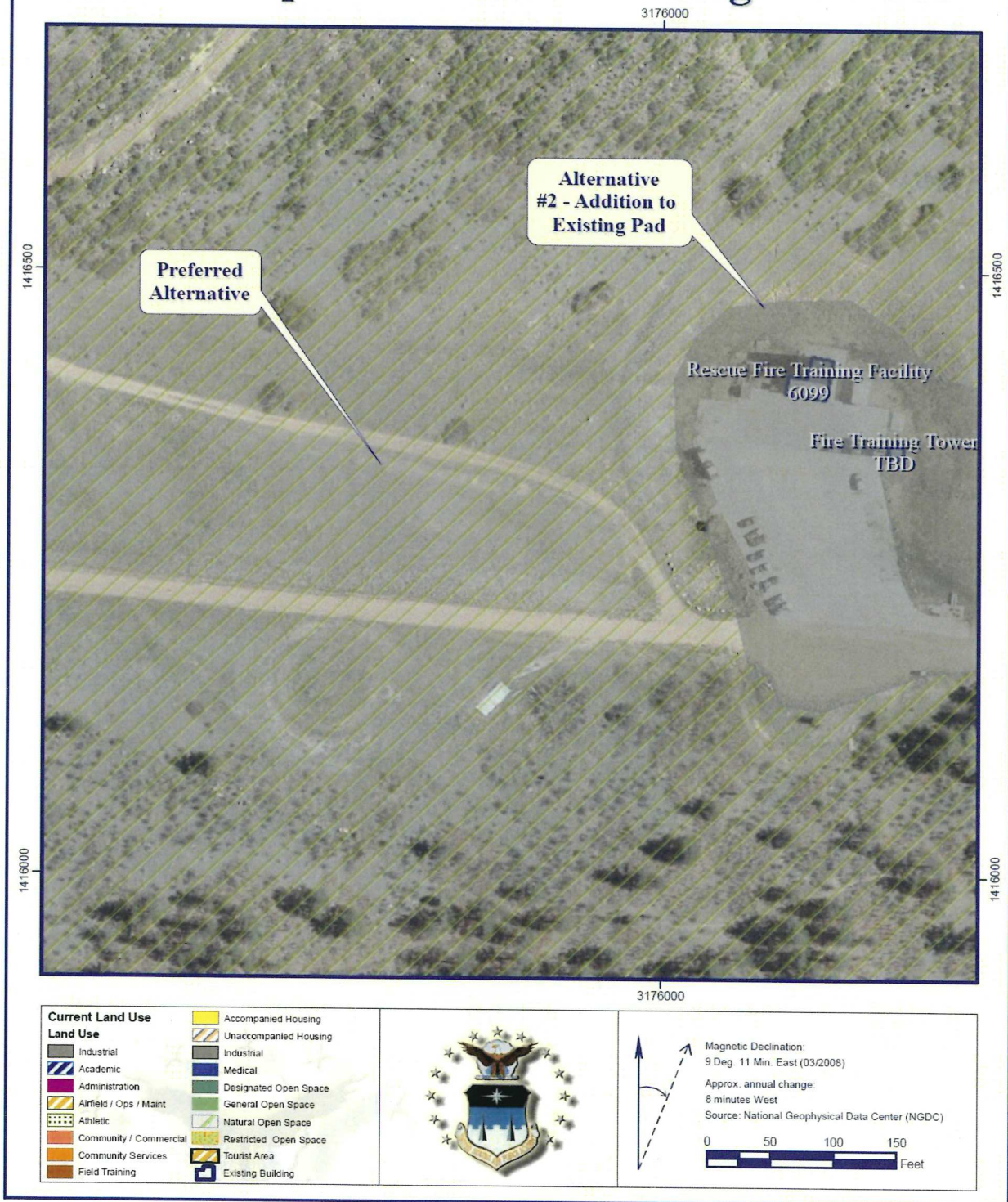


FIGURE 3-1 CURRENT LAND USE PLAN

### 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 1988 USAF Academy Land Use Plan suggested the following policies and strategies that are applicable to the proposed action:

- 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. Since the completion of the Academy, a series of small-scale structures used for storage, maintenance, office, housing, and community needs have developed around the base (i.e. Contractor Storage Area). All functions that occur in these scattered structures can and should be accommodated within specified area boundaries.
- Academy buffer areas on all boundaries should be free from any structures, leaving natural open space between the Academy and adjacent development. This will protect the Academy's natural setting and assure functional and visual harmony between the Academy and surrounding development.
- Maintain scrutiny and control of easements on Academy property.

With the above strategies and policies in mind, the future land use plan for the USAFA was created. The future land use plan designates the area of the proposed MAFT installation as Field Training.

**Field Training:** This land use category includes those areas where outdoor military training takes place. Specific activities include survival training; combat arms training; initial force beddown; rapid runway repair; and obstacle, confidence and reaction courses. Most field training occurs within Jacks Valley.

## 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. The Academy has preserved Monument Creek and it represents one of the natural remaining plains streams in the upper Arkansas River drainage. 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 feature in the vicinity of the proposed actions is the West Monument Creek a few hundred feet to the south. This creek traverses from the Rampart Reservoir west of the USAFA to the southeast where it joins with Monument Creek near the southern border of the Academy. Monument

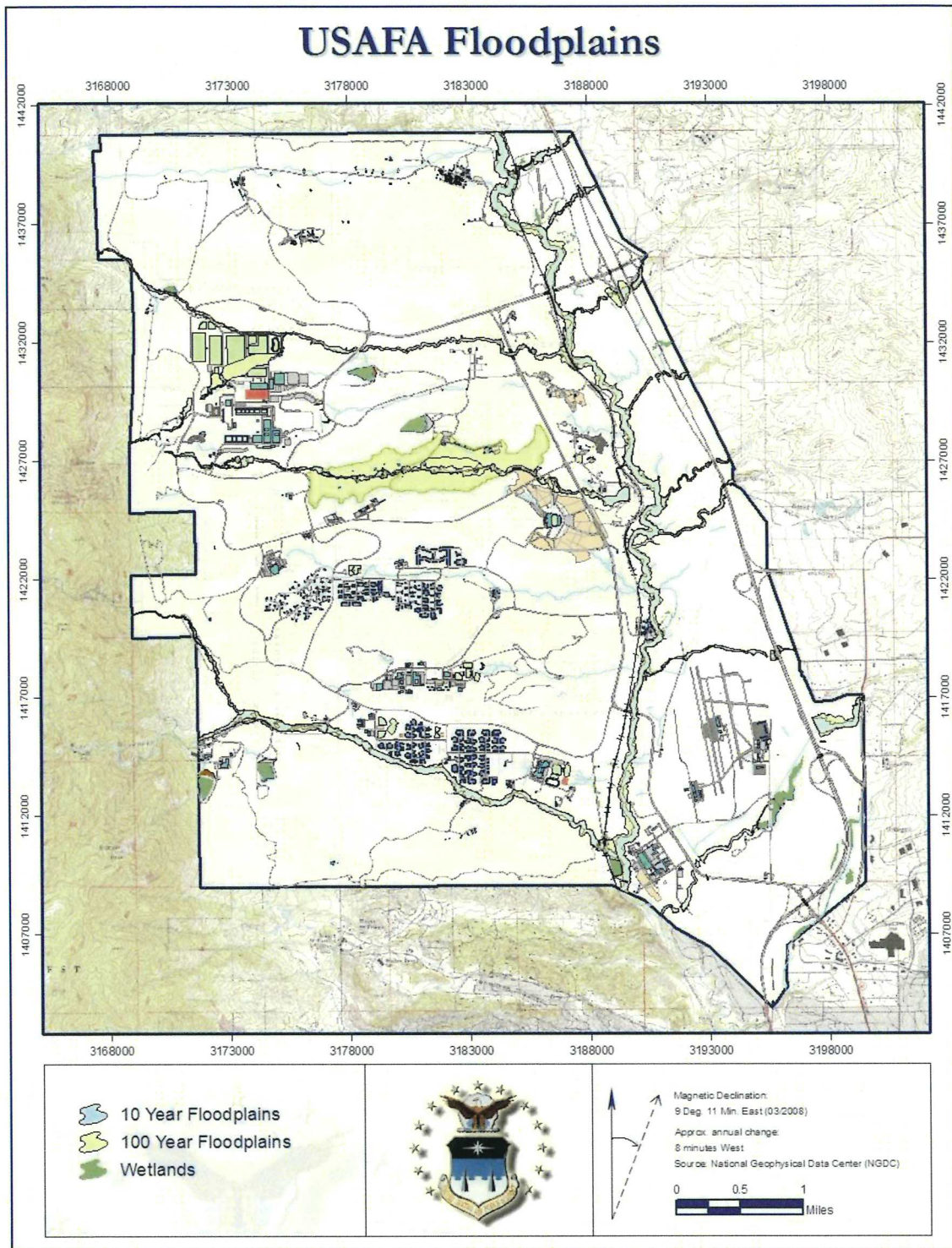
Creek and its tributaries are a part of the larger Fountain Creek Watershed which drains into the Arkansas River.

On the western border of the Academy, West Monument Creek flows through the McCulloch Water Treatment Plant, which is owned by the City of Colorado Springs. Stream flows are partially regulated by this facility. Riparian quality is relatively good, but management concerns include degree and frequency of fluctuation in water flows and the potential for increased sediment entry into the stream.

Currently, stormwater from the proposed project area is either absorbed into the ground or it surface flows south to the West Monument Creek. There are no springs located in the proposed project area.

### 3.2.2 FLOODPLAINS

Floodplains are defined by Executive Order 11988 (Flood Plain Management) as lowland and relatively flat areas adjoining inland and coastal water that would be inundated by a 100-year flood. The proposed action is outside of the 100-year floodplain (INRMP 2008) (Figure 3-3).



**FIGURE 3-2 10, 100 YEAR FLOODPLAIN AND WETLAND AREAS WITHIN THE PROPOSED ACTION AREA**

### 3.2.3 GROUND WATER

The proposed action 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.

Numerous state-listed noxious weeds are widespread and abundant on the Academy, including various thistles, knapweeds, and sparges. 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 have been infrequent and no human-lion encounters have resulted in injury.

The area of the proposed action is used extensively by mule deer for foraging and resting. 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

Threatened and endangered species are federally protected plants and animals that are in danger of becoming extinct. Such species are threatened or endangered for a variety of reasons, mainly due to specialized habitat needs or habitat destruction. Any adverse impact on the habitat of a listed species is strictly prohibited.

The West Monument Creek to the south is considered a conservation area because it was identified as being of very high significance for biodiversity that contains habitat for the following significant species: Preble's jumping mouse, hops azure butterfly, southern Rocky Mountain cinquefoil, New Mexico cliff fern, cedar waxwing, gray catbird, and northern leopard frog. To the west of the project area is the Stanly

Canyon Conservation Site. This site spans the transition from montane canyon to foothills stream. It supports several bird and butterfly species that are rare within Colorado, including ovenbird, evening grosbeak, Snow's skipper butterfly, and Morrison skipper butterfly (INRMP 2008). These species of special concern are known to be in the vicinity of the proposed action but none are known to be habituating at the proposed locations.

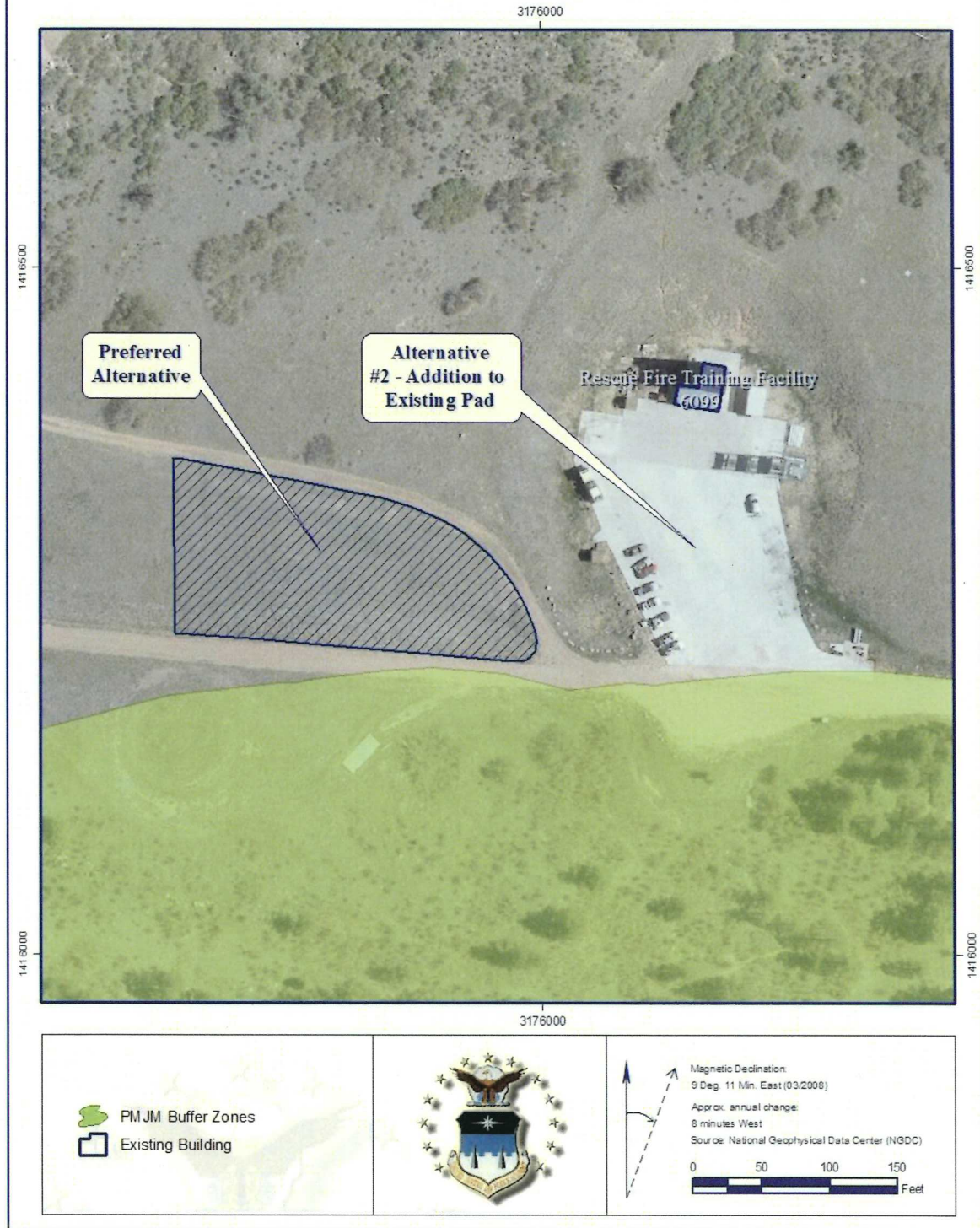
No Endangered Species Act consultation with the United States Fish and Wildlife Service will be conducted since the project lies outside the Conservation Zone and no direct or indirect impacts to the adjacent habitat are anticipated.

The Federally-listed "threatened" species, the Preble's meadow jumping mouse (PMJM) occurs within the boundaries of the Academy. Preble's are most often found in dense, herbaceous riparian vegetation and closely adjacent uplands. Suitable habitat on the Academy is generally defined as falling within 300 feet of the 100-year floodplain. Figure 3-3 show the West Monument Creek PMJM buffer zone south of the proposed action locations. The locations of the proposed action are in open fields with no dense vegetation and thus are not suspect habitats for the PMJM.

#### 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. USAFA 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 – Figure 3-2).

# MAFT Proposed Location



**FIGURE 3-3 PMJM HABITAT BUFFER ZONES WITHIN PROPOSED ACTION AREA**

## **3.4 GEOLOGICAL RESOURCES**

### **3.4.1 PHYSIOGRAPHY AND GEOLOGY**

The Geology of the United States Air Force 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 proposed action 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 USAFA.

- 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 MAFT proposed project area is located on the mesa just west of pine valley.

### **3.4.3 SOILS**

The Natural Resources Conservation Service (NRCS) identifies 26 soil mapping units on the Academy (NRCS 2008b). The soils in the proposed project area are Jarre and Jarre Part (INRMP 2009 pg 71). The Jarre series consists of deep, well-drained soils that formed in alluvium derived from sandy sediment. These soils are on alluvial fans or old terraces. They have slopes of 1 to 30 percent. Surface runoff is medium to rapid with a moderate to high hazard of erosion. The Jarre and Jarre Part soil types each cover approximately 50% of the proposed project area.

## **3.5 CULTURAL RESOURCES**

Baseline inventories of cultural resources at the Academy were completed in late 1996, and an Integrated Cultural Resource Management Plan (ICRMP) has been completed. In July 1995, the Colorado State Historic Preservation Office (SHPO) determined that the Academy campus was eligible for listing on the National Register of Historic Places (NRHP). That determination, which included the landscape boundaries of the original 1955 Master Plan, was based on the unique combination of natural and built

elements found on the Academy. Details of these cultural resources and management recommendations can be found in the Academy's ICRMP which was updated in 2006.

### 3.6 AIR QUALITY

For analysis purposes, the region of influence for air quality is defined as El Paso County, Colorado where the proposed project site is located. The proposed site is located in the EPA Region 8.

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 (PPACOG) 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.ppacog.org/cms/index.php?option=com\\_content&task=view&id=320&Itemid=48](http://www.ppacog.org/cms/index.php?option=com_content&task=view&id=320&Itemid=48)).

**Table 3-2. National Ambient Air Quality Standards.**

Pollutant	Standard Value
<b>Carbon Monoxide (CO)</b>	
8-hour average	9 ppm
1-hour average	35 ppm
<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
<b>Ozone (O<sub>3</sub>)</b>	
8-hour average	0.075 ppm
<b>Particulate matter less than 10 microns (PM<sub>10</sub>)</b>	
Annual Mean	50 µg/m <sup>3</sup>
24-hour average	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  
 µg/m<sup>3</sup> micrograms per cubic meter  
 ppm parts per million

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

Under CDPHE regulations, fire training facilities are exempt from air conformity requirements under CDPHE 5CCR 1001-3, Regulation 1, Section 11.C.2. Therefore, no analysis of environmental impacts related to operations of the training facilities are addressed in this document.

#### *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. Rural areas are typically not considered in such monitoring. 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 percent of the total emissions inventory for a particular criteria pollutant in a non-attainment or maintenance area. If the emissions exceed this 10 percent threshold, the federal action is considered to be a "regionally significant" activity, and thus, the general conformity rules apply.

### **3.7 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 Comprehensive Emergency Management Plan (CEMP 10-2) 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 (AFI32-7086).

The existing MAFT site has a propane tank that is used as the fuel source in the training exercises. The Preferred Alternative will continue to use the same propane tank.

**SECTION 4**

## **SECTION 4 – ENVIRONMENTAL CONSEQUENCES**

### **4.1 LAND USE**

Potential impacts to land use from a proposed action 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 proposed action, 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.

#### **4.1.1 PREFERRED ALTERNATIVE**

The 2005 General Plan for the Academy shows the future land use plan for the proposed area is Field Training. The field training category includes those areas where outdoor military training takes place. Specific activities include survival training; combat arms training; initial force beddown; rapid runway repair; and obstacle, confidence and reaction courses (General Plan 2005). The proposed MAFT will be used for field training of fire fighters and thus the operation of this facility is compatible with the future land use plan.

The proposed MAFT installation is in a rural area of the Academy. The future land use of "Field Training" is surrounded by an area designated as Open Space (Preserved Natural). Construction and operation of the Preferred Alternative would not interfere with the activities or functions of this adjacent land use.

#### **4.1.2 ALTERNATIVE 2**

Impacts associated with implementation of Alternative 2 would be identical to those described for the MAFT Installation in section 4.1.1.

#### **4.1.3 NO ACTION ALTERNATIVE**

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

#### **4.1.4 MITIGATION**

Mitigation measures would not be required for the land use resource.

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

Any future construction projects planned for the Academy would be consistent with the planned land use patterns found in the 2005 General Plan. The surrounding Open Space (Preserved Natural) land use would separate the proposed area from the other more sensitive land uses. This spacing of land uses would prevent any cumulative and long-term impacts from being a significant impact to the nearby land uses.

## 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 analyzed. Floodplains and wetlands (jurisdictional and non-jurisdictional) were also considered. Additionally, the use of water from the nearby fire hydrant, which is part of the Academy's water utility, is also investigated as a water resource.

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 storm runoff, or alter releases of pollutants to water, or land (surface water drainages) that would affect the hydrologic system.

### 4.2.1 PREFERRED ALTERNATIVE

The Preferred Alternative will use the MAFT for fire training sessions at the location shown in Figure 2-1. From a recent MAFT training exercise with water being used from a fire truck storage tank, it was estimated that each fire simulation lasts approximately 2 minutes and during that time, 200 gallons of water are used. If all of the MAFT training scenarios are run then it is estimated that approximately 1000 gallons of water would be used during a day of normal training exercises.

The construction of the concrete pad to be used for MAFT training is estimated to be approximately 32,500 square feet being placed over existing well-drained soil. The drainage study reports the following calculations for a 100-year storm:

- With the no-build scenario (No-Action Alternative), the outflow of the proposed area is 2.66 cubic feet per second (cubic feet per second (cfs)). This would be considered the historic discharge rate.
- With the construction of the concrete pad (Preferred Alternative and Alternative 2), the outflow from the pad will be 4.76 cfs. This would exceed the historic discharge rate.
- With the implementation of the mitigation (swales and detention ponds) (Preferred Alternative and Alternative 2 with Mitigation), the outflow from the area will be 1.45 cfs which is below historic discharge rates.

(Design Analysis, United States Air Force Academy, Construct Concrete Pad For Fire Training XQPZ 08-0413, 65% Submittal, April 9, 2009)

The concrete pad increases the flow of water, but the drainage mitigation reduces the peak flow to below the existing conditions.

Run-off from the training sessions and storm water will be collected by a system of swales around the proposed concrete pad and directed to a detention pond to ensure the excess water does not impede on the established Preble's Meadow Jumping Mouse buffer zone south of the proposed location. The release of water from the project can be limited to historical amounts by using a 2 inch diameter orifice as the control device at the discharge point of the detention pond.

Construction and grading of the MAFT Installation would result in new soil disturbances that would increase the potential for erosion and sedimentation. During construction, runoff from the site could

contain contaminants that could subsequently degrade the quality of receiving waters. The Academy requires that the following measures be taken for construction activities that disturb less than one acre:

- Install appropriate Best Management Practices to prevent sediment from leaving the site and BMP maintenance.
- Protect storm drain inlets to prevent sediment from entering storm drains.
- Immediately clean up spills of fuels, lubricants, and other HAZMAT.
- 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.
- Projects shall be designed to comply with the EPA Region VIII NPDES Municipal Separate Storm Sewer System (MS4) permit.
- Post-construction storm water runoff from project sites shall be restricted to historical flows.
- Devices/designs to comply with this condition shall be approved by the Contracting Officer.

To ensure compliance with other Clean Water Act requirements, post construction storm water runoff control designs shall be consistent with criteria presented in the Colorado Springs City / County Storm Water Drainage Control Manual Volumes I and II. (Note that the manual requires control of runoff to historical rates of release from the 2-, 5-, 10-, 50-, and 100-year storms.) Post construction storm water management BMPs are identified in the Academy's NPDES General Permit for Storm Water Discharges from Federal Facility Small Municipal Separate Storm Water Systems COR042000.

The Academy shall ensure that construction activities are conducted in accordance with the applicable state and federal regulations regarding stormwater management. The Academy would ensure the following BMPs would be incorporated into project design and implementation to prevent or minimize impacts:

- Comply with EPA NPDES General Permit No. COR10000F and COR042000 for Storm Water Discharges from Construction Activities.
- Obtain a digging Permit AF-103.
- Prepare a Storm Water Pollution Prevention Plan (SWPPP) for approval by 10 CEV.
- Install and adequately maintain all best management practices (BMP) described in the construction permit and relevant storm water control guidance documents.
- Maintain a copy of the SWPPP, electronic NOI, and NPDES General Permit No. COR10000F for Storm Water Discharges from Construction Activities, inspection reports, and all applicable permit documentation requirements at the construction site.
- Submit a Notice of Termination (NOT) (EPA Form 3510-7) to the Contracting Officer (CO) and 10 CEV after:
  - Consultation with and release criteria approval by CEV
  - All construction debris, equipment, materials, and facilities are removed
  - Construction areas are inspected by CEV or the CO Technical Representative
  - All temporary storm water BMPs are removed
  - Ground cover is at 70 percent or when final stabilization of the site has been achieved as defined by the permit or other release criteria identified in the construction permit
  - Final inspection is performed

The implementation of the erosion control measures at the project site would ensure that stormwater flows would not exceed what is already being experienced and therefore would not adversely affect downstream conditions on the Academy. Additionally, appropriate BMP's minimize on-site contaminants and control their release from the project site into the receiving waters.

As previously mentioned, running all of the MAFT fire training scenarios would use approximately 1000 gallons of water. This water could come from the fire hydrant located at the site or from the storage tanks on the fire trucks. Either way, the water would ultimately come from the Academy's water utility. Due to the infrequent nature of the fire training exercises, the impact to the Academy's water supply would be minimal.

The fire training sessions will bring additional water to the area above and beyond the current stormwater runoff levels. The system of swales and detention ponds around the proposed site would reduce the flow rates to historical flow velocities thus reducing the likelihood of creating erosion and sedimentation impacts. The additional water from the training exercises would have minimal impacts to the water resources due to the shorter duration and less frequent nature of the training exercises.

#### 4.2.2 ALTERNATIVE 2

Impacts to Water Resources under Alternative 2 would be identical to those described for Preferred Alternative in section 4.2.1.

#### 4.2.3 NO ACTION ALTERNATIVE

The no-action alternative would restrict the use of the MAFT to one training session (in order to meet training requirements) a year for all fire departments instead of rotating the department training on a quarterly basis. This one-day increase in training would have a concentrated impact on all of the water resources and would exceed historic flows due to the quantity of water used and discharged.

#### 4.2.4 MITIGATION

To mitigate any potential water resource impacts, pre and post construction storm water BMPs should be implemented as described in section 4.2.1.

#### 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 post construction historic rates of release from the project site. This method of control mitigates stream degradation such as stormwater volume, erosion, and sediment deposition. Future projects near the Preferred Alternative would utilize source control to minimize downstream impacts. 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 implementation of source control, future actions would not be expected to cumulatively contribute to impacts on water resources. There are no future projects programmed for this vicinity.

### 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, destroy, lose or degrade jurisdictional wetlands or floodplains.

#### 4.3.1 PREFERRED ALTERNATIVE

As would be expected in any Open Space (Preserved Natural) land use, there are signs of wild plant and animal species at the project site. However, there are no documented threatened, endangered or regionally important species or critical habitats on the proposed project site.

Construction and operation of the proposed MAFT Installation would disturb less than one acre of ground. Construction at the Alternative 1 location may affect on-site, transient wildlife through the long-term loss of an extremely small amount of low quality food (field grass) and loss of inhabitable space in the zone of construction. This lost inhabitable space would not substantially diminish the animal habitat in the area and the transient species at the project site would easily move to other similar habitats within the area. The MAFT site would be an open area that is mostly unattended and thus it is not expected to interfere with wildlife movement or reproductive behavior. The MAFT site is adjacent to know PMJM habitat.

Potential impacts to vegetation would not be significant. Construction of the proposed MAFT Installation would permanently eliminate less than one acre of some sparsely situated native vegetation (field grass). After construction, the proposed swales will be reseeded with natural grasses to reduce the likelihood of erosion. Weeds would be treated as needed in accordance with established USAFA procedures for the control of noxious weeds.

There is a floodplain to the south of the alternative. This alternative will include measures to match the existing stormwater flows therefore the proposed action would not be expected to result in significant effects on the nearby floodplain. The additional non-stormwater flows may have a minor impact on the floodplain, but this impact is expected to be minimal considering the infrequent training exercises.

Overall, potential impacts to biological resources from alternative 1 would not be significant. Alternative 1 would have no overall effect on biodiversity or regional plant and animal populations.

#### 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

Mitigation measures would not be required for the biological resource.

#### 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 small size of the project area, and the similar nature of impacts from the existing fire training tower, the Proposed Action would result in minimal cumulative impacts to the 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 proposed action 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 MAFT would be located in an open space area located west of Pine Valley. The proposed site would be located between two access roads which has already altered and impacted the natural area. Alteration of ground surface on the site would be limited to clearing, excavation to shallow depths, and grading.

Soils in the vicinity of the proposed site are deep and well drained with moderate permeability. The velocities of the water in the swales around the proposed concrete pad are slow and should not present a significant erosion problem (Design Analysis, April 2009). A small area of erosion protection in the form of 6" riprap is recommended at the discharge of the detention pond and the free discharge point of the drainage system.

BMP's such as those outlined in subsection 4.2 would be installed to minimize erosion. Native grass would be reestablished in the disturbed areas immediately after construction is completed, thereby reducing the potential for erosion. A reclamation plan would be developed in accordance with the Academy's Overarching Environmental Specifications.

#### 4.4.2 ALTERNATIVE 2

Construction of Alternative 2 would require the cutting back of a hillside and grading to assure the existing drainage channel drains properly. Alternative 2 would require the relocation of soils to an off-site location and thus this alternative would have greater impacts to the geological resources because more of the

resource would be altered. With the implementation of BMP and a reclamation plan, the impacts would be considered reasonable.

#### 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

To mitigate any potential geological resource impacts, pre and post construction storm water BMPs should be implemented as described in section 4.2.1.

#### 4.4.5 CUMULATIVE AND LONG-TERM IMPACTS

The Proposed Action is a planned concrete pad in a remote area of the Academy. The velocities of the water around the new concrete pad are slow and should not present a significant erosion problem. Based on this, the Preferred Alternative would not be expected to cumulatively contribute to impacts of the geologic resource.

### 4.5 CULTURAL RESOURCES

There are no major cultural resources located within the immediate area of the Preferred Alternative.

#### 4.5.1 PREFERRED ALTERNATIVE

Alternative 1 would not have any impact on cultural resources due to the lack of any documented resources within the analyzed area.

#### 4.5.2 ALTERNATIVE 2

No impacts to cultural resources will occur from Alternative 2.

#### 4.5.3 NO ACTION ALTERNATIVE

Impacts from the implementation of the No-Action Alternative would be identical to the impacts from Alternative 2.

#### 4.5.4 MITIGATION

Mitigation measures would not be required for the cultural resource.

#### 4.5.5 CUMULATIVE AND LONG-TERM IMPACTS

Cumulative and long-term impacts are not anticipated for the cultural resource due to the rural nature of the proposed site.

#### 4.6 AIR QUALITY

Potential impacts to air quality are considered significant if the Proposed Action 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 ALTERNATIVE 1

Under CDPHE regulations, fire training facilities are exempt from air conformity requirements under CDPHE 5CCR 1001-3, Regulation 1, Section 11.C.2. Therefore, no analysis of environmental impacts related to operations of the training facilities are addressed in this document.

During construction, there would be temporary increases in air pollution from the use of the construction equipment. Dust, diesel emissions, and particulate matter are expected to temporarily increase during the construction of the project. Due to the rural location and short duration of the construction project, any increases or impacts on ambient air quality are expected to be short-term and minor.

##### 4.6.2 ALTERNATIVE 2

Impacts anticipated to occur from Alternative 2 would be identical 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

Mitigation measures would not be required for the air quality resource.

##### 4.6.5 CUMULATIVE AND LONG-TERM IMPACTS

All of the alternatives require the use of the MAFT. It is assumed that MAFT training exercises and the other live fire training exercises would not occur at the same time due to limited resources. Cumulative air quality impacts would not be anticipated.

Long-term air quality impacts associated with the operation of the proposed MAFT would not be anticipated due to the short duration and infrequent nature of the MAFT training exercises.

## 4.7 HAZARDOUS MATERIALS

For purposes of this document, hazardous materials impacts would be considered significant if the Proposed Action 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.

### 4.7.1 PREFERRED ALTERNATIVE

The purpose of the proposed action is to create a live fire scenario for training of fire fighters. This action inherently poses a hazard to people and has a potential risk for health or safety-related accidents. The design and use of the MAFT will have multiple safety measures installed to keep the people, animal, and plant populations as safe as possible. Below are some of the safety precautions that will be installed at the MAFT location.

The MAFT shall provide the means for a single operator to control all flame locations throughout the device from a single location. The MAFTs shall be equipped with operator controls that are sufficiently remote from the aircraft mockup as to remain outside of the fire fighting activity and apparatus, while being close enough to observe tactical, safety, and training procedures. The controls shall provide the means to individually select fires, to select all fire locations simultaneously, or select a combination (mix) of individual fires on the mockup. The MAFT shall provide the means for the operator to extinguish all flames from the central location with a single action. In addition, the MAFT shall be equipped with means such as a "dead man" switch to immediately shutdown the entire system upon release of the switch. The switch shall be required to remain depressed for the entire fire evolution. When any safety switch is activated, all training fires and smoke shall be immediately shut down and the ventilation system shall be activated.

The trainer and related equipment shall be designed and installed in accordance with the following standards:

- NFPA 54 – National Fuel Gas Code
- NFPA 58 – LP Gas, Storage and Use
- NFPA 70 – National Electrical Code
- NFPA 86 – The Standard for Ovens and Furnaces
- NFPA 1402 – Guide to Building Fire Service Training Centers
- UL 508A – The Standard for Industrial Control Equipment

The above mentioned safety precautions are designed to prevent hazardous materials from being released into the environment. These safety measures and the oversized concrete pad would also severely reduce the likelihood of a wild fire starting from the training exercises.

In the event that a spill incident does occur, The Academy implements a Comprehensive Emergency Management Plan (CEMP 10-2) 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 (AFI32-7086).

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 affect area natural resources would be reduced to virtually none by the use of drip trays, mats, and the application of standard BMPs.

#### 4.7.2 ALTERNATIVE 2

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

#### 4.7.3 NO ACTION ALTERNATIVE

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

#### 4.7.4 MITIGATION

Mitigation measures would not be required due to hazardous materials.

#### 4.7.5 CUMULATIVE AND LONG-TERM IMPACTS

The repeated use of the MAFT training site could theoretically damage or weaken the safety measures inherently built into the MAFT. Care should be taken to follow routine maintenance guidelines so hazardous materials are not released into the environment.

The use of the MAFT has some inherent hazards, but the risks of the controlled environment MAFT training better prepares the Academy Fire Department to respond safely and effectively to actual emergencies. The risk of training with a controlled hazardous material is minimal with the proper controls in place and utilized and is necessary to meet mission requirements.

**SECTION 5**

**SECTION 5 – LIST OF PREPARERS**

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**SECTION 6**

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**SECTION 7**

## SECTION 7 – REFERENCES

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PRIME BASE ENGINEER EMERGENCY FORCE (BEEF) PROGRAM

**SECTION 8**

**SECTION 8 – ACRONYM LIST**

<b>ACRONYM</b>	<b>DEFINITION</b>
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
MAFT	Mobile Aircraft Fire Trainer
MBTA	Migratory Bird Treaty Act
MSA	Metropolitan Statistical Area

<b>ACRONYM</b>	<b>DEFINITION</b>
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
NO2	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
O3	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
PPACOG	Pikes Peak Area Council Of Governments
ppm	Parts Per Million
PSD	Prevention Of Significant Deterioration
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
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
UTES	Unit Training And Equipment Site

ACRONYM	DEFINITION
VOC	Volatile Organic Compound
WWTP	Wastewater Treatment Plant

**APPENDIX A**  
**PHOTOGRAPHS**



Photograph #1, Existing MAFT Looking North From Access Road.



Photograph #2, The Existing MAFT Looking Northeast From Access Road.



Photograph #3, The Existing MAFT Looking South From The Western Edge Of The Concrete Pad.