**REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS**

**INSTRUCTIONS:** Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).

### SECTION I - PROPOSED INFORMATION

<table>
<thead>
<tr>
<th>1. TO (Environmental Planning Function)</th>
<th>2. FROM (Proponent organization and functional address symbol)</th>
<th>2a. TELEPHONE NO.</th>
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<tbody>
<tr>
<td>10CES/CENMP</td>
<td>Steven Jacobsen, 10 CES/CENMP</td>
<td>719-333-0023</td>
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### TITLE OF PROPOSED ACTION

XQPZ08-2004 Interim Kettle Creek Dry Dam Debris Management Improvements

### PURPOSE AND NEED FOR ACTION

(Identify decision to be made and need date)

See additional information

### DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA)

(Provide sufficient details for evaluation of the total action.)

See additional information

### PROPOSENT APPROVAL

<table>
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<tr>
<th>Name and Grade</th>
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<tr>
<td>Steve Jacobsen, PM Contractor</td>
<td>[Signature]</td>
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### SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY

- **7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE** (Noise, accident potential, encroachment, etc.)
- **8. AIR QUALITY** (Emissions, attainment status, state implementation plan, etc.)
- **9. WATER RESOURCES** (Quality, quantity, source, etc.)
- **10. SAFETY AND OCCUPATIONAL HEALTH** (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, biological wildlife aircraft hazard, etc.)
- **11. HAZARDOUS MATERIALS/WASTE** (Use/storage/generation, solid waste, etc.)
- **12. BIOLOGICAL RESOURCES** (Wetlands/floodplains, threatened or endangered species, etc.)
- **13. CULTURAL RESOURCES** (Native American burial sites, archaeological, historical, etc.)
- **14. GEOLOGY AND SOILS** (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)
- **15. SOCIOECONOMIC** (Employment/population projections, school and local fiscal impacts, etc.)
- **16. OTHER** (Potential impacts not addressed above.)

### ENVIRONMENTAL ANALYSIS DETERMINATION

- **17. PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # A2.3.11**
- **OR**
- **PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.**

### REMARKS

A2.3.11: Actions similar to other actions which have been determined to have an insignificant impact in a similar setting as established in an EIS or an EA resulting in a FONSI. This determination is based on the Kettle Creek Mitigation Project Environmental Assessment (EA 02-003).

Minor, temporary adverse effect due to excavating. Direct and indirect emissions from this activity will be below the rates listed in 40 CFR 93.153(b), thus conforming with the State Implementation Plan.

### SECTION III - ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION

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<th>Name and Grade</th>
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<tr>
<td>SYLVETTE RIVERA-ELIZA, GS-12 Environmental Planning Function</td>
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4. PURPOSE AND NEED FOR ACTION

The project will provide improved access to the existing 9 foot diameter pressure conduit for the USAFA for maintaining sediment and debris loading at the outlet works of the Kettle Creek Dry Dam. This maintenance access road and channel improvement will help to reduce the erosion and subsequent amounts of sediment debris accumulating at the 9 foot diameter pressure conduit.

The existing condition is depositing sediment downstream in Kettle Creek causing maintenance difficulties and damage to these downstream facilities. The outlet works of the dam is difficult to access due to the steep grades and depth of the channel hindering sediment and debris removal. With channel excavation and cleanout installing course aggregate will require less compaction effort than an aggregate base course which will provide an increase in constructability.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Access Road

The proposed action is to upgrade an existing maintenance access road designed using a minimum radius of 100-feet and a 15% maximum gradient. See diagram for location. The bottom width near the access road will be approximately 60 – feet, accommodating the USAFA equipment expected to be used for the work. The cross section of the access road will have 2:1 cut slopes to match existing grade and 12-inch ditches to convey surface flows. Erosion logs will be placed within the ditches to mitigate sediment control at 30-foot intervals. Side slopes will be reclaimed with erosion control blanket to establish vegetation and control surface erosion. All permanent portions of the project will be installed on USAFA property.

The current design criteria is based on City of Colorado Springs Drainage Criteria Manual (DCM) Section 5.16, Maintenance Access for detention ponds. The proposed modifications are based on DCM Section 7.0, Design for Maintenance for a stabilized maintenance trail for open channels. The steepest section of the access road (15%) will be surfaced with concrete and the remainder will be surfaced with Colorado Department of Transportation (CDOT) Class 2 road base. DCM Section 5.0, Landscape Planting and Installation, recommends drill seeding whenever possible, but not on slopes steeper than 3:1. Urban Storm Drainage Criteria Manual Volume 1, Section 8.22 Soil Riprap recommends slopes not steeper than 2.5:1 would be lined with riprap. All areas requiring revegetation will be according to the USAFA Revegetation standards.

Channel Excavation

After the access road is constructed, the channel bottom will be removed to a minimum of three feet and install two feet of No. 467 gradation coarse aggregate installed at the pressure conduit inlet. See diagram for location. This coarse aggregate doesn’t have the fines that aggregate base coarse mixes have that can be eroded away by the continuous flow of water in the bottom of the channel.

Additionally, the course aggregate will require less compaction effort that an aggregate base course providing an increase constructability. (Reference Design Analysis Report, Interim Kettle Creek Dry Dam Debris Management Improvements, 95% Submittal, Section 2.1.5). All excavated material will be hauled off site and properly disposed.
The United States Fish and Wildlife Service (USFWS) has coordinated on this project and concurs that the work is covered by the USAFA’s Conservation agreement with USFWS. Disturbance in the riparian habitat should be minimized as much as possible. Construction fencing will be required to delineate the construction limits of disturbance to prevent inadvertent or unwanted habitat impacts.

Total disturbance is estimated to be less than 1 acre.

Construction is anticipated to take approximately 110 days.

A Nationwide 404 permit from the United States Army Corp of Engineers (USACE) is anticipated for this project as it is to occur in a wetland. The contractor selected to perform this work will be obligated to obtain the 404 permit from the Army Corp of Engineers before work begins. All equipment will be stored outside the floodplain, wetlands, and PMJM habitat. The permit will be in place before construction begins.

The proposed action will provide improved maintenance access to the existing 9 foot diameter pressure conduit for the interim debris management improvements. The improved maintenance access is recommended because the costs associated with the other opportunities exceed the desired amount, and because the improved maintenance access can be designed largely independently of the other ultimate proposed improvements in the Upstream Channel Reach.

C-105 Site Detail and Profile
Alternatives:

USAFA has considered other alternatives to manage the debris at the inlet.

- Improve headwall, wing walls, and apron for the existing Kettle Creek Dry Dam pressure conduit.

  This alternative would improve the entrance condition at the existing conduit in preparation for a modified trash rack, due to the deteriorated state and functionality of the existing trash rack. The advantage of this alternative is that the improvements would be part of the permanent solution but the existing trash rack would need to be removed. However, since it may be a year or longer before the modified trash rack is installed, the existing conduit would remain unprotected until then. This would not be acceptable given the un-stabilized condition of Kettle Creek upstream of the conduit.

- Sediment pond upstream of the existing Kettle Creek Dry Dam pressure conduit.

  The advantage of this alternative is that it would collect sediment and debris further upstream, providing supplemental protection and reducing the frequency of maintenance at the existing conduit. Because Kettle Creek has a constant base flow, this facility would need to be continually maintained to ensure its functionality. Also, this would only be a temporary solution that would be replaced with the proposed improvements in the larger Modifications Project. Its construction would also be disruptive to established PMJM habitat.

- Install debris boom across Kettle Creek to collect most of the wood-type materials from gathering around the main drainage structure.

  The advantage of this alternative is that it would collect sediment and debris further upstream, providing supplemental protection and reducing the frequency of maintenance at the existing conduit. However, this alternative was determined to be ineffective based on the water level of Kettle Creek and its difficulty to maintain and operate. As a standalone project for addressing an isolated issue with the existing dry dam operation, this would be a temporary solution and not compatible with the proposed improvements in the larger Modifications Project.

The only meaningful opportunity for interim improvements is an improved maintenance access road because it can be designed largely independently of the proposed stabilization improvements in the Upstream Channel Reach. Also, construction will be in advance of the Kettle Creek Dry Dam Modifications Project and will provide the stable subgrade needed for the proposed concrete sediment basin included in the larger Modifications Project and be part of the permanent solution.

No Action alternative: Without this proposed action, the debris management at the inlet will continue to be difficult and at times impossible to maintain which would cause it to become inoperable. If the inlet becomes blocked by a substantial amount of debris, stormwater could back-up and over top the spillway onto the I-25/Briargate Interchange.
Vicinity Map

- USAFA Airfield
- Kettle Creek Dry Dam
- PMJM Habitat, Floodplains, & wetlands
- USAFA boundary
- City of Colorado Springs
- Project Location

Springs Kettle Creek Dry Dam

North
Project Location Map

- Project Location
- Floodplains
- Wetlands
- PMJM Habitat
SECTION II – PRELIMINARY ENVIRONMENTAL SURVEY

7) AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE

There is no effect to the installation’s AICUZ or land use for the proposed project.

8) AIR QUALITY

Minor, temporary adverse effect due to excavating. Direct and indirect emissions from this activity will be below the rates listed in 40 CFR 93.153(b), thus conforming with the State Implementation Plan. The emissions were estimated with the Air Conformity Applicability Model (ACAM) software.

9) WATER RESOURCES

The total disturbance will be less than an acre, where according to the USAFA MS4 permit and the new 2017 Construction General Permit, a notice of intent (NOI), and stormwater pollution prevention plan (SWP3) will not be required. The Kettle Creek is classified as a floodplain/wetland.

Erosion and sediment control measures will be required to protect any sedimentation occurring to Kettle Creek. Section 5 of the Proposal - Description of Proposed Actions and Alternatives state that erosion logs, erosion control blankets, and rip rap will be used. These are accepted measures and will provide adequate protection of the adjacent water bodies. The project will be coordinated with Army Corps of Engineers, which will authorize a Nationwide 404 Permit for dredging in the waters of the United States.

All areas of disturbed vegetation shall be immediately stabilized and all areas of disturbed vegetation shall be immediately stabilized and re-seeded or re-sodded upon project completion. Re-vegetation shall be accomplished in accordance with the specifications in Section 01 35 10 of the “Erosion Control, Revegetation and Tree Care Standards” for Erosion control, revegetation and tree care standards" for disturbed areas plan. If erosion is evident prior to re-seeding or re-sodding then appropriate stormwater best management practices shall be implemented to prevent any further damage due to runoff. Coordination with natural resources for re-vegetation and stabilization will be required to ensure that measures are adequate.

9a) Tanks

The proposed project to improve Kettle Creek Dry Dam Debris Management will have no negative environmental impacts for the petroleum storage tank program as no petroleum storage tanks are located within the boundaries of the project’s location provided all work (repair, renovate or new construction) is conducted according to and in compliance with Colorado Regulation 7 C.C.R. 1101-14, January 1, 2017, Storage Tank Regulations and 40CFR Part 280, UST/AST Technical Standards.

10) SAFETY AND OCCUPATIONAL HEALTH

No impact anticipated. The contractor will be responsible for the safety of their personnel.
10a) Asbestos/Toxics

The proposed project to improve Kettle Creek Dry Dam Debris Management will have no negative environmental impacts for the toxic materials (asbestos-containing building materials and lead-based paint) programs provided all identification, classification, construction and abatement work is conducted according to and in compliance with 40CFR Part 763, Asbestos, Colorado Regulation 8, Part B Asbestos, OSHA 29CFR 1926.1101 Asbestos, Colorado Regulation 19, Abatement of Lead-Based Paint and OSHA 29CFR 1926.62 Lead.

11) HAZARDOUS MATERIALS/WASTE

The proposed project to improve Kettle Creek Dry Dam Debris Management will have no negative environmental impacts for the hazardous materials or hazardous waste programs as none of these types of building materials will be located within the boundaries of the project’s anticipated location provided all work (repair, renovate or new construction) is conducted according to and in compliance with AFI 32-7086 – Hazardous Materials Management, AFI 32-7042 – Hazardous Waste Management, 40 CFR Part 260-273 RCRA Hazardous Waste, Colorado 6 CCR 1007-3 Part 260 Hazardous Waste Management, 6 CCR 1007-2 Solid Waste Management.

12) BIOLOGICAL RESOURCES

No impact. The temporary habitat disturbance necessary to modify the culvert access road will be covered under the Preble’s Conservation Agreement with United States Fish and Wildlife Service (USFWS). Vegetation and erosion blanket or wattles vs rip-rap should be used to stabilize disturbed slopes to minimize any possible permanent habitat impact. Any construction access disturbance will be restored in accordance with the USAFA Erosion Control, Revegetation, and Tree Care Standards (October 2016).

13) CULTURAL RESOURCES

There are no known above or in-ground cultural resources or American Indian burial sites within the identified project location. Completion of Section 106 consultation will not be required.

14) GEOLOGY AND SOILS

No impact. The proposed action would not alter or be affected by geologic or soil resources, such as top soils, mineral reserves, seismic activity, or unique or important land forms.

15) SOCIOECONOMICS

The use of contractors to perform proposed action would cause a minor, temporary increase in employment activities, opportunities and monetary infuse to the area community.

SECTION III – ENVIRONMENTAL ANALYSIS DETERMINATION

This project qualifies for categorical exclusion A2.3.11: Actions similar to other actions which have been determined to have an insignificant impact in a similar setting as established in an EIS or an EA resulting in a FONSI. The EPF must document application of this CATEX on AF Form 813, specifically identifying the previous Air Force approved environmental document which provides the basis for this determination.
This determination is based on the Kettle Creek Mitigation Project Environmental Assessment (EA 02-003) which evaluated the effects of a stream restoration project located at Kettle Creek. The objectives of the Kettle Creek Mitigation Project were to correct channel degradation and erosion, improve PMJM habitat, and improve channel slope stability. Approximately two acres were disturbed. In order to accomplish this project the following measures were implemented:

- Vegetated riprap was installed at several locations along the channel.
- The southern embankment was re-sloped to facilitate habitat restoration. Native grasses and shrubs were planted to provide suitable PMJM habitat.
- Installation of a permanent, concrete drop structure in Kettle Creek.

A Finding of No Significant Impact (FONSI) was signed on 20 Feb 2003 by Earnest O. Robbins II, Maj Gen, USAF.

The proposed action in Kettle Creek is approximately a half mile from the Kettle Creek EA activities. The areas have the same environmental conditions and the same biological resources, such as vegetation and PMJM habitat, and the same topography and soil types. The proposed action in Kettle Creek is smaller in scale and will add similar permanent, impervious square footage as the Kettle Creek project did.

Further, the proposed action in Kettle Creek is almost identical to one aspect of the Kettle Creek EA, but lesser in scale. The Kettle Creek EA included the installation of a permanent, concrete drop structure and riprap in Kettle Creek to stabilize the channel slope, preventing the development of headcut erosion, and preserving the integrity of upstream improvements. The proposed action in Kettle Creek will install a permanent, coarse aggregate channel bottom and improved access road for the same purpose – stabilize the channel and sediment control - by providing a stable surface for maintenance equipment to access/remove sediment/debris at the pressure conduit. While the intent of the structures are similar and the proposed action is also a permanent structure, it will have a smaller construction footprint into Kettle Creek than the Kettle Creek EA. Overall, the proposed action will have less of an impact on the Kettle Creek than the Kettle Creek EA, and warrants a similar finding of no significant impact.
FINDING OF NO PRACTICABLE ALTERNATIVE
KETTLE CREEK DEBRIS MANAGEMENT IMPROVEMENTS
UNITED STATES AIR FORCE ACADEMY, CO

Pursuant to Executive Order 11990 Protection of Wetlands, and EO 11988 Floodplain Management, and EO 13690 Federal Flood Risk Management Standard, the authority delegated in Secretary of the Air Force Order 791.1, further delegated by HQ USAF/ILE, 09 Dec 04, and taking all pertinent information into account, I find that there is no practicable alternative to upgrading an existing maintenance access road and installation of coarse aggregate at the pressure conduit at the inlet in Kettle Creek to help reduce erosion and sediment debris, which will result in the permanent disturbance of a wetland or floodplain. Due to the nature of the project, there is no other practicable location or other means of accomplishing the project without incurring similar impacts. The Proposed Action, as designated, includes all practical measures to minimize harm to wetlands and floodplain environments.

APPROVED:

_____________________________________                    _____________________
SHAWN W. CAMPBELL, Colonel, USAF      DATE
Commander, 10th Air Base Wing