A. PERMITTEE INFORMATION

Permittee (Agency Name):	United States Department of the Air Force US Air Force Academy
Mailing Address:	10th Air Base Wing 8120 Edgerton Drive
City, State, and Zip Code:	United States Air Force Academy, Colorado
Point of Contact:	Barry Schatz Chief, Environmental Element
Contact Phone Number	719.333.6716
Contract Email Address	barry.schatz.2@us.af.mil
Permit Certification Number:	COR 042007

Have any areas been added to the MS4 due to annexation or other legal means? No

B. REPORTING PERIOD

January 1, 2024, to December 31, 2024

C. CONSTRUCTION PROGRAM CONTACT

The following information will be provided on EPA's web site to assist construction site operators in determining municipality-specific requirements for their projects:

Have you assigned an appropriate contact person/work unit to address questions regarding your municipality's construction and post-construction requirements?

If Yes:

Contact name: Barry Schatz
Position/work group title: Chief, Environmental Element
Contact phone number: 719.333.6716
Contact E-mail address: barry.schatz.2@us.af.mil

If a web site has been created with information on complying with your municipality's construction and/or post-construction requirements, list the address here. USAFA stormwater and environmental information can be found on the 10th Mission Support Group website.
https://www.usafa.af.mil/Units/10th-Air-Base-Wing/Mission-Support-Group/ .
Select the 10th Civil Engineering Squadron drop-down for relevant information.

D. IMPLEMENTATION OF EPA'S STORMWATER MANAGEMENT PROGRAM

The purpose of the annual report is to report on the status of your implementation of the permit requirements, including compliance with the standard of reducing the discharge of pollutants from your MS4 to the Maximum Extent Practicable (MEP). Address each of the following items for **each** of the six program areas:

1. Public education and outreach on stormwater impacts;
2. Public participation/involvement;

3. Illicit discharge detection and elimination;
4. Construction site stormwater runoff control;
5. Post-construction stormwater management in new development and redevelopment; and
6. Pollution prevention/good housekeeping for municipal operations

As the permittee, you must collect and maintain adequate information to demonstrate implementation of the six program areas as per your stormwater management program. Note that although the annual report only requires the submittal of certain information as outlined below, additional information may be requested by EPA to audit the implementation of your stormwater management program. For example, construction site inspection reports, outreach materials, and records of maintenance activities performed may be requested by EPA in addition to the annual report.

If another entity does not have its own permit and is instead covered under your permit, the annual report information under Section D of this form must also be provided for each such entity.

1. PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to a BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for public education and outreach on stormwater impacts for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measure, as previously submitted	**Status:** Including dates and numeric measures	**Changes proposed to BMP and/or Measurable Goal?** (Yes/No). If yes, provide information on proposed changes and rationale.
2.2.1 Implement education outreach programs for the Air Force Academy targeting the employees, contractors, students, and community on stormwater impacts and steps to reduce pollutants. 1. Provide awareness training at least twice per year during Newcomers Briefing. 2. Provide additional information on a publicly accessible website.	The Air Force Academy Environmental Management Element continues to provide environmental awareness training to all new employees, military and civilians, who will be working on the Air Force Academy (Newcomers Briefing). Specific dates and attendance rosters are maintained. The environmental management related slides that are presented at the new employee briefing are provided in Attachment A of this annual report. The Air Force Academy Environmental Management Element maintains a website with additional details on environmental programs and provides contact information for key environmental program managers for the public to obtain additional information. A sample of the website content is provided in Attachment B of this annual report and accessible at: https://www.usafa.af.mil/Units/10th-Air-Base-Wing/Mission-Support-Group/ A stormwater awareness brochure has been developed and is available on the Air Force Academy website. A copy of the brochure is included in Attachment C of this annual report. .	No changes planned.

2.2.2 At a minimum, disseminate informational material to inform the Air Force Academy public (project managers, contractors, tenants, students, and environmental staff) of the effects of erosion and stormwater runoff on water quality. 1. Provide awareness training to contractors working on the Air Force Academy concerning erosion and sediment control. 2. Provide additional information on a publicly accessible website.	The Air Force Academy Natural Resource Management website provides a variety of information including: Watershed concerns; Erosion Control; Revegetation; and Tree Care Standards. This website also provides information on erosion and water quality. The Air Force Academy Natural Resource Management website is available at: https://usafa.isportsman.net/Watershed.aspx A copy of the United States Air Force Academy Revegetation and Erosion Control Standards from this website is included at Attachment D of this annual report. All contractors working on the Air Force Academy must comply with environmental regulations, contract specifications, and management plans while performing work on the Air Force Academy. The Air Force Academy Standard Environmental Specifications include specific erosion and sediment control requirements. These specifications, provided to contractors working on the Air Force Academy, constitute awareness training. A copy of the current specifications are included at Attachment E of this annual report and available at: https://www.usafa.af.mil/Portals/21/documents/10ABW/10MSG/10CES/2021%20USAFA%20Environmental%20Standards.pdf?ver=rZa0pDJGWbzDozNr3gaTWQ%3D%3D	No changes planned.

2.2.3 Provide and document training to appropriate planning staff, project managers, contracting officer and other parties about Low Impact Development (LID) practices, Green Infrastructure practices and communicate specific requirement for Post-Construction Control and associated Stormwater Control Measures (SCMS) as laid out within the SWMP. 1. Create development and redevelopment stormwater awareness training for appropriate Air Force Academy planning staff, project managers, and contracting officers. 2. Provide training and maintain attendance roster.	Planning staff, project managers, and contracting officers review design plans for development and re-development projects before they go out for bid. The planning staff uses UFC 3-210-10 for LID guidance. A copy of UFC 3-210-10 is available at: https://www.wbdg.org/FFC/DOD/UFC/ufc_3_210_10_2023.pdf Project managers must comply with the LID requirements found in Air Force Manual (AFMAN)-32-1067 available at https://static.e-publishing.af.mil/production/1/af_a4/publication/afman32-1067/afman32-1067.pdf for future development and redevelopment projects on the Air Force Academy. Contracting officers receive a checklist with submittal documents from the Air Force Academy Civil Engineer Squadron stating that all functional areas have been reviewed, including compliance with LID, green infrastructure, and post-construction runoff control.	No changes planned.
2.2.4 Provide a stormwater awareness brochure and track its distribution. **1.** A stormwater awareness brochure is developed for the Air Force Academy. **2.** Track distribution of the brochure, including key dates, locations, and methods of distribution.	A stormwater awareness brochure has been developed. A copy is provided at Attachment C of this annual report and available online at: https://www.usafa.af.mil/Portals/21/documents/10ABW/10MSG/10CES/Stormwater-Program-Brochure.pdf?ver=lKwJodXKT7_rf3t_Fk644w%3d%3d . Copies of the stormwater pollution brochures was placed at the USAFA Visitor Center, Natural Resources Office, and Automotive Hobby Shop in 2024.	No changes planned.

2.2.5 To the extent feasible, all new resident guides include terms for occupancy which relate to household waste management, pet policy, lawn watering, petroleum management, fertilizers and pesticide management and car washing. 1. Provide environmental awareness materials in new residents housing guide.	Hunt Military Community is the contractor responsible for privatized housing on USAFA. Hunt Military Community has developed a "New Resident Welcome Packet" and "Community Handbook" which addresses multiple stormwater, household hazardous waste, pet waste, and other environmental issues. There are enforcement provisions included for non-compliance with these standards. A copy of the current New Resident Welcome Packet and Community Handbook is provided in Attachment F of this annual report. These documents are also available at the following link under "resources for current residents" > "welcome packet": https://www.airforceacademyhousing.com/current-residents/documents-and-forms	No changes planned.

2.2.6 At a minimum, produce and disseminate information of all material to inform employees and contractors working on site of proper hazardous waste collection processes. These materials should be updated and distributed as necessary throughout the duration of the permit. 1. Provide hazardous waste management training to appropriate government personnel. 2. Provide awareness training to contractors performing work on the Air Force Academy.	Government personnel responsible for managing hazardous materials and hazardous waste on the Air Force Academy are properly trained prior to assuming duties or working with hazardous materials or hazardous waste. All employees and contractors working on the Air Force Academy comply with Hazardous Communication and RCRA waste management training requirements. Training records are maintained by the Air Force Academy Hazardous Waste Program Manager and within the employee's individual personnel file. All contractors working on the Air Force Academy must comply with all environmental regulations and management plans on The Air Force Academy. The standard environmental specifications applicable to contractors working on the Air Force Academy include specific hazardous waste management and reporting requirements. These specifications are provided to contractors working on the Air Force Academy which constitutes awareness training. A copy of the current environmental specifications is included with this annual report at Attachment E.	No changes proposed.

PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS (CONTINUED)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

The Air Force Academy Public Education and Outreach Program capitalizes on existing programs on the installation, such as newcomers briefing; environmental management and natural resources websites; Community Handbook for housing areas; and other environmental training programs to reach a broad audience. It is estimated that more than 2,500 residents, employees, retirees, and contractors are reached by the education and outreach program on an annual basis for general awareness training. Targeted training is provided to a smaller subset of the Air Force Academy community including facility managers, program managers, planners, contracting officers, and environmental management staff who are tasked with implementing programs to protect water quality. The Public Education and Outreach Program is accomplished using a variety of methods including print, classroom training, and awareness engagements as described above. Representative outreach materials are provided with this Annual Report, including excerpts of websites, environmental specifications, awareness brochure, and handouts provided to housing residents.

As required by Paragraph 2.2.8.4 of the MS4 Permit, the following person is responsible for coordination and implementation of the public education and outreach program:

Contact name: Barry Schatz
Position/work group title: Chief, Environmental Element
Contact phone number: 719.333.6716
Contact E-mail address: barry.schatz.2@us.af.mil

2. PUBLIC PARTICPATION AND INVOLVEMENT

Narrative description: Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures) and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for public participation and involvement on stormwater impacts for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measure, as previously submitted	**Status:** Including dates and numeric measures	**Changes proposed to BMP and/or Measurable Goal?** (Yes/No). If yes, provide information on proposed changes and rationale.
2.3.1 Comply with applicable State and local public notice requirements when implementing public involvement /participation program and make all relevant annual reports and documents available on public websites.	The Air Force Academy Environmental Management Element and Staff Judge Advocate (legal staff) are responsible for reviewing proposed activities and determining if any public notices are required.	No changes planned.

2.3.2 Make all relevant Annual Reports available on the pemittee website or on another platform which is available to the public in an electronic format. 1. Make MS4 annual reports available on an Air Force Academy website.	This is the eighth Annual Report under the Air Force Academy MS4 Permit. This Annual Report will be made available on appropriate Air Force Academy websites, including the Air Force Academy Environmental Dashboard (e-Dash) and Civil Engineer Squadron webpage, following submission to the EPA.	No changes planned.
2.3.3 Provide volunteer activities (e.g. cleanup days) as practicable to help actively engage residents and personnel at the Air Force Academy in understanding water resources and how their activities can affect water quality. 1. Provide venue for Creek Clean-up activities and Earth Day awareness. Maintain a log of public participation activities related to water quality protection and clean-up of MS4 receiving waters.	The Air Force Academy participated in the annual Creek Week program organized by the Fountain Creek Watershed Control and Greenway District. 29 volunteers cleaned up litter and debris across the installation. In total, 93 bags of trash were collected by volunteers who donated more than 79 hours to this cleanup effort.	No changes planned. The Air Force Academy plans to participate in Creek Week cleanup activities in 2025.
2.3.4 Maintain a log of public participation and outreach activities performed. 1. Maintain a log of public participation activities related to water quality protection and clean-up of MS4 receiving waters.	The Air Force Academy has developed and maintains a log of public participation and outreach activities. A copy of the current public participation log is presented in Attachment G.	No changes planned.
2.3.5 Maintain a copy of the most recent version of the facility SWMP and permit in a publicly accessible format. 1. Maintain a copy of the current Air Force Academy MS4 Permit and SWMP electronically on an Air Force Academy website.	The Air Force Academy MS4 Permit and SWMP are both posted internally on the Air Force Academy Environmental Dashboard (eDash) website. This website is available to personnel with a Common Access Card. The Air Force Academy MS4 Permit is also available on the EPA Region 8 website.	No changes planned.

PUBLIC PARTICIPATION AND INVOLVEMENT (CONTINUED)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure.

No additional information is provided related to implementation of this minimum control measure.

3. ILLICIT DISCHARGE DETECTION AND ELIMINATION

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for illicit discharge detection and elimination for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measure, as previously submitted	**Status:** Including dates and numeric measures	**Changes proposed to BMP and/or Measurable Goal?** (Yes/No). If yes, provide information on proposed changes and rationale.
2.4.1 Implement a program, policies, and /or procedures to detect and eliminate illicit discharges into its MS4. The program shall include procedures to detect and eliminate illicit discharges into its MS4. The BMPs and procedures outlined in the Air Force Academy SWMP constitute the program to identify and eliminate illicit discharges into the Air Force Academy MS4. 1. Maintain one printed copy of the EPA Illicit Discharge Detection and Elimination Manual in the Environmental Element's library. 2. The Water Quality Program Manager, Spill Program Manager, and Environmental Element Chief will conduct an annual review of the EPA Illicit Discharge Detection and Elimination Manual. This review will serve as training for illicit discharge investigation and response techniques.	The Air Force Academy has previously invested significant resources to investigate and eliminate cross-connection and other illicit discharges the MS4. There are currently no known cross-connection or other illicit discharges to the Air Force Academy's MS4. Air Force Academy engineers and environmental management staff review all proposed projects to ensure that cross-connections or illicit discharge to the MS4 do not occur. The Air Force Academy maintains electronic and hard copies of the EPA Illicit Discharge Detection and Elimination Manual. The Water Quality Program Manager, Spill Program Manager, and Environmental Element Chief accomplish awareness training by reviewing this document at least once per year. This document will serve as guidance for the Air Force Academy should a suspect illicit discharge be identified and require investigation.	No changes planned.

2.4.2 Effectively prohibit through ordinance or other regulatory mechanism available under the legal authorities of the MS4, non-stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions. 1. Document any illicit discharge and illegal dumping enforcement actions taken.	The Air Force Academy is maintaining historic illegal dumping and non-compliance enforcement procedures. As a military installation, all personnel working, visiting, or otherwise having access to the installation are subject to specific laws, regulations, and policies while on the Air Force Academy. Enforcement procedures for non-compliance with laws, regulations, and policies are included in the Uniform Code of Military Justice, contracts subject to Federal Acquisition Regulations, Department of Air Force Instruction (DAFI) 51-202 *Non-Judicial Punishment*, DAFI 36-704 *Discipline and Adverse Actions*, DAFI 36-2907 *Unfavorable Information File (UIF) Program* among others. Enforcement procedures can vary based on specific situations. Enforcement procedures on the Air Force Academy are administered by individual supervisors, commanders, Security Forces Squadron, and potentially off-installation law enforcement officers. These existing illicit discharge and illegal dumping procedures have worked effectively for The Air Force Academy under the installation's previous MS4 Permit. The Environmental Element Chief will document illicit discharge and illegal dumping enforcement procedures. There were no incidents of illegal dumping into the storm sewer system or enforcement actions taken in 2023.	No changes planned.

2.4.3 Provide a mechanism (phone number) for reporting illicit discharges and provide this number on the Air Force Academy storm water outreach materials as appropriate. 1. Maintain a storm water action line and document communications received from the public.	A stormwater action line has been established, and the phone number is provided on the Air Force Academy Environmental Management website and education/awareness information provided to the Air Force Academy public. All calls from the public concerning illicit discharges are logged in the public participation log. In 2024, there were no reports of illicit discharges. A sample of the public participation log is provided with this annual report as Attachment G.	No changes planned.
2.4.4 Investigate any illicit discharge within fifteen days of its detection and shall take action to eliminate the source of the discharge within forty- five days of its detection or obtain permission from EPA for such longer periods as may be necessary in particular instances. 1. Document the time required to investigate, plan, and correct confirmed illicit discharges identified on The Air Force Academy. For confirmed illicit discharges, the Air Force Academy will develop a CAP within 15 business days and implement the corrective action within 45 business days of discovery. If corrective action will require more than 45 business days, permission must be obtained from EPA.	There were 2 confirmed illicit discharges on the Air Force Academy in 2024. Procedures remain in place to detect, investigate and eliminate illicit discharges should any suspect illicit discharges be identified in the future. Details and reports sent to the Colorado Department of Health and Environment (CDPHE) can be found in attachment M.	No changes planned.

2.4.5 Maintain an updated storm sewer system map. At a minimum, the map or system of maps maintained within a Geographic Information System (GIS) shall show jurisdictional boundaries, the location of all inlets and outfalls, names and locations of all waters that receive discharges from those outfalls, locations of post-construction BMPs installed since the effective data of this permit, and locations of all facilities operated by the permittee, including snow disposal sites. 1. Update the complete storm sewer system map in the Air Force Academy GIS.	The Air Force Academy has completed a comprehensive inventory of the storm water conveyance system including inlets, junctions, outfalls, structural best management practices, and receiving waters. The stormwater system inventory map and database are maintained by the Air Force Academy GIS and Drafting Department. As-built plans are submitted to the GIS department and new storm sewer assets are added to the existing database when installed. The storm sewer system map is reviewed on an on-going basis by the Environmental Element Chief to ensure updates are being made. The Environmental Element Chief reviewed and updated the inventory of post-construction stormwater control measures in the 4th quarter 2024. A copy of the current post-construction stormwater control inventory is included in Attachment H of this annual report.	No changes planned.
2.4.6 Develop and maintain an Illicit Discharge Detection and Elimination tracking mechanism which tracks dry weather screening efforts and the location and any remediation efforts to include the Smith Creek, Deadmans Creek, Monument Creek, Monument Branch, West Monument Creek, Kettle Creek and waters of the United States within the exterior boundaries of the Air Force Academy for the presence of non-stormwater discharges to address identified illicit discharges. 1. A log of dry weather screening activities and location of any remediation efforts is maintained.	The Air Force Academy has created a tracking log for dry weather screening and illicit discharge detection and elimination. A copy of the tracking log is included in Attachment I of this annual report.	No changes planned.

2.4.7 Conduct dry weather screening annually for the presence of non-stormwater discharges. 1. Perform dry weather screening of the Air Force Academy outfalls once per year.	Dry weather screening of Air Force Academy outfalls was accomplished in 2024. No illicit discharges were observed during this screening.	No changes planned.
2.4.8 Have a household hazardous waste collection day as needed or as practicable either as a separate Air Force Academy activity or in conjunction with nearby civilian jurisdictions. 1. Residents living on the Air Force Academy have the opportunity to participate in at least one household hazardous waste collection event per year. The event could be provided by The Air Force Academy or local community. The collection event could be a one-time event or continual service.	Air Force Academy residents are authorized and encouraged to use the El Paso County Household Hazardous Waste Facility. This facility is a continual service facility. The El Paso County Household Hazardous Waste facility maintains records of materials dropped at the facility.	No changes planned.
2.4.9 Stencil all storm drains, e.g. paint, placards or stenciling as practicable in all areas with industrial users and residential users by the end of Year Four of the MS4 permit. 1. Storm drain inlets in the cantonment portion of the installation are partially stenciled.	Storm drain stencils are placed on storm drains at residential and industrial areas. Storm drain stencils are being placed as needed during storm inlet inspections.	No changes planned.
2.4.10.10 No Exposure forms submitted to EPA	In July 2022 three (3) No Exposure notices were submitted to EPA. This submittal was acknowledged by the EPA on 8/16/2022.	No changes planned.

ILLICIT DISCHARGE DETECTION AND ELIMINATION (CONTINUED)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

Dry weather screening and employee/public reporting are the primary methods used by the Air Force Academy to detect illicit discharges. No illicit discharges were identified in 2023. Illicit discharge detection training is awareness level training provided to key staff in the Air Force Academy Environmental Element. The training consists for reviewing EPA guidance for Illicit Discharge Detection and Elimination, which would be utilized if a suspect illicit discharge is identified on the Air Force Academy. As part of the 2017 SWMP update, the Air Force Academy reviewed all the categories of non-stormwater discharges presented in the MS4 permit and determined that none of these categories would potentially be significant contributors of pollutants from the Air Force Academy. Prior to completion and submittal of this annual report, Air Force Academy representatives reviewed all categories of non-stormwater discharges presented in the MS4 permit and determined that none of these categories would potentially be significant contributors of pollutants from the Air Force Academy. As such, additional controls are not required for allowable non-stormwater discharges from the Air Force Academy. A copy of the dry weather screening and illicit discharge tracking information management system is attached to this Annual Report at Attachment I.

4. CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for construction site stormwater runoff control for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measure, as previously submitted	**Status:** Including dates and numeric measures	**Changes proposed to BMP and/or Measurable Goal?** (Yes/No). If yes, provide information on proposed changes and rationale.
2.5.1 Require all contractors having a potential of disturbing one or more acres of land within the Air Force Academy boundaries to obtain NPDES permit for their construction stormwater discharges under an applicable EPA permit and to comply with other applicable State of local construction stormwater requirements for sites disturbing less than one acre, contractors shall comply with requirements as determined by the facility the Air Force Academy SWMP. 1. Construction contracts for projects occurring on the Air Force Academy include appropriate contract language mandating compliance with environmental and stormwtaer discharge permit requirements.	Construction contracts for work performed on the Air Force Academy contain standard specifications and mandate compliance with stormwater regulations, including provisions for erosion and sediment controls. The standard specifications for construction projects on the Air Force Academy were updated to include the construction control measure requirements of the MS4 Permit. A copy of the current Environmental Specifications for the Air Force Academy is included at Attachment E of this annual report. The Air Force Academy SWMP paraphrases the requirements of the Federal CGP that specifically requires all operators of regulated construction activities to complete a Notice of Intent (NOI) and site-specific Stormwater Pollution Prevention Plan (SWPPP) to control the discharge of pollutants off of regulated construction sites. A Notice of Termination (NOT) will be filed once construction is complete and the site has been finally stabilized as defined in the CGP. Finally, proposed construction activities are reviewed by environmental managers through the NEPA and design review processes to flag and verify construction projects obtain appropriate NPDES permit coverage.	No changes planned.

2.5.2 Use an ordinance or other regulatory mechanism available under the legal authorities of the Air Force Academy to require erosion and sediment controls and sanctions to ensure compliance with the terms of the NPDES General Permit for Stormwater Discharges for Construction Activity in Colorado COR12000F (Construction General Permit). This shall include working with contract officers to determine methods to "stop work" or penalizing contractors who violate the term of the aforementioned construction stormwater permit. 1. Enforcement procedures for construction projects occurring on the Air Force Academy are included in applicable contract language.	Construction and renovation contracts for work being performed on the Air Force Academy contain standard specifications and compliance requirements for environmental and stormwater management, including provisions for erosion and sediment controls and compliance with applicable discharge permits. The standard specifications for construction projects on the Air Force Academy were updated to include the construction requirements of the MS4 Permit. Furthermore, government contractors must comply with Federal Acquisition Regulations and contract requirements, including environmental protection. Contractual enforcement provisions include cure notices, contract termination, stop work orders, liquidated damages, negative contractor performance ratings, and being precluded from future government contracts. Enforcement against a government contractor is a contracting officer responsibility with input and support from quality assurance evaluator and subject matter experts on the Air Force Academy. The Air Force Academy Environmental Element Chief is the focal point for receiving, considering, coordinating, and tracking any significant CGP compliance issues on construction projects at the Air Force Academy. In 2024, there were no incidents in which sanctions or specific enforcement actions were initiated against a construction contractor for compliance concerns with the Federal CGP.	No changes planned.

2.5.3 Maintain a list of policies and procedures which can be used to enforce construction site compliance within the Air Force Academy independent of EPA staff directly enforcing the CGP. 1. Maintain a list of policies and procedures to enforce compliance against construction contractors.	The Federal Acquisition Regulations (FAR) provide the foundation for contract work for Federal Agencies, including detailed enforcement procedures for contractors. Each agency has the ability to further supplement the FAR with specific policies and procedures. The FAR and agency specific supplements are available at this website: https://www.acquisition.gov/ The Air Force Academy Contracting Squadron and Army Corps of Engineers Contracting Offices also maintain a list of local contracting policies and procedures that will be used to enforce construction site compliance within the Air Force Academy.	.
2.5.4 Implement procedures for site plan review which incorporate consideration of potential water quality impacts. 1. Maintain existing review process for design and construction projects planned for the Air Force Academy.	Any project over $50,000 gets routed through the NEPA site plan/scope of work review process which includes reviews by Environmental Planning, Environmental Element, Cultural Resource Program Manager, Natural Resource Program Manager, etc. Comments or concerns pertaining to the proposed project are recorded on an Air Force Form 332 which is maintained with the project folder. Comments regarding water quality issues are submitted via the 332 forms to the Engineering/Architecture Design Firm. The Air Force Academy currently implements a design review process that involves multiple levels of review for the scope of design and construction projects. This existing design review process provides Air Force Academy environmental management staff, engineers, and planners the opportunity to review site plans and consideration of potential water quality impacts. Design review comments are maintained with the project folder.	No changes planned.

2.5.5 Implement procedures for receipt and consideration of information, including complaints of construction site non-compliance, submitted by the public. 1. Maintain a storm water action line and document communications received from the public (previously discussed in this annual report).	A stormwater action line has been established, and the phone number is provided on outreach materials. The number is (719) 333-2790. All calls from the public concerning construction site stormwater management are logged in the public participation log. In 2024, there were no reports from the public concerning construction site stormwater management. A sample of the public participation log is provided with this annual report.	No changes planned.
2.5.6 Review the Scope of Work for construction projects in order to ensure that the SWMP and SCMs for erosion and sediment control and construction dewatering can be determined to be effective given the regulations and environmental conditions at the Air Force Academy. 1. Maintain existing review process for design and construction projects.	The Air Force Academy currently implements a design review process that involves multiple levels of review for the scope of design and construction projects. Pre-project scope of work review is provided through the NEPA process mentioned in 2.5.4. 30%, 60%, 90%, and 100% plans-set design submittals and the Design Analysis Document is reviewed by Air Force Academy Civil Engineer Squadron personnel. Review and approval of the SWPPP is provided by the Environmental Element Chief before the contractor submits a Notice of Intent (NOI) for coverage under the Federal CGP. Design review comments are maintained with the project folder.	No changes planned.
2.5.7 Implement an inspection plan and keep a copy of that plan in the SWMP which provides inspection triggers and a required time frame upon which construction sites must be inspected by Air Force Academy staff. All sites within this plan must be inspected at a minimum quarterly. 1. Conduct oversight compliance assistance inspections of permitted construction sites (greater than 1 acre in size or part of a large common plan of development that will cumulatively disturb 1 acre or more) at least quarterly and prior to construction permit termination to verify final stabilization has been met on all areas of the site.	In 2024, the Air Force Academy continued to implement a formal quarterly oversight inspection program for construction projects that require coverage under the CGP. In 2024, there were 16 permitted construction activities occurring on the Air Force Academy that required quarterly oversight inspections. One NOT was issued in 2024 to administratively change operators of a site waiting for adequate revegetation. The Colorado Department of Transportation is responsible for completing 90-day MAR inspections of the Powers Boulevard Interchange project.	Quarterly oversight inspections changed to 45-day oversight inspections per the new 1 January 2025 USAFA MS4 permit.

2.5.8 Maintain a site inspection form in the SWMP for use by Air Force Academy construction management and oversight personnel when performing inspections required by **Part 2.5.7** of the Air Force Academy MS4 Permit. 1. The Air Force Academy will develop and maintain a site inspection form for use when performing oversight compliance inspections.	The Air Force Academy has developed an inspection form to support construction oversight inspections. A copy of this form is maintained with the Air Force Academy SWMP and included with this annual report at Attachment J.	No changes planned.
2.5.9 Maintain and utilize a Notice of Termination (NOT) form or alternative process for The Air Force Academy independent of the CGP NOT form and have The Air Force Academy staff inspect all construction sites prior to termination to ensure final stabilization of the site has been met at all areas of the site utilizing vegetative stabilization. 1. The Air Force Academy will develop and maintain a site inspection form for use when performing pre-Notice of Termination site inspections.	There was one CGP permitted construction project in 2024 that required a NOT. This was the USAFA Visitor's Center. Final revegetation was not completed because this NOT was issued to change operators. The new operator obtained coverage for the same site under a separate NOI number.	No changes planned.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROL (CONTINUED)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

Fourteen (14) projects on the Air Force Academy were permitted or ongoing under the Federal CGP during 2023. Permitted construction projects in 2023 included: Stadium Boulevard Storm Drainage Repairs, Powers Boulevard Interchange, Cadet Chapel, Monument Branch Creek Rehabilitation, Cyberworx, Elkhorn Creek Channel Restoration, Combat Arms Training and Maintenance, Falcon Stadium Renovations, Black Squirrel Creek Restoration, North Gate Bridge Erosion Repair, Middle Tributary Wastewater Force Main Replacement, Middle Tributary Channel Restoration, New Visitors Center, and Hotel site. Quarterly oversight and pre-NOT submittal inspections of permitted construction projects were accomplished and completed inspection reports are available upon request. One (1) construction project (North Gate Bridge Erosion Repair, was completed and the site was Finally Stabilized in accordance with the Federal CGP. No significant findings or recurring issues were identified during these inspections, particularly situations that results in some form of enforcement activity. It is anticipated that regulated construction activities will be ongoing at the Air Force Academy in 2024. Oversight inspections will continue to occur on a quarterly basis for 2024.

As required by Paragraph 2.5.10.8 of the MS4 Permit, the following person is responsible for coordination and implementation of the construction site stormwater runoff control program:

Contact name: Barry Schatz
Position/work group title: Chief, Environmental Element
Contact phone number: 719.333.6716
Contact E-mail address: barry.schatz.2@us.af.mil

5. POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for construction site stormwater runoff control for the reporting period; including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measure, as previously submitted	**Status:** Including dates and numeric measures	**Changes proposed to BMP and/or Measurable Goal?** (Yes/No). If yes, provide information on proposed changes and rationale.
2.6.1 Establish and implement a process to ensure that all new and re-development projects that disturb equal to or greater than one acre and that discharge into permittee's small MS4, are designed and constructed with permanent post-construction stormwater control measures designed to prevent or minimize water quality impacts using structural or nonstructural BMPs appropriate for The Air Force Academy. 1. Maintain existing review process for design and construction projects planned for the Air Force Academy.	To ensure post-construction runoff requirements are met, the Air Force Academy has implemented a multi-phase review process as follows: The design Engineering/ Architectural firm delivers 30%, 60%, 90%, and 100% plans-set submittals and the Design Analysis Document to the Air Force Academy Civil Engineer Squadron. The hydrology calculations for pre-construction runoff coefficient and post construction runoff coefficient are included in the Design Analysis, which are reviewed by the Air Force Academy's Civil Engineer Squadron Project Manager. If a deficiency is noted, feedback will be given to the Engineering/Architectural firm, so that corrections can be accomplished early in the design process. All design review comments and corrections are recorded in the project folder.	No changes planned.
2.6.2 For the purpose of this permit, such BMPs shall be selected based on their ability to maintain onsite predevelopment runoff conditions and be implemented onsite, except to the extent it is impracticable to do so. 1. Maintain existing review	The Air Force Academy's Standard Environmental Specifications require stormwater runoff control designs be consistent with criteria in Colorado Springs/ El Paso County Stormwater Drainage Control (page 3, paragraph (E) (2)). Also, AFMAN-32-1067 (page 27, §	No changes planned.

process for design and construction projects planned for the Air Force Academy.	6.3.1) requires compliance with Energy Independence Security Act (EISA) 2007 § 438, which requires a permanent water quality treatment device installation for any project adding 5,000 square feet of new impervious surface, such that the site will retain pre-development hydrology.	
2.6.3 To the extent the permittee determines it is impracticable to maintain predevelopment runoff conditions by implementing such BMPs at a new or redevelopment site, it shall install or utilize and maintain alternative stormwater control measures to prevent or minimize water quality impacts from the runoff of new or redevelopment sites. 1. Document all impracticability determination and provide supporting documentation to the Air Force Academy Water Quality Program Manager.	There were no impracticality determinations for projects initiated on the Air Force Academy in 2024.	No changes planned.
2.6.4 Specific information regarding any project for which it is deemed by the permittee to be impracticable during an annual reporting period must be documented and included in the corresponding annual report.	There were no impracticality determinations for projects initiated on the Air Force Academy in 2024.	No changes planned.
2.6.5 When updated, include hydrologic performance specifications and information related to the design and maintenance of permanent stormwater control measures in natural resource plans. 1. Hydrologic performance standards and information related to design and maintenance of permanent post-construction stormwater controls are included in natural resource plans when these plans are updated.	The Integrated Natural Resource Management Plan (INRMP) was updated and approved by the Commander of the 10th Air Base Wing in June 2023. There were no substantial changes to the hydrologic performance standards. The updated INRMP includes specific activities to address stormwater impacts from off-base development activities. The updated INRMP is available at: https://usafa.isportsman.net/files/Documents%2FUSAFA%20INRMP%202023-2028.pdf	No changes planned.

2.6.6 Include post-construction BMP "as-builts" for all newly installed permanent stormwater control measures in a georeferenced data management system. 1. Conduct annual review of the post-construction stormwater controls inventory/map and make required updates.	Two new underground detention facilities were installed on the Air Force Academy in 2024. The structures have been installed, but the site is still under construction.	No changes planned.
2.6.7 Ensure that all newly installed post-construction stormwater control measures are working as designed prior to closing out contracts. 1. Document inspections of all newly installed post-construction stormwater control measures prior to closing out contracts.	Two new underground detention facilities were installed on the Air Force Academy in 2024. The structures have been installed, but the site is still under construction. See inventory in attachment H.	No changes planned.
2.6.8 Upon closeout of new construction projects, include maintenance required for newly installed permanent post-construction stormwater control measure into a long-term maintenance plan. 1. Document annual visual inspection results and initiate maintenance requirements as required. Track corrective actions until maintenance or repair is completed. Any permanent post-construction stormwater control measures that are under warranty, typically 1 year following installation, will be annotated and the appropriate official responsible for warranty enforcement will be notified.	To properly maintain existing and future structural BMPs, Air Force Academy staff perform a visual inspection of each structural post-construction stormwater BMP, at least yearly. A work order is initiated for any maintenance requirements that are identified during the inspection process. Inspection reports for the 2024 post-construction stormwater BMP inspections are available upon request. All structures were in good condition and no work orders for maintenance were needed.	No changes planned.

POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT (CONTINUED)

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

The Air Force Academy will continue to implement the Post-Construction Stormwater Management control measure as outlined in the Air Force Academy's SWMP and briefly presented in this annual report.

As required by Paragraph 2.6.10.5 the following person is responsible for coordination and implementation of the post-construction stormwater management program:

Contact name: Barry Schatz
Position/work group title: Chief, Environmental Element
Contact phone number: 719.333.6716
Contact E-mail address: barry.schatz.2@us.af.mil

7. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICPAL OPERATIONS

Provide the status of any measurable goal scheduled for completion during the reporting period or for which activities have begun. For program elements started, but not completed, any milestones that have been met must be indicated. If a change will be proposed to the BMP or measurable goal as part of the annual report, this must be stated and the proposed changes discussed. For each change proposed, you must provide information on:

1. The BMP/Measurable goal for which a change is proposed;
2. Any proposed changes to the BMP description;
3. Any proposed changes to the measurable goals (including specific dates and measures); and
4. The rationale for the proposed changes.

Describe any measurable goal(s) for pollution prevention/good housekeeping for municipal operations for the reporting period including dates and numeric measures:

Measurable Goal(s) Including dates and numeric measure, as previously submitted	Status: Including dates and numeric measures	Changes proposed to BMP and/or Measurable Goal? (Yes/No). If yes, provide information on proposed changes and rationale.
2.7.1 Not later than four years from the effective date of this permit, evaluate existing street cleaning operations, catch basin cleaning operations and street sanding/salt/deicing /anti-icing/ practices occurring within the Air Force Academy to minimizing negative impacts to water quality. This evaluation must also examine the existing practices for the disposal of waste and maintenance operations. This evaluation must identify any actions or improvements necessary to minimize negative impacts on water quality and timelines for incorporating improvements.	Catch basins/inlets are inspected and cleaned on a rotating schedule by Air Force Academy Civil Engineer Squadron personnel, such that all mapped inlets are inspected in a calendar year. Written inspection reports are kept in monthly inspection binders in the USAFA Pavement and equipment office. Cleaning is accomplished as needed with water truck, backhoe, skid steer, and vac truck. Debris that is collected during sweeping/vac truck operations is dried in evaporation basin and disposed in a sanitary landfill. Roadway snow and ice control activities utilize techniques to minimize water quality impacts. Equipment operators are trained on each piece of snow and ice control equipment. Equipment is inspected for leaks and functionality prior to being deployed for operation. Use of sand, salt, and chemicals for snow and ice control is minimized. There are no actions or improvements necessary to minimize negative impacts on water quality.	No change planned.

2.7.2 Provide annual training for facility maintenance contract companies, environmental program managers, and other people identified as having fleet maintenance activities in the line with the SWMP. 1. Conduct annual training of fleet maintenance and civil engineer shops. Maintain attendance roster and training date.	Facility and fleet maintenance operations on the Air Force Academy are performed by contract. The Air Force Academy 2022 Environmental Standards that the contractor must adhere to were used as awareness level training for project managers, facility managers, fleet maintenance personnel, and contracting officers in 2024. Spill prevention, control, and countermeasures training was provided to facility and fleet maintenance staff in April 2024. A copy of this updated training program is included in Appendix L. Training rosters are available upon request.	No changes planned.
2.7.3 Provide deicing training to minimize the use of and runoff from chemical deicers and traction aggregates. 1. Conduct training once per year and maintain attendance roster.	Snow and Ice Control training is provided in accordance with Air Force Instruction 32-1001 *Civil Engineer Operations*. Rosters are available upon request. All personnel who operate equipment to apply chemical deicers and traction aggregates are completely trained in the proper operation of the equipment. Equipment training records are maintained within the individual employee records and/or government driver's license.	No changes planned.
2.7.4 Develop and implement a schedule for cleanout of storm sewer inlets in a manner which prevents significant deposition of sediment or other debris to receiving waters and provide data or a description of this schedule and its implementation in the SWMP for the facility.	Stormwater inlets on the Air Force Academy are inspected annually and cleaned as needed based on visual inspection results. Attachment K include a sample inspection report for storm drain inlets.	No changes planned.

2.7.5 Develop and implement a schedule for sweeping streets in a manner which prevents significant deposition of sediment or other debris to receiving waters and provide data or a description of this schedule and its implementation. 1. Accomplish an average of 20 hours of street sweeping per month.	The Air Force Academy has established a recurring work order for street sweeping. Street sweeping hours consist of eight (8) hours per day for five (5) days per week.	No changes planned.
2.7.6 Consider the need for and application of cover to prevent airborne deposition of particulates from storage piles at the municipal materials storage yard. 1. By the end of Year 2, the Air Force Academy Water Quality Manager will complete an evaluation of the need for and application of covers to prevent airborne disposition of particulates from storage piles on the Air Force Academy.	It was determined that the existing stockpiles in the Contractor Yards were not significant source that would cause or contribute to any airborne deposition of particulates.	No changes planned.

Narrative description. Provide any descriptions which may further describe the implementation of this minimum measure. Such narrative may include descriptions of efforts which overlap several minimum measures or descriptions of documents or programs which have been created in an effort to implement this minimum measure:

Nothing else to report for this control measure.

8. RESULTS OF INFORMATION COLLECTED AND ANALYZED*

If you have collected and/or analyzed information during the reporting period, including any monitoring data used to assess the success of the program at reducing the discharge of pollutants, submit a short summary of the information and any analysis completed.

Measurable Goal(s)	Results of information collected and analyzed that must be reported for this item
2.8.1 Not later than three years from the effective date of this permit, the permittee must develop a program to evaluate the water quality in Smith Creek, Deadman's Creek, Monument Creek, Monument Branch, West Monument Creek, Kettle Creek, and any other associated waters of the United States within the exterior boundaries of the Air Force Academy, as it enters and leaves the Air Force Academy. This program shall at a minimum include evaluations of streambank stabilization, and water quality. The program shall specifically address the Air Force Academy's potential contribution to E. coli loading to Monument Creek.	The Air Force Academy submitted a proposed Water Quality Monitoring Program to EPA Region 8 in conjunction with the 2018 MS4 Permit Annual Report. The proposed Water Quality Monitoring Program included dry and wet weather sampling for e.coli at 24 locations on the Air Force Academy, including Monument Creek, West Monument Creek, Deadman's Creek, Spring Creek, Pine Creek, Middle Tributary, Monument Branch, Black Squirrel Creek, and Black Forest Creek sample locations. In 2024, samples were taken at each of these streams where they enter and exit Air Force Academy property. Results of these samples are available upon request. The new 2025 MS4 permit requires sampling for PFAS during stormwater runoff events. The 2025 MS4 permit does not require dry weather stream sampling. In addition to the water quality analysis outlined in the Air Force Academy's Water Quality Monitoring Program, monthly Regulation 85, Colorado Nutrients Control Regulation monitoring is performed near the Air Force Academy Wastewater Treatment Plant. Samples indicated that nutrient loading near and from the Air Force Academy wastewater treatment plant was below water quality standards. The US Fish and Wildlife Service performs natural resource management activities on the Air Force Academy which includes watershed, habitat, and stream/riparian management. The US Fish and Wildlife Service has identified sedimentation and streambank stabilization issues on the Air Force Academy which is at least partially attributable to urban stormwater runoff, including significant development/urbanization occurring around the Air Force Academy that is increasing stormwater runoff to streams flowing through the Air Force Academy. The US Fish and Wildlife Service and Air Force have partnered to study, design, and construct stream stabilization and habitat restoration projects for multiple streams on the Air Force Academy. The Air Force Academy is currently working a stream restoration project for Black Squirrel Creek and has completed construction for Middle Tributary in 2024. Additional information on the Air Force Academy's watershed management program is available at: https://usafa.isportsman.net/Watershed.aspx
2.8.2. The water quality monitoring program may include indicators such as chemical monitoring, assessment of macroinvertebrates or other aquatic life, or watershed assessment of river stability and sediment supply, provided that the monitoring program provides meaningful data to evaluate the effectiveness of the stormwater management program. The permittee is responsible for evaluating data for analysis of trends	The US Fish and Wildlife Service performs natural resource management activities on the Air Force Academy, including aquatic life monitoring and assessment. The US Fish and Wildlife Service maintains an Integrated Natural Resource Management Plan (INRMP) that discusses assessment, survey, and management activities on the Air Force Academy for aquatic life and wetlands. A copy of the current Air Force Academy INRMP is available at the following website: https://usafa.isportsman.net/files/Documents%2FUSAFA%20INRMP%202023-2028.pdf

2.8.3 The water quality monitoring program description must be sent to EPA with the Annual Report for year 3 of this permit term. Programs will be assessed by the water quality monitoring coordinator for EPA Region 8 to determine whether the program meets the goals of this permit and whether the data is being collected and reported in compliance with EPA test procedures approved under 40 CFR Part 136. The permittee shall incorporate any comments from the EPA concerning goals and test procedures.	The Air Force Academy submitted a proposed Water Quality Monitoring Program to EPA Region 8 in conjunction with the 2018 MS4 Permit Annual Report. To date, the Air Force Academy has not received any feedback or comments from EPA concerning the goals or test procedures proposed by the Air Force Academy in the Water Quality Monitoring Program document. The Air Force Academy plans to continuing implementing the proposed Water Quality Monitoring Program in 2024.

*****Data collected to audit the implementation status of a program element does not need to be reported in the annual report unless required by an established measurable goal or as a requirement or result of an inspection or enforcement action. For example, data such as street miles swept, visitors at an information booth, or visits to a web site do not need to be included in the annual report unless directly related to a measurable goal or committed to be reported and/or analyzed in a program description.

9. SUMMARY OF INSPECTIONS AND ENFORCEMENT ACTIONS.

Provide a summary of the number and nature of inspections and formal enforcement actions performed. Site-specific information may also be included, but is not required.

Program Area	Description of Enforcement Actions/Inspections
No storm water related regulatory inspections were conducted in 2024.	

10. PROPOSED CHANGES TO THE STORMWATER MANAGEMENT PLAN.

Provide a narrative description of any changes or additions to the storm water management program.

The Air Force Academy continues to comply with the installation's MS4 permit and SWMP. In 2023, the Air Force Academy continued implementing the Water Quality Monitoring Program as presented in the Air Force Academy's 2018 MS4 Annual Report. The Air Force Academy will continue to evaluate the results of the monitoring program and make appropriate updates to the SWMP. Additional updates to the SWMP planned for 2024 are presented previously in this Annual Report. The Air Force Academy's SWMP will be reviewed and updated when EPA Region 8 reissues the installation's MS4 Permit.

11. Notice of Program Element Operation by a Second Party. Another government entity may be relied on to perform requirements of your MS4 permit. However, as the permittee, you remain liable for compliance with the terms of the permit if the requirements are not fulfilled. You must complete this annual report for the geographic areas covered under your permit, for all program areas, even if one or more program elements/areas is being performed by another entity. (However, if you are performing a program element for another permittee, you do not need to include that activity in this report.) If you are relying on another government entity to satisfy some of your permit obligations (and if the information has not been previously provided to the EPA in earlier reports or the application), the annual report must include a statement to that effect. If the BMP and/or measurable goal will be modified in addition to the change of operator to another government entity, the change must be included in Item G, above. Example statement: "As of September 15, 2003, Monroe County is performing the construction site plan reviews for the Nixon Air Force Base in accordance with the procedures in the Base's original application."

The Air Force Academy is not relying on another government entity to satisfy any permit obligations.

I. Certification.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

SCHATZ.BARRY.ALLEN.1571777726 Digitally signed by SCHATZ.BARRY.ALLEN.1571777726
Date: 2025.03.26 14:07:42 -06'00'

Signature of Permittee (legally responsible person) ** Date Signed

Mr. Barry Schatz Chief, Environmental Element

Name (printed) Title

**This report may be signed by a duly authorized representative of the permittee in conjunction with the signatory requirements for NPDES permitting provided at 40 CFR§122.22(b).

Attachment A
Newcomer's Orientation Briefing Slides

HQ U.S. Air Force Academy

Integrity - Service - Excellence

Environmental

10 CES/CEIEC
10CES.CEIEC.environmental@us.af.mil

10 CES/CEI Environmental Manager
333-6716

Environmental Contacts

- **Internet search for USAFA ENVIRONMENTAL MANAGEMENT will take you to our contact page**

10 CES/CEIEC - Environmental

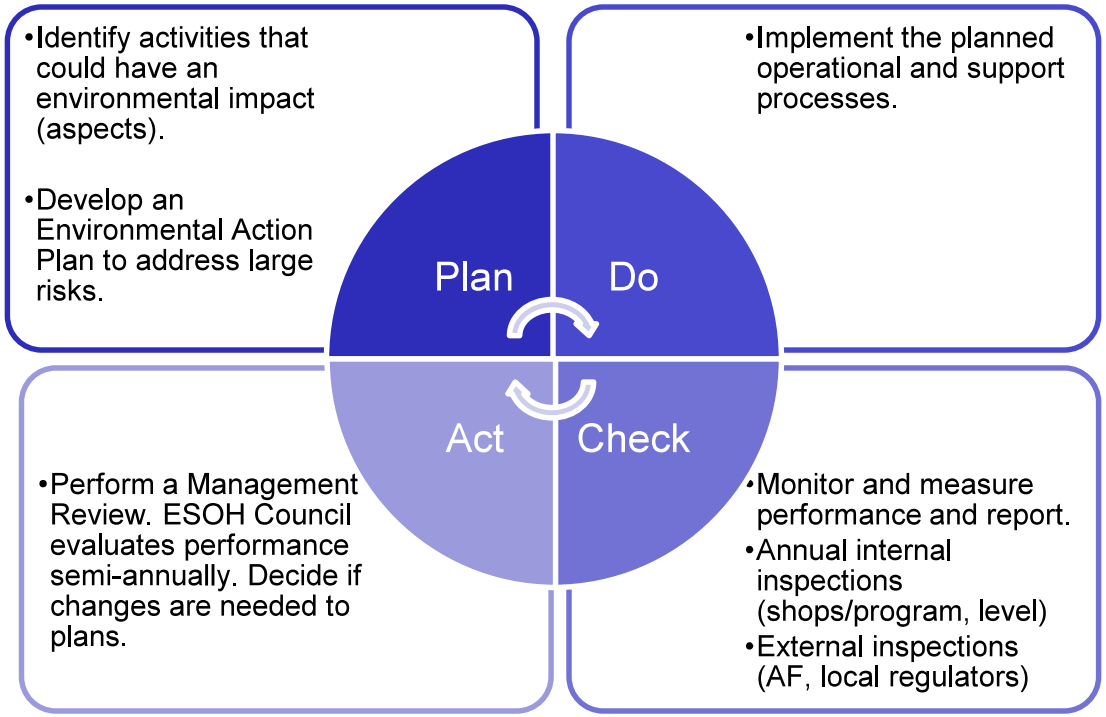
- **Why do we do what we do?**
  - **Regulations for USAFA**
    - **Environmental Protection Agency (EPA)**
    - **US Fish and Wildlife Services (FWS)**
    - **State of Colorado**
    - **AF Policies (AFI, AFMAN, etc.)**

Environmental Programs

- **Environmental Programs**
  - Environmental Management System (EMS)
  - Air Quality
  - Water Quality
  - Hazardous Materials
  - Hazardous Waste
  - Toxic Substances (Asbestos, Lead Based Paint, PCBs)
  - Pest Management
  - Solid Waste/Pollution Prevention/Green Procurement
  - Storage Tank Management (POLs)
  - Environmental Restoration
  - National Environmental Policy Act (NEPA)
  - Cultural Resources
  - Natural Resources

Environmental Management System

- **Identify, rank, and manage environmental issues**
- **Proactive approach to maintaining environmental compliance (not reactive)**
- **ISO 14001 - "Plan Do Check Act" Cycle**



Environmental Commitment Statement

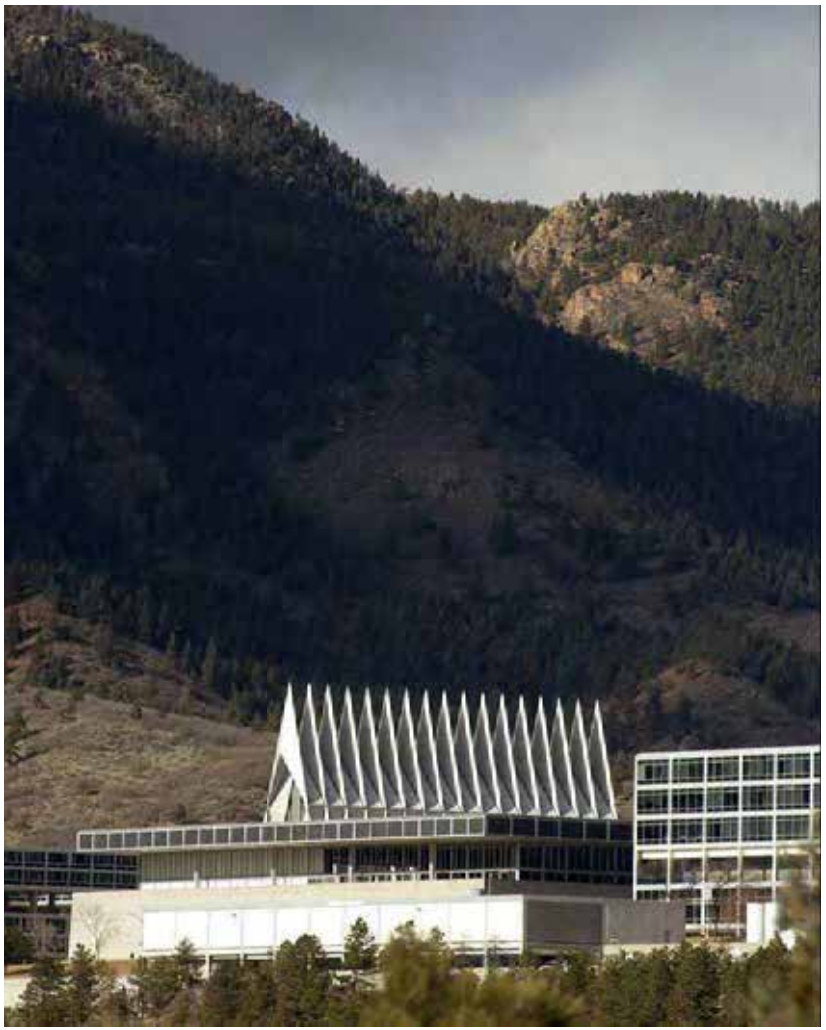
USAFA strives to:

- **Understand that all installation personnel are responsible for environmental protection and conservation.**
- **Set attainable goals to promote conservation of natural and man-made resources.**
- **Achieve or exceed environmental goals and objectives by continually evaluating processes and procedures.**
- **Focus on pollution prevention, enhancing Monument Creek stabilization, water quality, stormwater management, and wildlife conservation.**
- **Aim to continually improve environmental conservation, awareness, and competency at all organizational levels by making sound environmental decisions in day-to-day operations while maintaining mission readiness.**

Reviewed annually by wing commander

Cultural Resources

- **USAFA has hundreds of historic buildings**
  - ***The Cadet Area has been designated a National Historic Landmark***
  - ***The entire installation is treated as a historic district***
- **Any work that can affect these historic resources must comply with applicable laws, codes, and regulations**
  - ***This potentially applies to all buildings, site planning, roads, and infrastructure***
- **Questions? Contact the Cultural Resource program at 333-7341**



Natural Resources

- Academy property – 18,455 acres
- Farish Recreation Area – 655 acres
- Bullseye Airfield – 197 acres
- Key Management Issues
  - Encroachment
  - Game and Fisheries Management
  - T&E Species
  - Wildland Fire
  - Forest Pests/Disease
  - Noxious Weeds
  - Erosion/Sedimentation
  - Nuisance Wildlife

Natural Resources

- **Wildlife**
  - Do not feed or approach
  - Enjoy the view from a safe distance
  - Properly manage household garbage by closing and latching dumpsters
  - Closely watch small children and pets
  - Keep all food inside, including pet food

- **Report Wildlife**
  - Bears and Mountain Lions to Security Forces at 333-2000 and Natural Resources at 333-3308
  - At housing area – report to Housing Office
- Slow down and scan roadsides, especially at dawn and dusk
- Natural Resources Website Permits and Information – Hunting and Fishing
  - https://usafa.isportsman.net

Water Quality

- **Stormwater Concerns**
  - Erosion and sedimentation in stormwater runoff can be very damaging
  - Stormwater collecting pollutants (oil, herbicide residue) from streets, parking lots, and building landscaping
  - Untreated stormwater eventually reaching streams and impacting the aquatic life

- **This is everyone's responsibility**
  - Prevent land disturbance
  - Use Best Management Practices
  - Do not rinse spills with water, use dry clean up methods
  - Keep trash cans covered and do not overfill
  - ***Remember, only rain and snow melt go into storm drains!***
    - ***Anything else is an illicit discharge that needs to be reported to 333-1426***

Spill Response

- Is spill less than 5 gallons?
- Do you know what the spilled material is?
- Is a Safety Data Sheet (SDS) for the material available?
- Are appropriate cleanup materials and PPE available?
- Can you safety contain/clean up the spill without harm to yourself or the situation?

If No for 1 or more

- Immediately move to a safe distance for the spill; alert others to do the same
- Call 911 to dispatch USAFA Fire Department. If calling from a cell phone, State that you are on USAFA.
  - Location
  - Type of material spilled
  - Estimated quantity spilled
  - Are there any injuries or personnel exposed?
  - Evacuation status of spill area
- Call 333-2790 to activate 10 CES Spill Response
- Wait for Fire Department to arrive and answer their questions/follow instructions.
- Immediately call WWTP at 333-3334 if any material reaches a sanitary drain (floor drain).

If Yes for all

Inside Building

- Contain and clean up material according to SDS, put material in appropriate container.
- Call WWTP at 333-3334 if any material reaches a sanitary drain (floor drain)
- Call Hazardous Waste Accumulation Site at 333-3852 to drop off collected material.

Outside of Building

- Contain and clean up material according to SDS, put material in appropriate container.
- Call 10 CES Spill Response at 333-2790 if any material reaches a storm drain.
- Call Hazardous Waste Accumulation Site at 333-3852 to drop off collected material.
- Inform Environmental of spill at 719-440-9646

Recycling Center on Base

- **Located at the BX/Commissary Parking Lot**
- **Open 24-hours**
- **Accepted Recyclables**
  - Paper
  - Plastic (#1 and #2)
  - Glass
  - Aluminum/Metal Cans
  - Cardboard

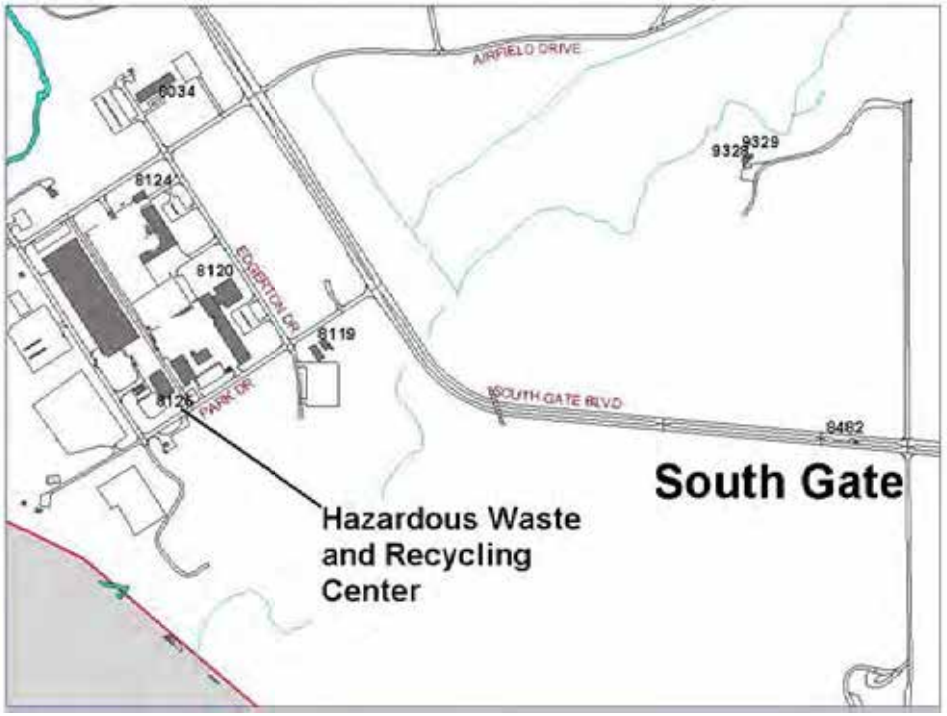
Recycling on Base Housing

- **Accepted Recyclables**
  - **All paper**
  - **Plastics (only #1 and #2)**
  - **Cans**
  - **Glass**
  - **Cardboard**
- **Recycling bins are picked-up every other Thursday, please see the housing office for a copy of the calendar**
  - **For questions and/or concerns please contact:**
    - **Hunt Properties Housing Office at (719) 867-9688**
    - **Hunt Properties Maintenance at (719) 867-9675**

AIR FORCE ACADEMY
FAMILY HOUSING
A Hunt Military Community™

Hazardous Waste Accumulation Site (HWAS)

- Hazardous Waste (HW) Accepted
  - All HW generated on USAFA, no household waste
  - All Universal Waste generated on USAFA
  - Recyclables
    - Lead Acid Batteries
    - Nickel Batteries
    - Lithium Batteries
    - Used oil
    - Used antifreeze
- Location: Bldg. 8125
  - Hours of Operation
    - Mon - Fri 0600-1000
    - Appointments: 719-470-8674 Bill Pancake
      571-623-5600 Lalita Martin



Household Hazardous Waste

<u>Address:</u> 3255 Akers Dr
Colorado Springs, CO 80922
<u>Hours:</u> Mon/Tues/Thurs/Fri
0830 to 1200 and 1300 to 1600

Integrity - Service - Excellence

Thanks for Keeping Colorado Beautiful!

10 CES/CEIEC
10CES.CEIEC.environmental@us.af.mil

Environmental Manager 10 CES/CEI
333-6716

Attachment B

Environmental Management Webpage Sample and Points of Contact

10TH MISSION SUPPORT GROUP

MISSION
Provide full spectrum mission support to the U.S. Air Force Academy and its military community: provide the right support at the right place and the right time.

VISION
Deliver innovative mission support solutions today and tomorrow.

HISTORY
The 10th Mission Support Group was initially established as the 10th Airdrome Group at Pope Field, later Pope Air Force Base, Nov. 14, 1947, and disestablished on Aug. 27, 1948. The 10th MSG was consolidated on Oct. 1, 1948, with the 10th Air Base Group, which was activated Aug. 25, 1948, and inactivated April 1, 1949.

The group was activated again at Spangdahlem Air Base, Germany, July 10, 1952, and relocated to Royal Air Force Alconbury, England, Aug. 25, 1959.

The group was re-designated as the 10th Combat Support Group Feb. 15, 1962 and then as the 10th Support Group March 31, 1993. The group was again inactivated Nov. 1, 1994.

The 10th Support Group was activated at the U.S. Air Force Academy March 11, 2002, and was re-designated the 10th Mission Support Group.

10TH MISSION SUPPORT GROUP LEADERSHIP

Col. Cheo Stallworth
10 MSG Commander

Lt. Col. Amanda Shumaker
Deputy Commander

Mr. Charles Kimble
Deputy Director

10TH MSG UNITS

10TH C V L ENGINEER SQUADRON

Mission: Manage our built and natural environments through respect for our heritage, sustained facility excellence, and a focus on the future infrastructure of the Academy.

Vision: At the forefront of facility planning and operational excellence, creating the physical foundation to produce leaders of character.

Contact Us
Phone: (719) 333-2300
DSN: 333-2300/
6130/1999/2781/4893

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(719) 333-4876/3482/3523

Quality, Safety, and Health Manager
(719) 333-2664

Snow Control Center
(719) 333-3521
Winter Survival Card
Academy Snow Route Map
U.S. Air Force Academy Weather
Weathernet

U.S. Air Force Academy Road Conditions Hotline
(719) 333-2800

Falcon Alert Line
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Quality Control
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Amy Balek (719) 333-2937

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Cultural Resources: (719) 333-7341
Natural Resources: (719) 333-3308
Air Quality: (719)-333-5826
Water Quality: (719)-358-1492
24-Hour Spill Response: 911

AFCEC PFOS/PFOA
Local FAQs
USAFA Recycling Program: USAFA_recycles@afacademy.af.edu
USAFA Recycles
2024 USAFA Drinking Water Report
2022 Colorado Springs Utilities Drinking Water Report
Stormwater Program Brochure
Environmental Management System (EMS) Commitment Statement

Housing Management
Hunt Military Communities (719) 982-4800
Community Housing (719) 333-2247
Permanent Party Dormitories (719) 333-4229
Air Force Housing Public Site

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CONTACT US

10th Mission Support Group
8034 Edgerton Drive Suite 250
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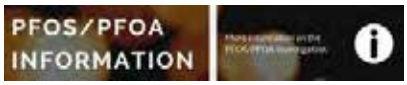

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Attachment C
Stormwater Brochure

WHAT'S CAUSING OUR POLLUTION?

Construction

✓ Contractors disposing of concrete washout in storm drains or drainage ditches.
✓Sediment washing into gutters and streets from job sites.

Around the House

✓ Cleaning brushes or rinsing paint containers into the gutter.
✓ Homeowners over-fertilizing lawns or using pesticides and herbicides improperly.
✓Car washing in the driveway or street.
• Pouring cooking grease and oils down stormdrains.

Motor Vehicles

• Vehicles leaking oil and gas onto the streets.
• Spills of oil and fuel during maintenance and refueling.
• Cracked batteries.
• Improper disposal of antifreeze and old tires and batteries.
• Off-road vehicles tracking mud onto paved streets.

Remember,
ONLY rain and snow go into storm drains.

Working together, we can make a difference!

To report a spill CALL 911
(Tell the operator you are on USAFA property)

Keep OUR Streams Clean!

USAFA Stormwater Program 719-333-2790

At USAFA, the sanitary sewer system (wastewater) and the storm drain system (stormwater) are two separate systems. Inlets to the storm drain system are typically located outside along the gutters and streets. Rainwater and snowmelt (stormwater) that enters a storm drain inlet flows directly to our creeks and ditches, and eventually discharges into Monument Creek, on the east of side of USAFA.

To report the release of ANY contaminant into the environment, call, 719-333-2790

Mud, oil, soap and trash that is tracked, spilled, poured or dumped, onto our streets and parking lots gets picked up by stormwater and can enter the storm drain system. Natural areas also contribute sediment (mud) through the process of erosion. This pollution then flows untreated into our creeks and ditches, causing adverse impacts to water quality. Aquatic life struggles to survive, and drinking water for people downstream is harder to purify.

Did you know – ONE quart of oil can contaminate over 250,000 gallons of water?

****

To keep our streams clean, it is important that ONLY stormwater goes into storm drains. Discharges of fuels, cooking oil, mud, debris and trash should be prevented!

HOW YOU CAN HELP

- ✓ Wash your car at the car wash (the water is usually recycled). If you do wash the car at home, chose a non-toxic, phosphate-free or biodegradable soap. If possible, wash the car on a grassy area, so the soapy water will soak into the ground and not go into the storm drains.
- ✓ Avoid off-road vehicle use.
- ✓ Don't rinse oil spills with water. Apply cat litter or other dry absorbent material, sweep it up and dispose of it in the trash.
- ✓ Follow directions on pesticides, herbicides and fertilizers. Do not apply if rain is expected within 48 hours.
- ✓ Do not rake or blow leaves into the storm drains – bag them.
- ✓ Use water-based, biodegradable cleaning products.
- ✓ DON'T LITTER – RECYCLE!
- ✓ To dispose of old paint, pesticides and other household hazardous waste, contact the El Paso County Hazardous Household Waste Facility at 520-7879

Attachment D

2024 Erosion Control and Revegetation Standards

United States Air Force Academy
Revegetation and Erosion Control Standards

Last Updated: October 2024

Table of Contents

SECTION 01351: REVEGETATION AND EROSION CONTROL STANDARDS

1.0 Introduction

Native revegetation and erosion control is required for any project that disturbs soil or vegetation within the United States Air Force Academy (USAFA), Farish Recreation Area, and Bullseye Auxiliary Airfield. Compliance with the USAFA Revegetation and Erosion Control Standards (Standards) is mandatory to promote natural resource objectives, meet project-related permit requirements, and to comply with the **USAFA ENVIRONMENTAL STANDARDS** and its component plans. Landscaped areas adjacent to buildings (or other common locations) that include ornamental plantings and are regularly manicured, etc. are not required to comply with these standards and are regulated by a separate process and document.

Information provided in these Standards does not relieve the Contractor or other personnel from responsibility to comply with all state, local, and federal environmental laws, regulations, and operating standards during performance of work on USAFA. The USAFA Environmental Standards should be referenced for a more comprehensive list of environmental laws, regulations, and operating standards above those pertinent to revegetation and erosion control plan development. These Standards are separate or are in addition to the requirements set forth in this document.

In general, if discrepancies between regulatory agency requirements are found, the most stringent requirement shall prevail. Compliance with these Standards does not affect obligations to comply with other applicable state and federal criteria and regulations.

These Standards identify the minimum requirements for design, construction, and maintenance of projects on USAFA, Farish Recreation Area, and Bullseye Auxiliary Airfield (USAFA Lands) and includes the following sections:

1.0 Introduction
2.0 Site Preparation
3.0 Revegetation Installation
4.0 Watering and Irrigation
5.0 Erosion Control
6.0 Post-Construction Revegetation Establishment and Maintenance

Contact the USAFA Natural Resources Department at (719) 333-3308

Appendix A Revegetation Design Standards

Appendix B Revegetation and Erosion Control Construction Checklist

Appendix C Revegetation and Erosion Control Post-Construction Maintenance Checklist

The Standards are intended to be used by designers, contractors, and inspectors (Standards Users) working on projects on USAFA lands. Depending on the type, size, and scope of the project, the Standards are enforced by one or more Government Representatives: the 10th Contracting Squadron (Contracting Officer), the 10th Civil Engineer Squadron (CES; Construction Inspector, Project Manager, or Permit Inspector), and/or the USAFA Natural Resources Office (Natural Resources Manager). **Standards Users shall consult with these offices for assistance in understanding and implementing these Standards.**

To fulfill Standard requirements, Standards Users shall coordinate and receive approval from the CES assigned during design or implementation phases of the project. During construction, the Standards User shall receive on-site approval from the CES but shall also coordinate with the NR-Manager as necessary. After construction is complete, the Standards User shall coordinate and receive approval from the CES for post-construction maintenance phase requirements. Any deviations from these Standards must be approved by the appropriate Government Representative identified above. Individual Government Representative roles that will fulfill these specifications will be determined on a project specific basis during permitting and design reviews and are generally identified as “Government Representatives” herein.

APPENDIX A contains guidance on **Revegetation and Erosion Control Design Standards** intended to provide ecologically based design approaches for large-scale projects on USAFA Lands. The guidance provided here is recommended for USAFA projects larger than one acre or is being conducted by outside consultants.

The **Revegetation and Erosion Control Standards Checklist** in **APPENDIX B** shall be used by the Standards User and the Government Representative(s) to document compliance with the Standards during and after construction.

The **Post-Construction Monitoring Checklist** in **APPENDIX C** shall be used by the Standards User and the Government Representative(s) to document compliance with the Standards during post-construction erosion control and vegetation establishment. The checklist provided is intended to serve as an example and shall be modified by the Government Representative and Contractor to be project specific.

2.0 Site Preparation

2.1 General

For native revegetation, the beginning of site preparation and subsequent revegetation should be adequately scheduled based on seasonal considerations to the extent practicable. Correct timing of revegetation, especially if the site will be non-irrigated, is very important to establishment success (TABLE 1).

Site preparation will include understanding existing soil conditions and the creation of suitable growing conditions for seeding or planting operations through site manipulations and modifications including, but not limited to, soil sampling, topsoil salvage or import, grading, seedbed preparation, and erosion control.

2.2 Existing Resource Protection

Impacts to existing natural resources such as trees, shrubs, wildlife habitat or nests, wetlands, waterbodies, and high-quality native vegetation communities shall be avoided and minimized to the best extent practicable during design and construction phases. Prior to construction, these natural resources shall be fenced off in a manner that prevents intentional or unintentional impacts during construction. Limits of disturbance shall be clearly marked by the Contractor and approved by the Government Representative(s) prior to commencement of construction.

Tree protection fencing shall be installed around trees to be protected prior to commencement of any demolition or construction activities. Fencing around protected trees shall be placed outside of the Critical Root Zone (CRZ) to prevent damage to the tree. The CRZ is defined as the dripline, further extent of the tree canopy, or is equal to one foot radially from the tree for every one inch (1”) of trunk diameter at breast height, or whichever is greater. Any digging, grubbing, excavating, trenching, changing of grade, or other actions that may impact the roots of the tree are strictly prohibited. Additional tree trunk protection is required if construction occurs within ten feet (10’) of trunk. No materials, debris, equipment, or site amenities shall be stored within the CRZ. Tree protection fencing shall be “orange plastic safety fencing”, minimum 48-inches (48”) tall, top secured to metal T-posts with 12-gauge wire woven through top of fencing for entire length. Heavy duty T-posts shall be placed so that wire and fencing are taut.

Biosecurity

Vehicles, equipment, and personal protective equipment, including tire tread and boot soles, shall be free of any organics or dirt prior to entering a project site. Noxious and non-natives weed species are detrimental to wildlife habitats by outcompeting native vegetation species which wildlife rely on, and which may further exacerbate wildfire risks. Furthermore, any item coming from another wetland project and not properly disinfected and dried may directly introduce disease pathogens afflicting rare and sensitive species.

To prevent the introduction and spread of noxious weeds and other non-native and invasive plants, all construction equipment shall be free of dirt, seed, and plant parts prior to entering the base and/or construction site. The construction site shall have construction track-out controls installed prior to construction equipment entering the site and shall remain until all construction tasks have been completed and the entire site has been stabilized.

2.3 Topsoil Salvage

The upper four to six inches (4-6”) of native soil shall be salvaged for re-distribution over the restoration area. At the beginning of salvage activities, review the soil profile to understand the anticipated topsoil depth of salvage. The soil profile will include:

Topsoil – The top layer of soil which contains the highest concentration of organic matter (humus) and microorganisms and where plants have most of their roots. Topsoil depth varies greatly across regions and in Colorado the topsoil is generally found to be two inches (2”) to twelve inches (12”) deep. The topsoil layer is typically darker in color and less dense than subsoil.

Subsoil – The layer of soil immediately below the topsoil layer. It generally contains much lower percentages of organic matter and microorganisms. A smaller percentage of plant roots are found within this layer. Subsoil depth varies greatly across regions and in Colorado is generally found to be twelve inches (12”) to six feet (6’) deep.

Deep Cut Soil - the lowest layer of soils located below the subsoil layer. These soils are generally low in organic matter and deficient in plant nutrients to support vegetation establishment objectives. Avoid exposing or intermixing these soils with subsoil or topsoil during grading activities.

Well salvaged topsoil can significantly reduce soil amendment costs. All existing surface objects and protruding objects not designated to remain shall be cleared and grubbed prior to topsoil salvage. This includes but is not limited to, trees, brush, stumps, logs, grass, weeds, roots, loose boulders. Care should be taken to limit removal of viable topsoil resources during clearing and grubbing activities. Do not commence site clearing activities until temporary erosion- and sedimentation-control and tree and or plant protection measures are in place and approved by the Government Representative.

Topsoil stockpiles shall not have side slopes greater than 3:1 (horizontal:vertical), to reduce possible erosion, and shall be placed in areas indicated in the drawings or as approved by the Government Representative. Topsoil should be stockpiled as shallow as possible and shall not exceed ten feet (10’) in height to allow oxygen exchange to preserve soil microorganisms. Topsoil stockpiles shall be seeded with the temporary seed mix in **TABLE 15** or with the appropriate permanent native seed mix within 14 days of stockpiling. Erosion control best management practices (BMPs) shall be used around the downgradient perimeter of all stockpiles, including topsoil stockpiles. Similar to all areas impacted during construction, exposed topsoil stockpiles shall be maintained for weed intrusion through appropriate weed management practices.

Following rough grading, topsoil quality shall be retested to inform or potentially revise site specific amendments. Soil sampling of rough graded areas shall also occur to ensure appropriate soil quality extends into the top 12 inches (12”) of the soil column. It is possible that soil recommendations differ between the subsoils and topsoil, but it is the responsibility of the Contractor to sample and amend the subsoils, if necessary, based on soil testing results, prior to the placement of topsoil. Failure to demonstrate sampling and application of recommended amendments prior to topsoil placement may result in the Contractor having to redo the work at the Contractor’s expense.

If topsoil cannot be salvaged and stockpiled appropriately, soils can be amended based on appropriate soil sample results and scarified before the site is revegetated.

Wetland topsoil shall be salvaged and stockpiled separately. Stockpiled wetland topsoil shall only be used in areas where wetlands will be reestablished. Wetland topsoil should be salvaged and replaced in wetland establishment areas as soon as possible to avoid a loss in viability. Wetland topsoil stockpiles shall not exceed three feet (3') in height or width and shall not be kept for more than four weeks. Stockpiling wetland topsoil in the summer or during periods of high temperatures should be avoided when possible.

Topsoil containing dense noxious or invasive non-native weed seed banks shall not be salvaged for reuse. The top two to four inches (2-4") of topsoil in areas dominated by noxious or invasive non-native weeds shall be scraped and buried to limit establishment and spread of these species post-construction. Alternatively, weed-infested topsoil may be hauled off site for disposal.

2.4 Interim Erosion Control

Interim erosion control BMPs, such as silt fence, wattles, check dams, shall be implemented prior to any earth moving activities and comply with all applicable standards as described in *Section 5.0 Erosion Control*. For projects greater than one (1) acre in size, interim erosion control BMPs shall comply with site specific Storm Water Pollution Prevention Plan (SWPPP) or other applicable plans and permits.

2.5 Soil Testing

Soil conditions can play a major role in the success of a project's revegetation efforts. Because of this, soil testing should be completed as early as possible during the design or construction phase to guide plant selection and to determine the appropriate soil amendment needs. Depending on the scale and techniques of earth movement, soil chemistry can also change throughout the construction period and additional soil testing shall be completed during construction to verify the type and quantity of soil amendments.

The Contractor, in coordination with the Government Representative(s) shall collect soil samples following the below protocol for the purpose of understanding soil quality for subsoil and topsoil resources.

Soil Sample Collection Protocol

1. Minimum of three (3) composite samples for projects up to one (1) acre in size and one (1) additional composite sample for each additional acre of project size. More samples may be warranted based on soil complexity and heterogeneity. Samples shall be collected randomly throughout the areas to receive similar soil preparation for native seeding. Provide a site plan of the sampling locations to the Government Representative(s) for approval, prior to sampling.
2. Procedures and Depth of Samples: Collect composite samples to a depth of six inches (6") and combine them in a clean plastic container to create on soil sample. At least four grab samples, spaced at least 20 feet (20') apart, shall be used to create one composite sample.
3. Mixing of Samples: Mix grab samples together thoroughly, removing plant debris and breaking up clods.
4. Labeling: Label each sample with the date, location keyed to a site plan or other location system, visible soil condition, and sampling depth.

Topsoil sampling from stockpiles can be simplified, but the number of samples taken from the stockpile should still equal the number required based on the area of disturbance. Samples should still be collected as composite samples with samples collected from different parts of the stockpile.

Soil Testing Laboratories

Testing Agency: Retain an Agricultural Laboratory Testing Association accredited or university-operated laboratory experienced in soil science, soil testing, and plant nutrition.

Subsoil Testing

Subsoil sampling should follow the same process described for topsoil sampling once rough grading is completed. It should be assumed that results will require 7-10 business days, so plan accordingly to avoid disruption to construction schedules.

Testing Requirements

Soil samples should be tested for the following parameters and shall be submitted as part of the Environmental Deliverables List for evaluation of the topsoil's compliance with the Standards:

1. Soil Texture: Soil-particle, size-distribution analysis by the following methods according to SSSA's "Methods of Soil Analysis – Part 1 – Physical and Mineralogical Methods":

    a. Sieving Method: Report sand-gradation percentages for very coarse, coarse, medium, fine, and very fine sand; and fragment-gradation (gravel) percentages for fine, medium, and coarse fragments; according to USDA sand and fragment sizes.
    b. Hydrometer Method: Report percentages of sand, silt, and clay.

2. Fertility Testing: Soil-fertility analysis shall include the following. Typical ranges for Colorado soils are provided for reference:

    a. Percentage of organic matter. (1-3%)
    b. Cation exchange capacity (CEC), calcium percent of CEC, and magnesium percent of CEC. (10-30)
    c. Soil reaction (acidity/alkalinity pH value). (7.2-8.3)
    d. Buffered acidity or alkalinity.
    e. Lime Estimate.
    f. Soil texture estimate.
    g. Nitrogen ppm. (5-10 ppm)
    h. Phosphorous ppm. (if pH is <= to 7.1 (20-40 ppm); if pH is > 7.1 (10-25 ppm))
    i. Potassium ppm. (150-250 ppm)
    j. Manganese ppm. (4-12 ppm)
    k. Zinc ppm. (1.3-3.0 ppm)
    l. Iron ppm. (7.1-20.0 ppm)
    m. Boron ppm. (0.5-2.0 ppm)
    n. Copper ppm. (1-2 ppm)
    o. Sodium ppm.
    p. Sodium absorption ratio (SAR). (<2, good; 2-4, fair; 4-8, poor; >8, unacceptable)
    q. Soluble-salts mmhos/cm. (<2 mmhos/cm)
    r. Presence and quantities of problem materials including salts and metals cited in the Standard protocol. If such problem materials are present, provide additional recommendations for corrective action.
    s. Other deleterious materials, including their characteristics and content of each.

2.6 Soil Preparation

General

Proper seed bed preparation is one of the most important, and often most overlooked, steps to successful revegetation. Overly compacted soils can hinder revegetation success in upland, riparian, and wetland areas; however, soil that is too loose can lead to erosion or deeper seeding than anticipated and insufficient seed-soil contact.

Process

Scarify subsoil prior to placing topsoil to a depth of 12 inches (12”) in two passes perpendicular to each other, using methods such as disking, ripping, plowing, or rototilling. Topsoil shall be placed on top of the scarified subsoil to a depth of 6 inches (6”). Following topsoil placement, soil amendments shall be added and incorporated into the top 6 inches (6”) creating a total of 18 inches (18”) of scarified soil. There are instances where premixing soil amendments with topsoil is easier and more effective than post-placement incorporation, but this should be determined on a project-by-project basis. After amendment incorporation, fine grading shall be completed to support a planting and seeding surface that promotes germination and plant establishment. The soil surface following proper seed bed preparation shall be rough to facilitate infiltration and microtopography for better seedling germination and establishment.

Topsoil quantities shall be verified by reviewing the area ground disturbance requiring revegetation after initial construction efforts. The disturbance area shall be calculated in acres by tape/wheel measurement or Global Positioning System (GPS) mapping performed by the Contractor and verified by the Government Representative(s). Topsoil quantities may be modified if additional disturbance is incurred passed the original area determined.

Imported topsoil shall be free of rocks, noxious and invasive weeds, large woody debris, or trash. Topsoil shall not be used from areas infested with noxious weeds.

For multi-year or multi-season projects, a new soil laboratory analysis for imported topsoil shall be conducted by the Contractor within one month (30 days) of the delivery date and approved by the Government Representative(s) for each phase of revegetation.

For shorter-term projects, if the required topsoil delivery shall take the Contractor more than one month (30 days) to deliver, the Government Representative shall be responsible for determining whether the topsoil source still conforms to the Standard, or if a new soil analysis at the Contractor’s expense needs to be performed.

Soil Amendments

When considering soil amendment approaches, it is important to consider how to build up soil health and create functioning nutrient cycles in the soil. Soil is a complex ecosystem with microscopic organisms, fungi, and bacteria that influence soil and plant health. If these biotas are not cared for or considered when planning for revegetation actions, an opportunity to reduce long-term maintenance may be missed. Soil organisms need organic matter to complete their lifecycles, so soils shall have adequate amounts (2-4%) of organic matter prior to planting. This will help form a basis for proper nutrient cycling as well as help with infiltration rates, soil moisture capacity, and nutrient retention. Organic matter can be increased by the incorporation of weathered wood chips, humate, and or compost. It is important to understand the seed bank, soil texture, and nutrient quality of site soils before using compost as this product can cause a flush of nutrients that will benefit weedy species more than native species.

Manipulating soil chemistry using appropriate soil amendments can have long lasting positive benefits for revegetated areas. A multitude of soil amendment products can be used, and approaches can be taken to support revegetation establishment objectives. However, misapplied, or excess fertilization can have long lasting negative impacts.

Compost and fertilizers shall not be applied to areas within 50 horizontal feet (50’) from waterbodies to limit impacts to water quality.

Soil amendment quantities shall be verified by reviewing the area of ground disturbance requiring revegetation after initial construction efforts. The disturbance area shall be calculated in acres by tape/wheel measurement or GPS mapping performed by the Contractor and verified by the Government Representative(s). Soil amendment quantities may be modified if additional disturbance is incurred passed the original area determined. Soil amendments not listed in these Standards must be approved by the Government Representative(s) prior to application.

Fertilizer

Fertilizers, which can be inorganic or organic, are used to increase the nutrient content of soils. All fertilizers shall be a standard commercial product of uniform composition and shall conform to applicable local, state, and federal laws. Fertilizers shall be used for soils with adequate organic matter (2-4%) but inadequate macro- or micronutrient levels based on the soil testing analysis.

Compost

Compost is used to increase organic matter and nutrient content of soils. Compost shall be stable, well decomposed, and free of viable noxious or invasive weed seeds. Compost shall not contain more than one percent non-decomposable material. Compost shall be tested by a STA Compost-Certified Laboratory and test results shall represent the compost source to be used onsite. Compost test results shall be provided to the Government Representative(s) and approved prior to procurement. Compost shall have the following characteristics:

- pH Range: 5.5 - 8.0
- Moisture Content: 35 – 55%
- Particle Size: 1-inch (1”) or smaller
- Stability: Stable – Highly Stable
- Maturity: >80% Seedling Vigor
- Soluble Salts: 2.5 mmhos/cm or less
- Organic Matter: 30 – 70%

Rates of compost application should be determined after reviewing site soil analysis. Caution should be applied when considering compost rates as too much can benefit invasive species more than desired native species.

Humate

Humate is used to add cation exchange capacity to the soil, improve water retention, encourage seed germination, increase nutrient availability, and stimulate root growth. Humate soil conditioners shall have the following characteristics:

- pH Range: 3 - 5
- Humic Acids: >50%
- Organic Matter: >85%
- Nitrogen: 1 - 3%
- Phosphorus (P_2O_5): <0.1%
- Potassium (K_{20}): <0.1%
- Mountain peat, aspen humus, gypsum, and sand will not be accepted.

Humate should be applied at manufacturer’s recommended rate.

Imported Topsoil

Imported topsoil is another option to create suitable growth media for planting. However, cost and availability may limit its use for a project. In addition, to meet revegetation establishment objectives, imported topsoil is not always the best or appropriate approach. Imported topsoil can introduce viable noxious or invasive weed seeds or have a different soil texture than site soils, leading to a misalignment of seed mix and soils. Imported topsoil shall be tested by a state-certified laboratory and test results shall represent the imported topsoil source to be used onsite. Imported topsoil test results shall be provided to the Government Representative(s) and approved prior to procurement. Imported topsoil shall have the following characteristics:

- pH Range: 6.0 - 8.0
- Soil Texture:
    - Sand: thirty percent (30%) – fifty percent (50%)
    - Silt: thirty percent (30%) – fifty percent (50%)
    - Clay: five percent (5%) – thirty percent (30%)
- Particle Size: 1-inch (1”) or smaller
- Cation Exchange Capacity: 10-30 MEQ/100G
- Soluble Salts: 1.0 mmhos/cm or less
- Organic Matter: 2 – 4%
- Nitrogen: < 15 ppm
- Phosphorus: if pH is <= to 7.1 (20-40 ppm); if pH is > 7.1 (10-25 ppm)
- Potassium: 150-250 ppm

3.0 Revegetation Installation

3.1 Seed Mix Analysis and Certification

All seed shall be tested and certified for purity and germination in accordance with testing provisions of the Association of Official Seed Analysts (AOSA) within one year of the planting date. All seed mixes shall be free of noxious weeds and seed lot certifications and analyses shall be submitted to the Government Representative(s) prior to seed purchase or installation. Seed lot analyses shall identify date of analysis, seed lot number, purity analysis, and number of native, non-native, or noxious weed seeds found during the analysis. Seed lots may be rejected for testing date, noxious or invasive non-native weeds, or inadequate purity or germination. Seed mixes shall be mixed uniformly by a wholesale seed provider to achieve specified Pure Live Seed (PLS) rates.

3.2 Time of Seeding

Fall should always be the target seeding window so seeds are in the ground before spring to allow germination when conditions are optimal; however, this practice may be difficult when faced with construction schedule changes and delays. On irrigated sites, seeding can take place for most of the year; however, seeding in September and the first half of October before irrigation systems are shut off for the winter presents the risk of a frost event killing recently germinated seeds, further hindering revegetation. For this reason, caution should be used when seeding irrigated sites in September and early October. Fall through spring (October 15 to April 15) is the preferred window for non-irrigated seeding. Areas seeded in fall benefit from winter and spring moisture and many cool season native species require freeze-thaw cycles to break seed dormancy to germinate. Sites shall not be seeded if they are frozen, snow covered, or muddy.

When seeding must occur outside of the preferred seeding window, the site shall be seeded with the standard Temporary Seed Mix and reseeded during the preferred seeding window. For areas that require erosion control blanket but need to be seeded outside the preferred seeding window, these areas shall be seeded with the appropriate standard seed mix or an approved modified standard seed mix at one and a half times the suggested rate. TABLE 1 outlines preferred seeding windows based on site conditions and time of year. Seeding outside of preferred windows must be approved by the Government Representative(s).

Table 1: Seeding Windows

Conditions	Mixes	Seeding Window											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigated Areas	All												
Non-Irrigated Areas	All												
Outside of Non-Irrigated Seeding Window	Temporary Mix Only												

Note: Green fill indicates the preferred seeding window for each condition, yellow indicates riskier seeding window depending on irrigated versus non-irrigated, and red fill indicates times of the year when no permanent seeding should occur due to increased risk of revegetation failure.

3.3 Seeding Installation

Drill seeding is the preferred seeding method and shall be used to seed areas greater than 0.10 acre with slopes 3:1 or less that lack steep or rocky terrain. Seeds shall be installed at a depth of one quarter to one half inch (¼ - ½") with drill row spacing of seven to ten inches (7-10") apart and shall be drilled in two directions, perpendicular to one another with the final pass following the land contour. If drill seeding in multiple directions is not possible, the Contractor shall alert the

Government Representative(s) and develop a drill seeding plan that will ensure even distribution of seed. The drill shall have double-disk furrow openers with depth bands and packer wheels.

When seeding areas smaller than 0.10 acre, or areas with greater than 3:1 slopes or having rocky terrain, mechanical broadcasting using mechanized rotary, cyclone seeders, or hand broadcasting shall be used and the standard PLS seeding rate shall be doubled.

Disturbed areas shall be raked or harrowed prior to seeding and then raked or harrowed again to encourage seed to soil contact. Raking or harrowing shall be performed in a manner to achieve a seeding depth between one-quarter and one-half inch (¼ - ½").

Shrub overseed mixes shall be installed in areas designated on design plans and installed at the same time as grass and forb seeding, and prior to final raking or harrowing. Mechanical broadcasting shall be used to install shrub seed and the area shall be raked or harrowed again following seed installation.

All seed mixes shall be installed with a minimum overlap of two feet (2') with the adjacent seeding zone.

3.4 Container, Ball and Burlap, Plugs, and Sod Mat Stock

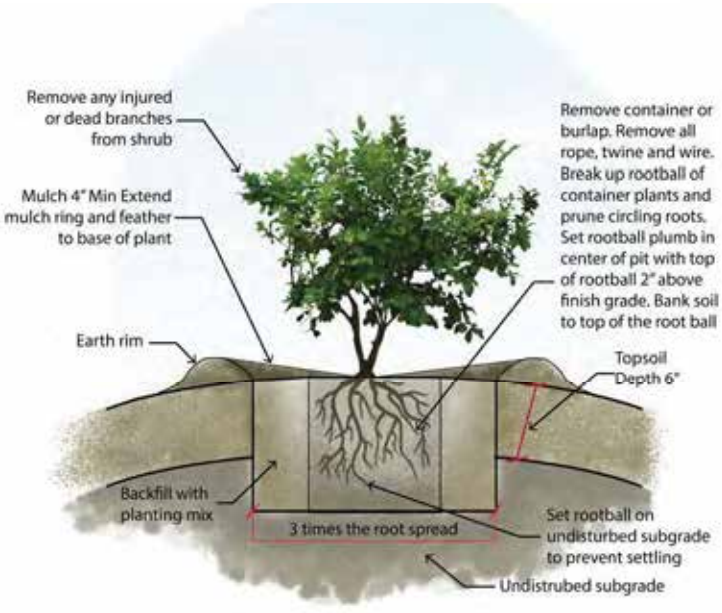
Container stock including ball and burlap, plugs, and sod mats should be sourced from a local nursery. Several nurseries may need to be sourced from depending on seasonal availability of different plant species. The Contractor should coordinate closely with the Government Representative(s) to determine a suitable substitute if the proposed species or container size is unavailable.

Plant stock should be inspected by the Revegetation Contractor at the nursery prior to transferring onto the site. The stock should be free of diseases and the roots should not be growing out through the bottom or at the periphery of the container. Plants that are not as well-proportioned but still portray high vigor are suitable for native revegetation areas.

When plant stock is brought onto the site, the plant stock shall be watered and kept properly sheltered from the sun, wind, or storm events until the planting is properly installed. Container stock shall not be stockpiled for longer than 2 weeks.

Plants shall be placed in a hole dug three times the size of the root ball (see FIGURE 1). Typically, add a minimum of three inches (3") of mulch to support water retainage, including for native revegetation areas. The mulch shall be placed to be kept away from the root flare and kept in place with a mulch ring landform. Remove any injured or dead branches.

Figure 1: Container Stock Planting



3.5 Salvaged Plantings and Reuse of On-Site Materials

General

Salvaged plantings should be included in the project during the revegetation design phase. However, early construction activities such as initial laydown, staking, site assessment, laydown planning and clearing and grubbing can provide more data on the onsite materials available.

Careful consideration should be given to ensure the structural integrity of materials salvaged for reuse, but reusing site materials saves project costs and help achieve sustainability goals.

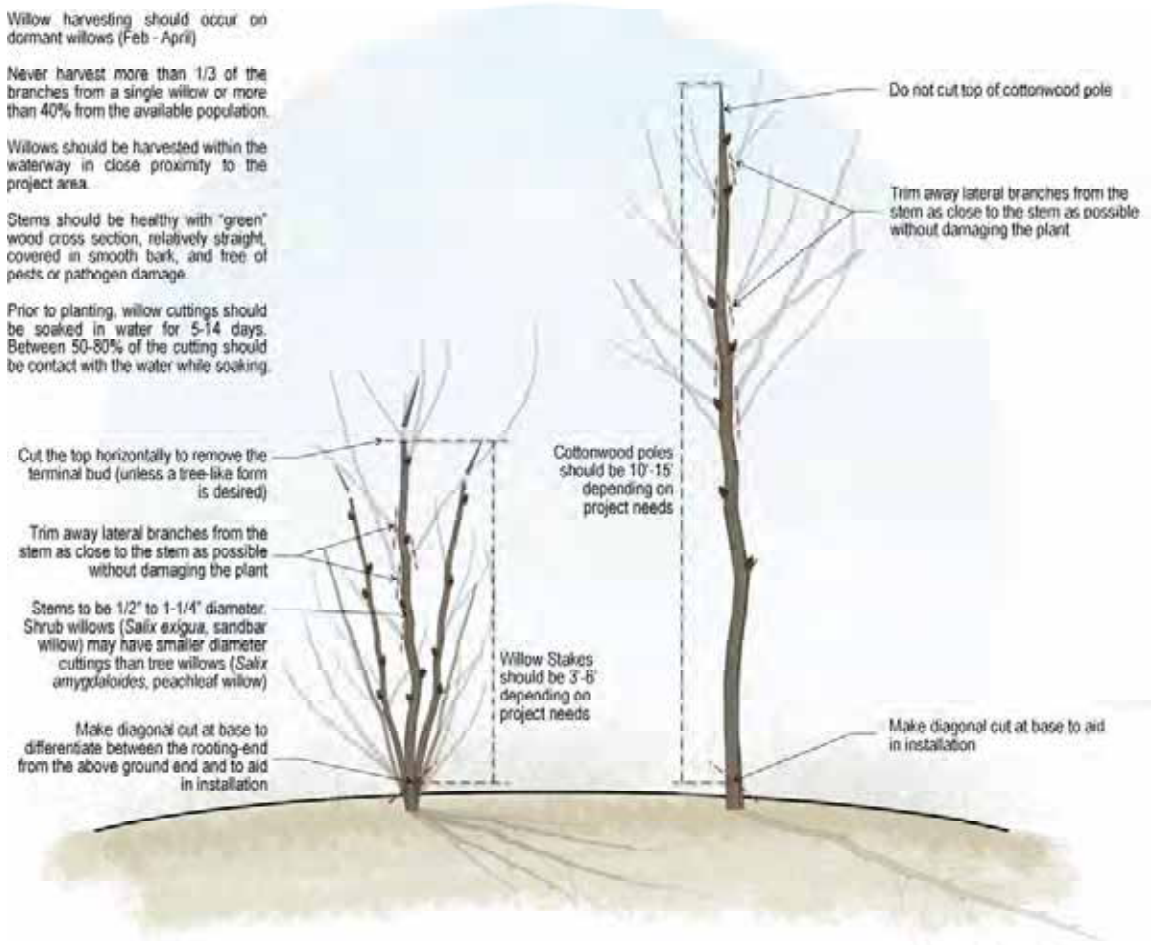
The following sections highlight commonly available onsite plant materials that can be used as part of the revegetation process and how they can be salvaged and reused.

Live Willow Stake Salvage and Installation

Prior to planting, the NR-Manager shall identify and approve any on-site locations for the harvesting of plant materials. All willow stakes shall be disease and insect free. Off-site plant materials shall only be used with prior approval from the NR-Manager.

Willow stakes shall be harvested and planted in **late-winter to early-spring** during dormancy and before dormancy is broken. “Bud break” can be identified by swelling lateral and terminal buds. Planting shall only be conducted when the weather and soil conditions are appropriate. Stakes shall not be planted when the ground is frozen or otherwise unsuitable. Live stakes shall typically be coyote willow (*Salix exigua*) cuttings that are one-half inch (1/2”) to one inch (1”) in diameter. Other native willow species can be utilized if found prevalent throughout the project site and as approved by the NR-Manager. The length shall be determined by the project specific needs for the live stake to be planted with access to ground water but are typically between three feet (3’) to six feet (6’) in length. Stakes shall be harvested with sharp pruning shears with the base cut at a forty-five-degree (45°) angle and all side branches removed.

Figure 2: Live Willow Salvage



Harvested willow stakes shall be soaked prior to installation. Approximately 50-80 percent of the length of the cuttings shall be submerged in water for a minimum of 36 hours but no longer than 14 days. If willow harvesting happens during clearing and grubbing activities, the willow stakes shall be kept in cold storage until the site is ready for planting. Conditions for cold storage should be dark with near 100% relative humidity and temperatures near 24^0 F. The goal of cold storage is to prevent water loss and fungal infection in the cuttings.

Stakes shall be kept moist, cool, shaded, and protected from wind until installed. During transport or storage, the stakes shall be covered to protect them from heat, light and wind damage.

A planting hole shall be excavated to the groundwater using a hammer drill and a one-inch (1") drill bit, rebar probe, dibble bar, or other approved method. Damage to any erosion blanket shall be avoided to the maximum extent possible and any erosion control blanket damage shall be repaired by the Contractor. Stakes shall be gently placed in the hole, ensuring that the butt end reaches below the groundwater level. Each hole shall be backfilled, hand-tamped, and/or watered to eliminate air pockets around the stake. Stakes shall be cut-off at 18-24" from the ground surface with at least two lateral buds remaining above- ground (FIGURE 2).

Live Cottonwood Pole Salvage and Installation

Prior to planting, the NR-Manger shall identify and approve any on-site and/or off-site locations for the harvesting of plant materials. All cottonwood poles shall be disease and insect free. Off-site plant materials shall only be used with prior approval from the NR-Manager.

Cottonwood poles shall be harvested and planted in **late-winter to early-spring** during dormancy and before dormancy is broken. “Bud break” can be identified by swelling lateral and terminal buds. Planting shall only be conducted when the weather and soil conditions are appropriate. Stakes shall not be planted when the ground is frozen or otherwise unsuitable.

Cottonwood poles shall be plains cottonwood (*Populus deltoides*) or narrow-leaf cottonwood (*Populus angustifolia*) cuttings that are approximately one inch (1”) in diameter. A different native cottonwood species can be utilized if found prevalent throughout the project site and as approved by the NR-Manager. The length shall be determined by the project specific needs for the live stake to be planted with access to ground water but are at least ten feet (10’) in length. Poles shall be harvested with sharp pruning shears with the base cut at a forty-five-degree (45°) angle and all side branches removed.

Harvested poles shall be soaked prior to installation. The bottom end of the cuttings shall be submerged in water for a minimum of 24 hours but no longer than seven days. Only the portion of the pole where root development is encouraged shall be soaked.

Poles shall be kept moist, cool, shaded, and protected from wind until installed. During transport or storage, the poles shall be covered to protect them from heat, light and wind damage.

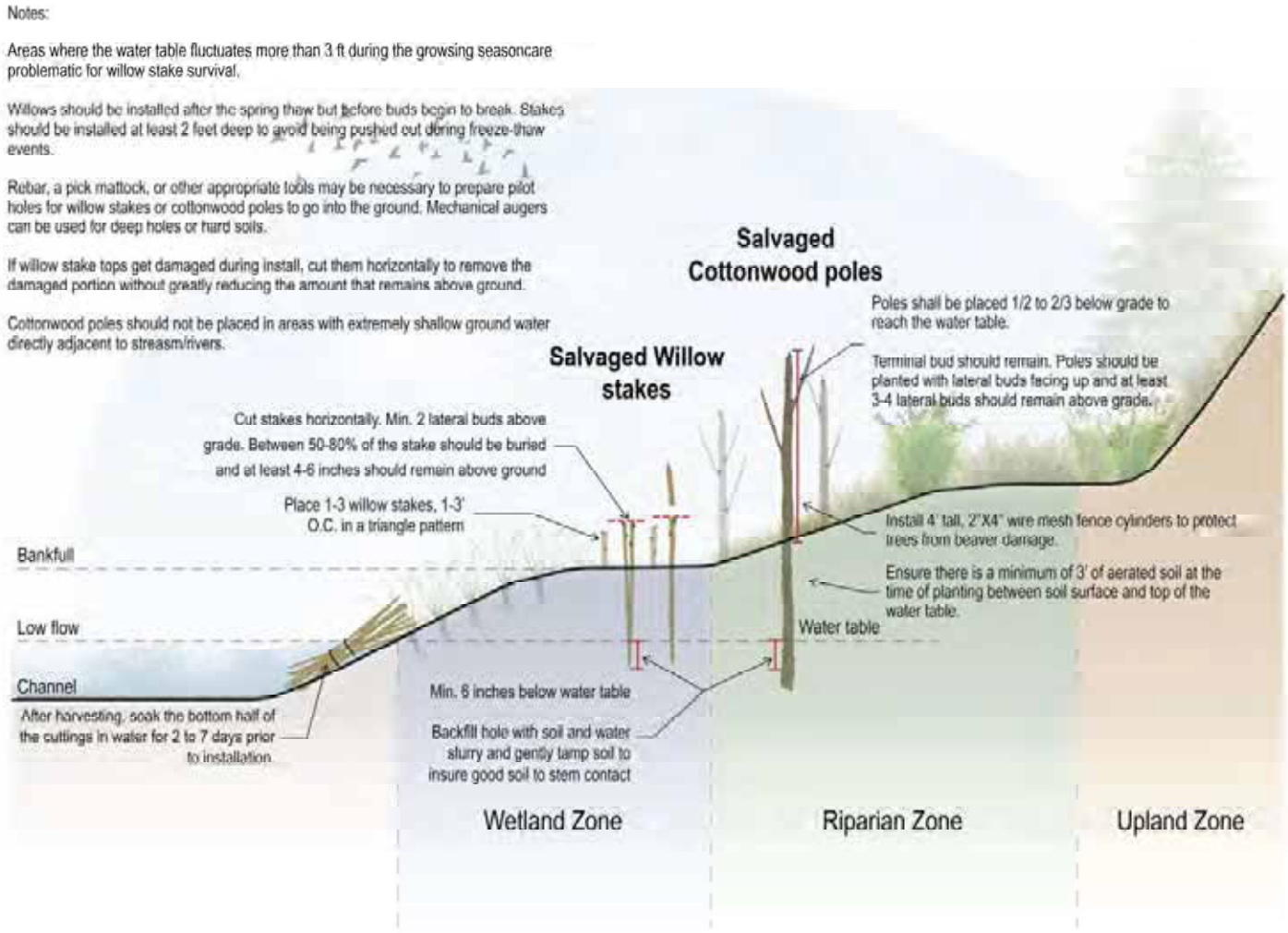
A planting hole shall be excavated to the groundwater using an auger or other approved method. Damage to any erosion blanket shall be avoided to the maximum extent possible and any erosion control blanket damage shall be repaired by the Contractor. Poles shall be gently placed in the hole, ensuring that the butt end reaches below the groundwater level. Each hole shall be backfilled, hand-tamped, and/or watered to eliminate air pockets around the pole.

Wire cages constructed of two inch by four inch (2”x4”) wire mesh with a 30-inch (30”) diameter shall be constructed around each cottonwood pole and anchored by t-posts or rebar to the ground to prevent beaver damage.

3.6 Weed Control During Construction

Weed control is required during construction. While construction activities are still on-going, maintaining weeds over the entire site, including on topsoil stockpiles, will reduce weed density once topsoil is replaced and revegetation commences. (Reference Integrated Weed Management Plan). Construction should anticipate the need to control weeds prior to seed production through mechanical or chemical means. Weeds shall be controlled prior to seed production. Construction teams shall have a licensed herbicide applicator available for weed control efforts. No broadscale chemical or physical weed management, such as spraying or mowing, is allowed unless approved by the Government Representative.

Figure 3: Willow and Cottonwood Pole Install



4.0 Watering and Irrigation

Temporary irrigation or watering during the establishment period shall be required for any projects that propose container stock beyond the use of willow cuttings and cottonwood poles. A Supplemental Irrigation Plan will be required for sites that do not provide an Irrigation Plan in the Construction Document set. Supplemental irrigation is not required for sites that only contain seed and salvaged material plantings if the seeding is accomplished during the required fall and spring planting periods. The Government Representative(s) may require a Supplemental Irrigation Plan if seeding does not occur in the required planting periods.

The Contractor is to verify actual available water pressure before beginning irrigation system installation. Contractor shall notify the Government Representative(s) if available water pressure exceeds 5 PSI higher or lower than the design water pressure. Irrigation systems connected to potable water supply shall have a backflow preventer installed per local requirements.

All visible temporary irrigation components must be removed by the Revegetation Warranty Contractor within 30 days after the system is no longer necessary.

Irrigation watering should not occur during the day between the hours of 10:00 am and 6:00 pm, when water loss from sun and wind will be greatest.

5.0 Erosion Control

5.1 General

An erosion and sediment control plan shall be developed and shall conform with local and state erosion control standards and requirements.

All disturbed areas shall be stabilized in conformance with any USAFA Storm Water Management Plan (SWMP) requirements or BMPs which supplement this manual. This includes temporary and final erosion control.

The type of erosion control selected shall be site specific and consider factors such as proximity to a water body, storm flow paths, slopes, soil nutrient profile and texture, tolerance of shear stress, and frequency and intensity of inundation. Erosion control measures for all disturbed areas shall be installed prior to grading or disturbances have begun.

For designed projects, the erosion control materials will be identified and approved during the design development stage. For all other projects and for any deviations from the approved design plans, the Contractor shall use this document to determine acceptable erosion control materials or equivalent products to implement effective control measures. The CES may require submittal of the anticipated erosion control materials for approval.

Contractors shall minimize creating new roads and trails adjacent to the project area. Any new trails, roads, parking areas, or staging areas shall be rehabilitated as part of the project.

Formal inspection by the Contractor of all erosion control measures shall occur weekly with no post-storm inspections or every two (2) weeks and immediately following storm events to ensure no damage has occurred and a plan to replace damaged materials can be developed. Frequency is at the discretion of the Contractor with approval by the Government Representative.

5.2 Erosion Control Materials

The following section covers commonly used erosion control materials and approaches. There are additional BMP approaches such as, but not limited to vehicle tracking controls, earthen berms, grade differential/cut-back curb, and surface roughening that have value in controlling erosion but may not be applicable in all circumstances. Use of these alternative BMP approaches needs to be discussed and approved by the Government Representative, Construction Inspector, and Stormwater Inspector prior to implementation. All erosion control materials shall be installed in accordance with the manufacturer's instructions and recommendations, unless otherwise specified by the Government Representative.

Erosion control blankets, straw wattles, and other manufactured materials shall be 100% biodegradable, net-free, and consist of wood fiber (excelsior) or coconut fiber materials with at least a two-year functional longevity (Western Excelsior Excel S-1 All Natural, Excel R-2 All Natural, Excel S-2 All Natural, Excel CC-4 All Natural, or equivalent). Photodegradable mesh and other synthetic materials are not allowed as they are known to have deleterious effects on water quality

and wildlife. Silt fence is the exception, as that product is to be removed from the site following site stabilization.

All erosion control material shall be certified weed-free to limit the introduction of undesirable species to a site and ultimately reduce competition for desirable native plants.

Manufactured biodegradable stakes or wooden stakes shall be used to anchor all erosion materials. See **FIGURE 4** for sizing information. Do not use metal stakes to secure blankets.

Erosion control blankets, straw coir logs, and/or soil berms shall be used whenever reclaiming and stabilizing slopes greater than 3:1, or along drainageways. The type of erosion control blanket (netless, single-net, double-net, etc.) shall depend on the slope. Netless rolled erosion control blankets shall be used on slopes of 4:1 or less, single-net erosion control blankets and open weave textiles shall be used on 3:1 slopes, and double-net erosion control blankets shall be used on 2:1 slopes.

Hydromulch may be used for temporary stabilization and erosion control on slopes of 4:1 or less but shall not be used in areas that may experience sheet flow or concentrated flow.

For erosion control and revegetation on slopes greater than 3:1, commercially available soil binder / tackifiers and fiber matrixes applied via hydraulic application may offer the greatest feasibility. Flexible Growth Medium (FGM) and Bonded Fiber Matrix (BFM) provide more durability and prolonged stabilization compared to hydromulch or cellulose and can be applied with similar equipment. Additionally, in areas away from concentrated flows FGM and BFM allow easier adaptive management actions to be employed. Products shall be applied at the manufacturer's specified rate and approach for the corresponding slope gradient and condition. All spray on products must be applied from at least two angles to ensure proper and complete coverage. Spray on products are not allowed in areas where concentrated flows are expected. This is typically below the elevation of the 10-year storm event.

The following table provides an overview of site conditions and erosion control approaches appropriate for meeting site conditions.

Table 2: Suitable Erosion Control Materials based on Site Conditions

Erosion Control	
Hydromulch	Slopes of 4:1 or less and outside of areas subject to concentrated flows.
Erosion Control Blanket	Slopes of 4:1 or greater, within low-flow channels, and/or areas immediately adjacent to the channel.
Soil Binder/Tackifiers and Fiber Matrixes	Slopes of 3:1 or greater.

Erosion Control Blanket

Erosion control blankets (ECB), including coir, jute, and coconut-type blankets, are best reserved for use within low-flow channels and areas immediately adjacent to the channel such as within the 2- to 5-year flood zone, and slopes of 4:1 or greater. The type of blanket to be used shall be site specific and based on slope conditions, soil types, allowable maximum shear stress, and the maximum velocity during storm events. Refer to the blanket manufacturer's standards and specifications for velocity and shear stress thresholds. Coconut blanket is typically required, but straw-only or coconut-straw mixture blankets can be allowed for certain projects depending on time

frame needs for blanket to remain and as determined by the NR-Manager.

Erosion control blankets shall be installed over uniform surfaces without any large rocks, vegetation, dirt clods, or rills. Blanket edges shall overlap a minimum of eight inches (8”) with the edges folded over. All blanket areas shall have a 12-inch (12”) deep perimeter anchor trench for securing the ends of the ECB unless otherwise specified by the product manufacturer. The staking/securing pattern shall be 18 inches (18”) on-center (O.C.) along all seams and 18 inches (18”) O.C. across the center of the fabric. Steep slopes shall have the staking pattern decreased to 12 inches (12”) O.C. Anchor slots at structures or blanket termination shall bury a fold of fabric into a six-inch (6”) trench, tamp firmly, and be secured with stakes 12 inches (12”) O.C. parallel to the trench. There shall be no gaps, tenting, or folds in the fabric when complete. If there are any imperfections as described, the fabric shall be repaired immediately.

Figure 4: Erosion Control Blanket on Slope Installation

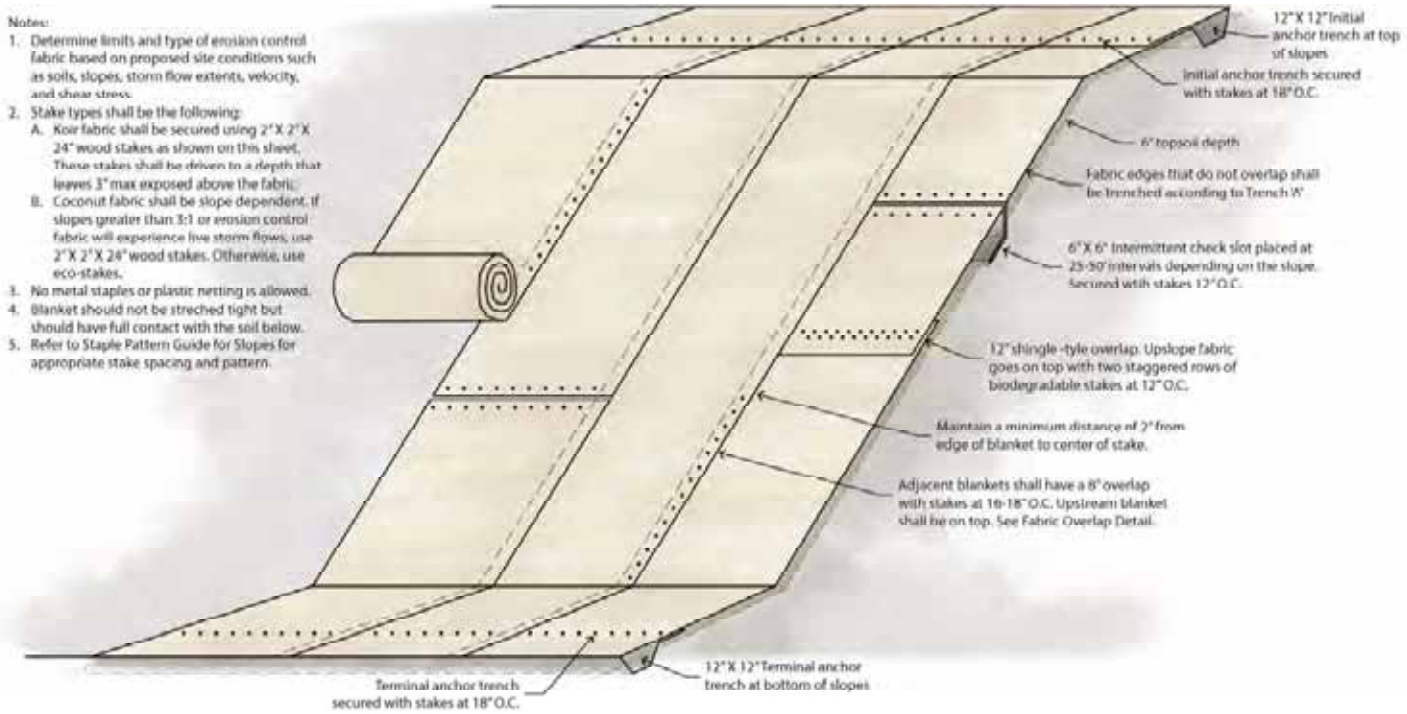


Figure 5: Erosion Control Blanket at Channel Installation

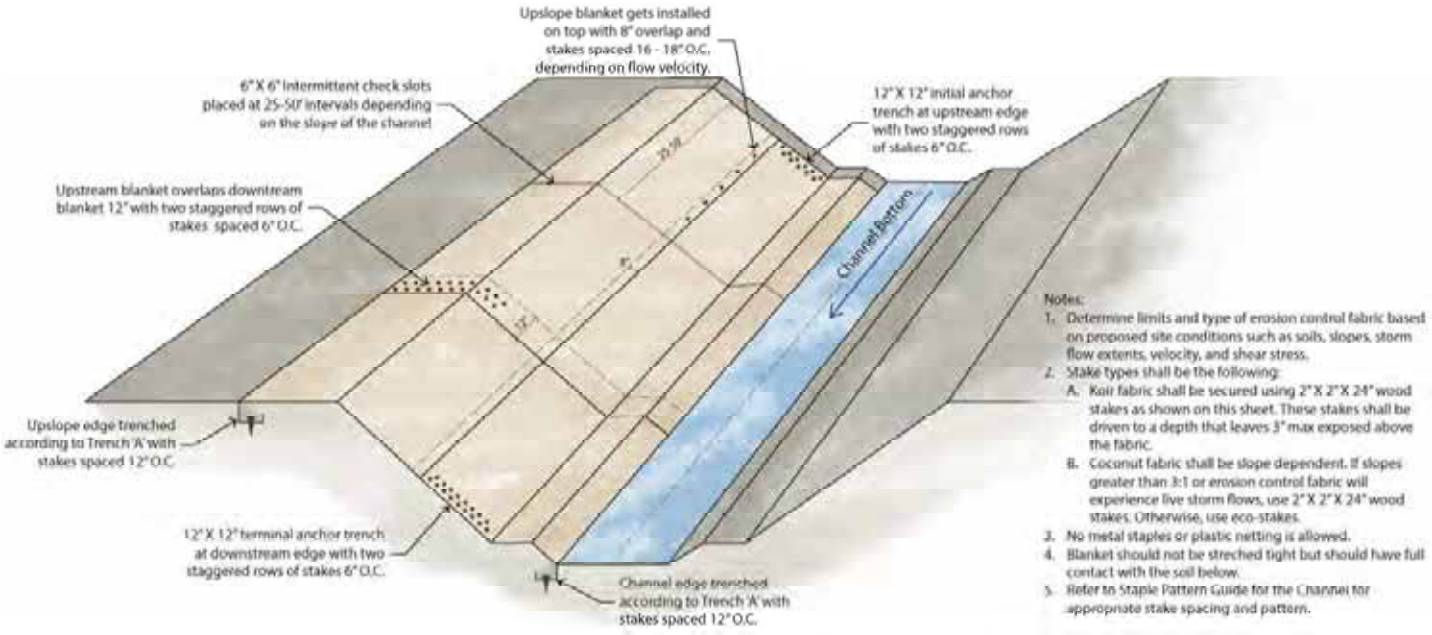


Figure 6: Erosion Control Blanket at Fabric Overlap

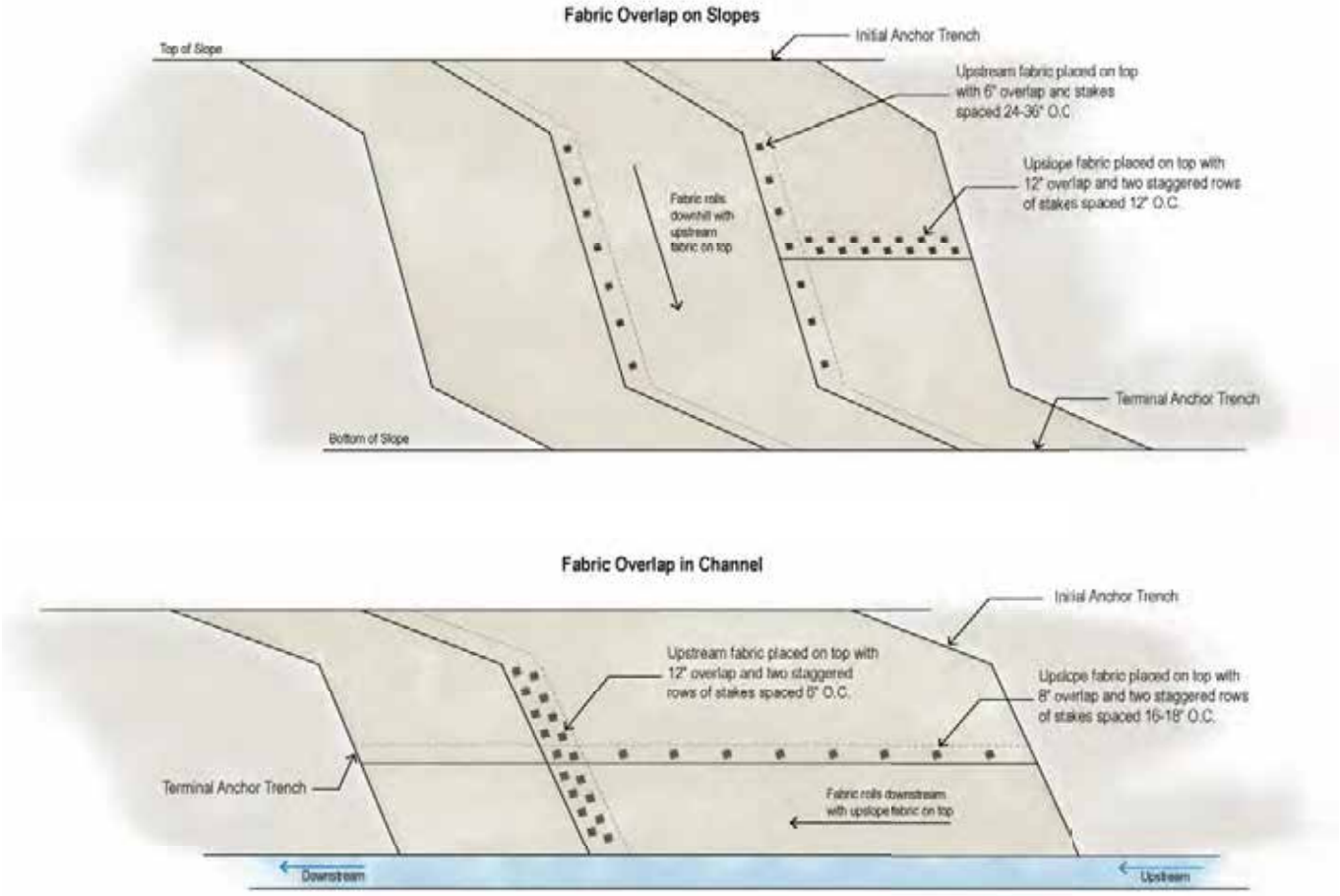


Figure 7: Erosion Control Blanket Staking Patterns

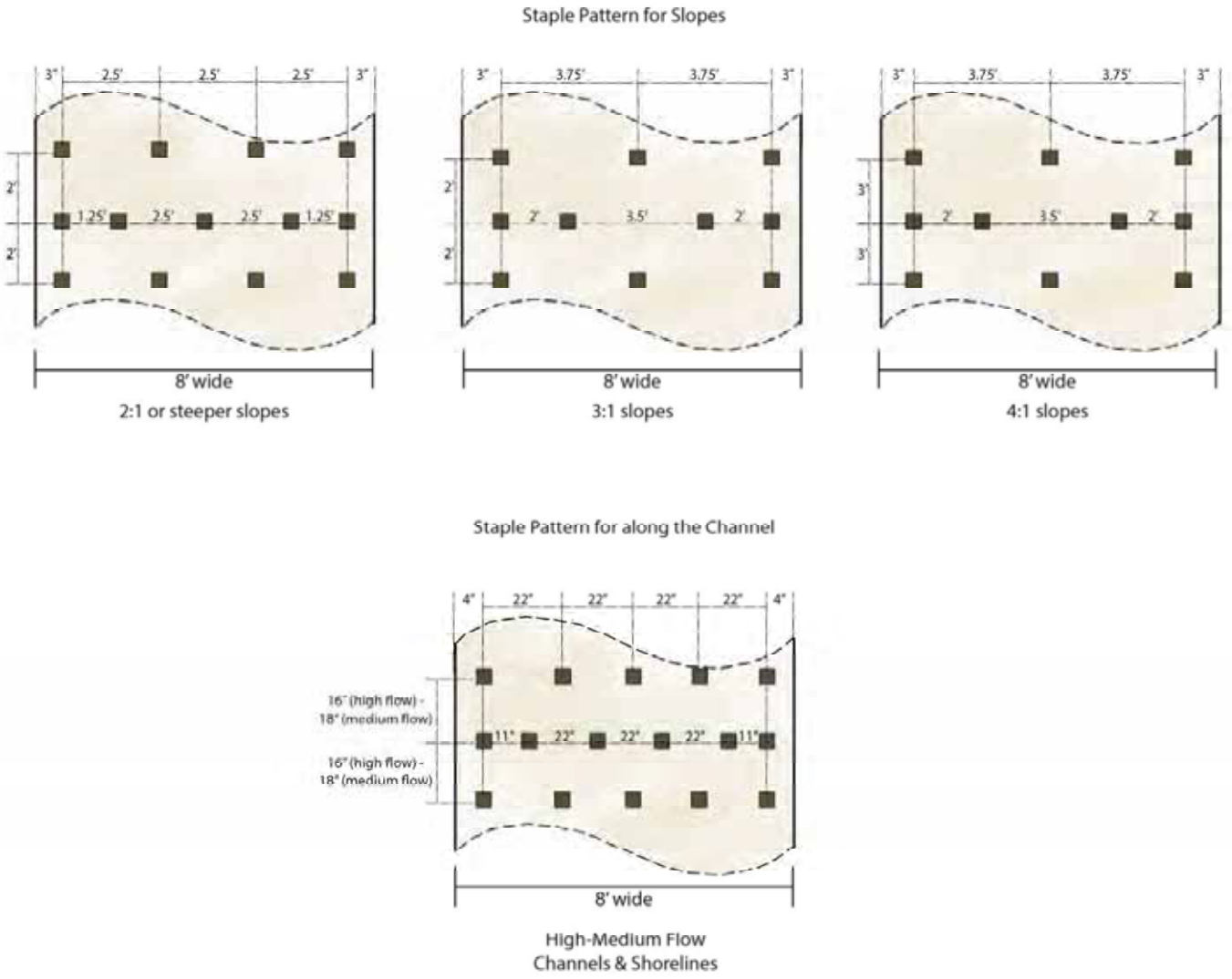
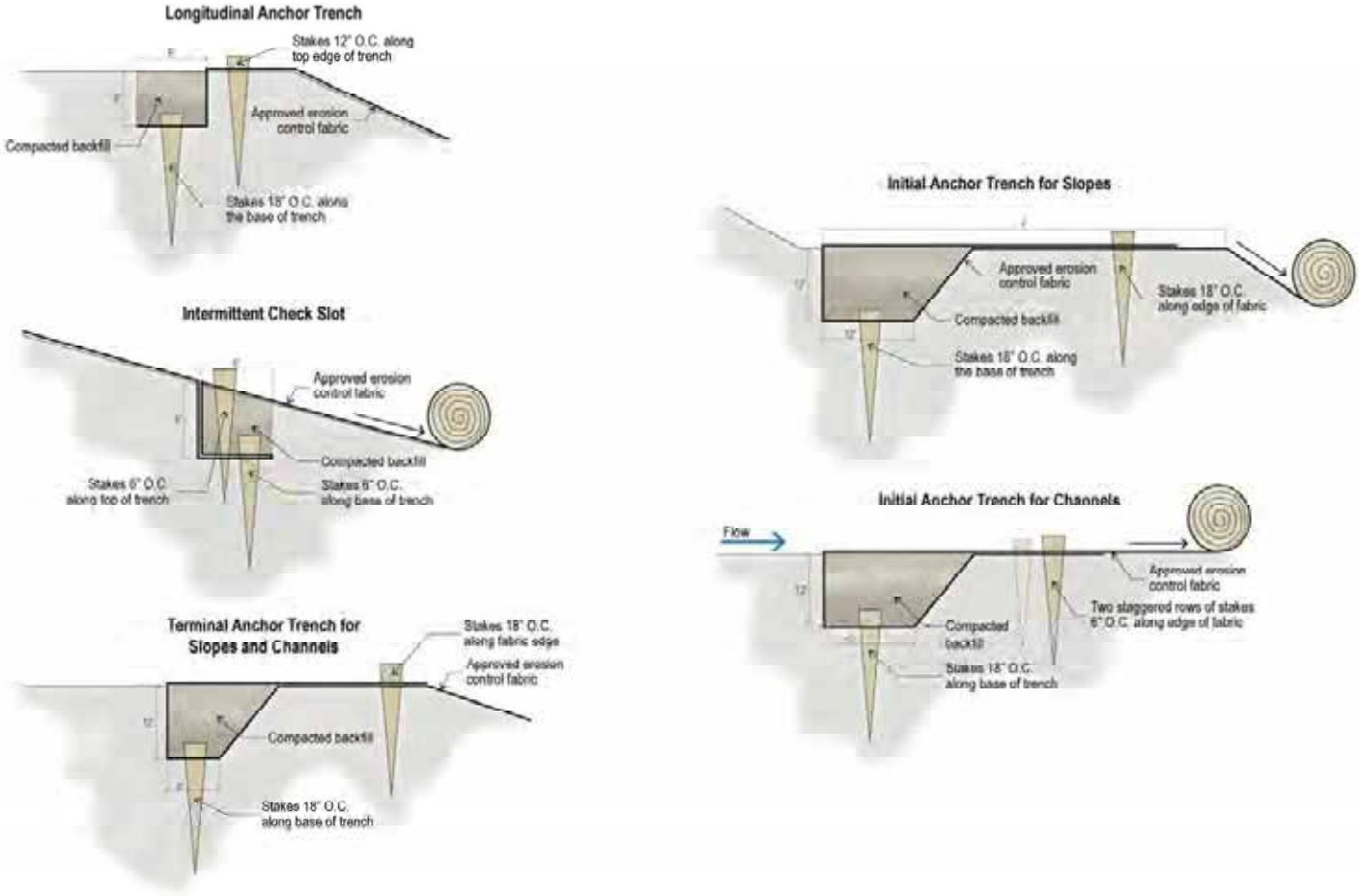


Figure 8: Erosion Control Blanket Anchor Trenches and Intermittent Check Slots



Blankets should not be used on sites with over 30% rock coverage (of rocks greater than 4 inches [4”] in diameter) because the blanket will not make solid contact with the soil below. On steep slopes (greater than 3:1), additional trenching shall be made every 15 feet (15’). Staking for check slots shall be applied every 12 inches (12”) along the trench to hold the fabric in place. In areas with loose soil or rocky subgrades, alternative anchoring methods can be used with prior approval from the engineer.

Any ECB that is damaged or pulled out shall be repaired or reinstalled immediately. If the soil under the placed fabric erodes and creates rills or tenting, voids shall be refilled with soil, reseeded and the fabric shall be replaced. Any broken or damaged staking must be repaired as soon as possible after being identified.

Erosion Control Mat

Erosion control mats are typically more expensive compared to standard erosion control blankets but should be used in situations where long-term slope erosion protection is needed in areas with high shear forces and flow rates. Mats are used most effectively in areas where water flows are expected to consistently exceed the soil’s maximum permissible velocities, such as channel edges. As with blankets, the type of erosion control mat used shall be selected based on site-specific characteristics related to expected design velocity, shear stress, and slope. Refer to the mat

manufacturer's standards and specifications for velocity and shear stress thresholds.

Any erosion control mat that is damaged or pulled out shall be repaired or reinstalled immediately. Avoid vehicle traffic over the mat as much as possible, especially in wet conditions or in areas of loose soil. If the soil under the placed mat erodes and creates rills or tenting, voids shall be refilled with soil, reseeded and the mat shall be replaced. Any broken or damaged staking must be repaired as soon as it has been identified.

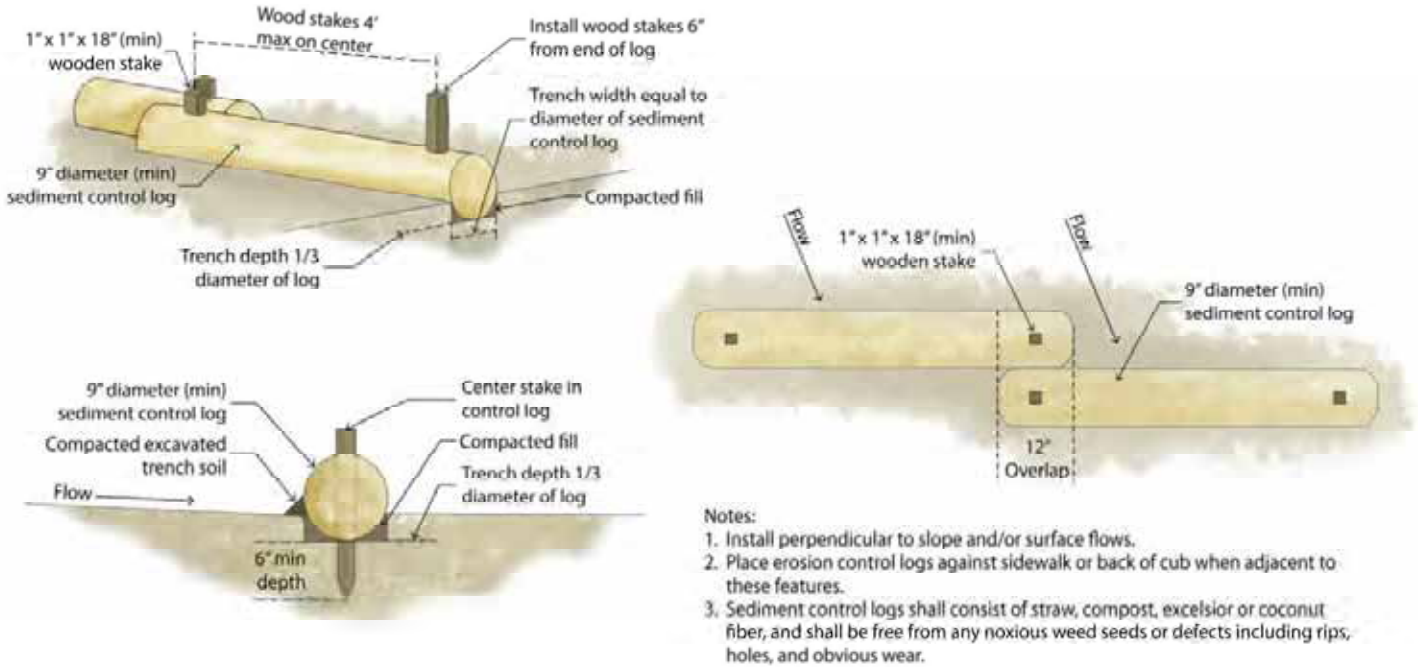
Straw Wattles

Straw wattles, or erosion control logs, are cylindrical bundles of excelsior, straw, coconut fibers, woodchips, or compost that are anchored to the ground with wooden stakes to capture sediment and allow surface runoff to flow across stabilized areas. They are most applicable to reduce flow velocities and capture sediments moving across the site from disturbed soils. They can be utilized to prevent concentrated flows on long slopes and capture sediment and debris before water enters adjacent stormwater inlets. Straw wattles are not intended for use in ditches with continuous flows or below any high-water mark in or near bodies of water. Without proper anchoring, straw wattles may become dislodged and clog stormwater inlets or move away from the site.

The type of straw wattle or erosion control log will depend on the anticipated application on the site of the flow line intended to intercept the wattle. Wattles shall be placed perpendicular to the anticipated concentrated flow and parallel to the contour of the slope. Wattles shall be trenched into the ground at least 2 to 3 inches (2-3") to prevent runoff and sediment from flowing underneath. Wooden stakes shall be used to anchor the wattle and shall be anchored at least 12 inches (12") into the ground. When placing wattles or erosion control logs at the toe of a slope, place them five to ten feet (5-10') from the toe of slope to provide storage capacity and maintenance access. When placed at the base of a slope, flare the ends of the log upslope to capture sediment that may flow around the long in higher flow events.

Wattles and erosion control logs shall be inspected regularly to ensure sediment is not moving around or underneath. If the log splits or rips, it shall be replaced immediately. If sediment accumulates behind the log the sediment shall be removed if it reaches up to half the height of the log. If the log sags or slumps, additional wooden stakes can be used. If the wooden stakes are damaged or missing, they shall be replaced immediately.

Figure 9: Straw Wattles Installation



Silt Fencing

Silt fencing is a temporary sediment control barrier made from a woven geotextile fabric that is used to contain sediment from runoff before surface water leaves the site. It is most applicable for use along the perimeter of construction sites including staging areas and access roads, around stockpiles, and at the toe of exposed and erodible slopes. Silt fencing is not appropriate for use in areas with concentrated water flows, mid-slop protection on slopes steeper than 4H:1V, or for use as means to divert water flows.

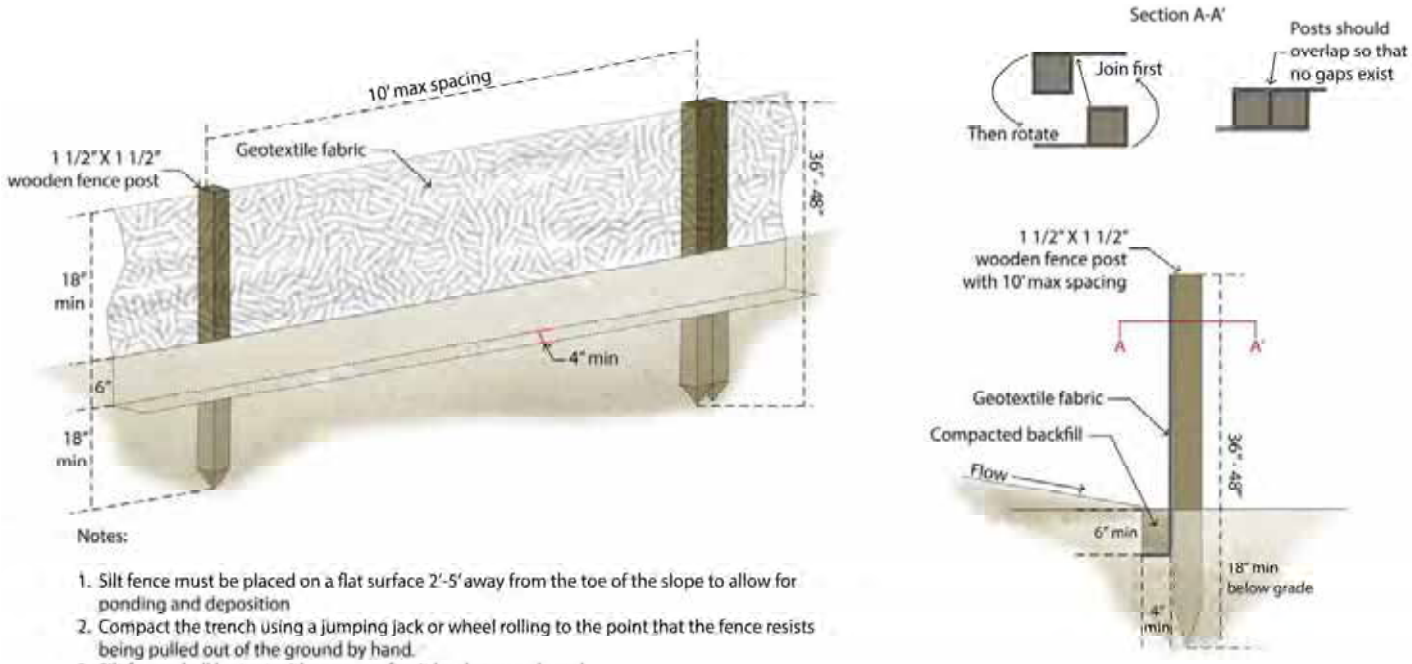
Silt fencing shall consist of a woven geotextile fabric, secure to wooden posts spaced a maximum distance of eight feet (8') apart and buried 12 inches (12") into a six inch by four-inch (6"x4") trench below the fence to capture sediment. When placing silt fence below an exposed slope, it should be installed at least five feet (5') from the toe of slope to allow maintenance access between the slope and silt fence. The maximum linear distance of installed silt fencing shall not exceed 500 linear feet (500') to prevent a single concentrated area of water to form that could more easily overtop the fencing in a large rain event. A general rule of thumb is not to exceed 100 ft of fence per 10,000 sq ft of disturbed area and the disturbed slope length shall not exceed 150 feet (150') per 100 linear feet (100') of fence installed.

The fence shall be inspected regularly to identify any areas that may need repair from ripping, slumping, or undercuts from high flows. Fencing shall be inspected prior to storm events to ensure the fence is ready to capture any moving sediment and directly after any storm event to ensure no repairs are needed. Damaged fencing shall be replaced or repaired immediately upon discovery. Silt fencing has a general lifespan of 5 to 8 months, therefore, projects with timelines exceeding this may need to replace all or a portion of the fence during construction activities.

Upon completion of construction activities, the silt fencing shall be removed from the site and the area returned to pre-construction condition. This may include filling and compacting post holes,

removing sediment accumulation, and ensuring the disturbed area blends into the surrounding landscape.

Figure 10: Silt Fence Installation



Hydraulically Applied Mulch

Hydraulically Applied Mulch (hydromulch) can be used for interim and permanent stabilization on areas with lower slopes compared to blanket and mat. Hydraulic seeding or mixing seed with hydromulch is not an approved construction method. An approved hydromulch product may be used on slopes of 4:1 or less and outside of areas subject to concentrated water flows with approval by the Government Representative(s). Hydromulch should not be applied on saturated soils, areas with seeps, or seasonal springs. Hydromulch should be applied per the manufacturer's recommendations, including the use of tackifier. Water should be applied in the field to meet the manufacturer's recommendations. When feasible, hydromulch shall be applied at multiple angles to ensure full coverage of the exposed soil surface. Re-apply hydromulch as needed to repair failed areas throughout the construction period due to construction traffic or large storm events.

Mulching

Mulching can be used for interim and permanent stabilization on areas with lower slopes compared to ECB and coir mat. Mulching assists seed germination by conserving moisture and protecting seeds from erosion. Straw mulch shall be applied per the manufacturer's recommendations, including the use of tackifier. Tackifier shall be applied either simultaneously or immediately after mulching and crimping to provide uniform coverage. Only certified weed-free mulch may be used.

Straw mulch must be one hundred percent (100%) certified weed free. The minimum stem length for straw mulch shall be six inches (6") with at least half of the material being ten inches (10") or longer, the use of fine materials is not allowed. Straw mulch shall be applied evenly at 2,000

pounds per acre and crimped to a minimum depth of two inches (2”) following the contours of the slope or perpendicular to the prevailing wind directions on flat areas. On slopes up to 4:1, a mulching rate of 2,500 pounds/acre shall be used. Straw mulching shall not be used within streams, drainage channels, walls, sidewalks, pathways, or over existing vegetation.

Fencing and Barriers

Fencing and barriers aid in reducing runoff, erosion vulnerability, and protect existing landscapes and trees in place during construction activities. Temporary fencing or other barriers shall be installed around any identified areas for protection, defined by the Government Representative(s) or regulatory agency, to exclude pedestrian and vehicle access. All fencing and barriers shall be maintained in good condition and any barriers that are damaged or broken shall be repaired or replaced immediately. Areas of protection must be clearly marked with high visibility tape prior to the start of construction activities. Markings must be distinctly different from those used to mark trees or vegetation for removal. Government Representative shall coordinate with the Contractor to ensure markings are clearly understood prior to any demolition or construction activities.

Once final stabilization of disturbed areas directly adjacent to protection areas is complete, protection fencing, barriers, and markings can be removed and reused or disposed.

5.3 Final Inspection and Seeding Success Criteria

A punch list site visit shall be conducted with the Government Representative(s) following completion of revegetation work to document items that need to be addressed by the Revegetation Contractor according to design plans and construction specifications. Substantial completion shall be awarded when all punch list items have been completed and approved by the Government Representative.

Revegetation success criteria shall be based on applicable permits and/or pre-existing site conditions; however, the following success criteria shall be met for all projects after two full growing seasons:

- For drill seeded areas, continuous planting rows shall be visually apparent by the end of the first full growing season.
- Seeded areas shall contain a minimum of eight seedlings per square foot by the end of the first full growing season.
- Seeded areas shall not contain bare areas greater than 100 square feet.
- Species designated as List A noxious weeds by the Colorado Department of Agriculture shall not be present within the project area.
- Species designated as List B noxious weeds by the Colorado Department of Agriculture shall not exceed five percent of total cover.
- Species designated as noxious weeds by the Colorado Department of Agriculture, including List C and Watch List species, shall not exceed 10 percent of total cover.
- Native vegetation species shall make up a minimum of 50 percent of the total cover present within seeded areas.
- Non-native weeds shall be controlled to the maximum extent practicable using mechanical or chemical treatments to prevent competition with native species.
- No areas of erosion that impact site stability or integrity, vegetation establishment, or water

quality shall be present within the project area.

- Planted woody material or herbaceous plugs shall have a minimum survival rate of 80 percent.
- Seeded areas shall support at least 70% aerial plant cover in comparison to the pre-construction site cover or adjacent undisturbed area.

Table 3. Minimum Establishment Standards for Final Acceptance

Percent Vegetation Cover	Percent Native Vegetation Cover	Maximum List A Noxious Weed Cover	Maximum List B Noxious Weed Cover	Maximum Noxious Weed Cover (including List C and Watch List Species)	Maximum Size Bare Ground Patch
70% of baseline	50%	0%	5%	10%	100 SF

A list of final success criteria required by these Standards and all applicable permits shall be developed by the Contractor or Revegetation Plan Developer and sent to the Construction Inspector, Permits Inspector, and NR-Manager for approval prior to substantial completion.

6.0 Post-Construction Revegetation Establishment and Maintenance

6.1 General

The vegetation establishment warranty period shall include vegetation monitoring, vegetation maintenance, and adaptive management following construction to achieve success criteria and promote site stabilization and resilience.

For all projects, the Vegetation Warranty Contractor shall be responsible for vegetation monitoring, vegetation maintenance including container stock watering, and adaptive management for a two-year warranty/maintenance period or until success criteria are met to close out applicable permits. The Vegetation Warranty Contractor shall use individuals knowledgeable of native Colorado plant species.

The requirement for the vegetation warranty period may be waived if there is agreement from the Government Representative that a vegetation warranty is not needed.

6.2 Vegetation Establishment Warranty Period

Vegetation warranty requirements should be conducted by a landscape contractor knowledgeable of native Colorado plant species or in tandem with a qualified ecologist. The vegetation establishment warranty period shall begin following substantial completion or as determined by the Government Representative.

Monitoring is required for all projects on a monthly basis for the first year and quarterly basis (three total site visits, one to occur each quarter), at minimum, during the growing season (April to October) for the following year to document vegetation establishment. Monitoring should include documentation of native, non-native, and noxious species, vegetation cover including areas experiencing erosion or areas of bare ground that may be susceptible to erosion, and survival of planted woody vegetation and herbaceous plugs. Photos should be taken at fixed-photo monitoring points throughout the site to document revegetation progress over time.

Adaptive management and vegetation maintenance shall be performed based on monitoring observations and can include, but is not limited to, weed control, reseeding or interseeding, woody plant replacement, erosion control and repairs, soil amendment application, and biomass reduction. Weed control efforts shall be performed at appropriate times in the year based on species observed. Weed control technique selection varies depending on target species and time of year and shall be determined by a qualified ecologist or weed control contractor knowledgeable of native Colorado plant species in coordination with the NR-Manager.

Revegetation success criteria will depend on permits applicable to each project and vegetation data collected during the initial site assessment. Vegetation management includes, but is not limited to, weed control, container stock watering and replacement, live willow and cottonwood pole replacement, herbaceous plug replacement, erosion control and repairs, and reseeding or interseeding. If a partial or total seeding failure is apparent, poorly vegetated areas shall be reseeded in the same manner described above or as specified in design documents. Areas that erode before plant establishment can occur shall be repaired and immediately reseeded during the same growing season. A defined schedule for monitoring and vegetation management shall be prepared by the Contractor and approved by the Government Representative(s) to follow the **POST CONSTRUCTION MAINTENANCE CHECKLIST** identified in **APPENDIX B.**

The Contractor shall prepare a monitoring report at the end of each growing season during the vegetation establishment warranty period documenting monitoring observations and adaptive management efforts during the growing season. The report shall include an evaluation of progress in meeting required success criteria and a plan for the following growing season to meet success criteria that have not been met at the time of reporting.

6.3 Container Stock and Salvaged Materials Warranty

All installed container stock and salvaged materials shall be warrantied for a minimum of one year. After the one-year warranty, the material is still expected to be watered for the entire Vegetation Establishment Warranty Period (two-years). If no irrigation system has been installed, the Contractor is responsible for watering the container stock appropriately, depending on climatic conditions of the year, to receive the minimum rainfall requirement for the species needed for establishment.

After the one-year warranty period, any container stock not showing signs of establishment (e.g. dead or stressed plants) must be replaced at the Contractor's expense. If salvaged materials were improperly installed or did not succeed in budding after the one-year warranty period, a minimum of 80% of the dead or stressed material is to be replaced at the Contractor's expense.

6.4 Weed Control

The seasonal timing of weed control implementation is a critical component to support revegetation establishment objectives. Best weed control practices should be followed to identify when it is appropriate to control weeds by mechanical and/or chemical means.

Mechanical

Properly timed mechanical weed control can be very effective at controlling annual and biennial weeds. Mechanical weed control can include mowing, hand-pulling, weed whacking, and mulching. Selective mechanical control should be employed to reduce cover by non-native and noxious weeds while protecting establishing native plants. Indiscriminate weed control such as site-wide mowing can have negative impacts on native species establishment and can reduce the resilience of a site by disrupting seed production. Additionally, indiscriminate weed control can be detrimental to native forbs while in bloom and can reduce pollinator habitat. Assessment of site conditions prior to mowing is critical to ensure proper adaptive management.

Chemical

Utilizing only mechanical weed control approaches can be difficult to successfully control perennial weeds due to these species' extensive root systems and reproductive characteristics. Herbicide application is recommended to provide long-term control of perennial weeds; however, selective herbicides and spot treatments should be used to avoid negative impacts to native grasses, forbs, and shrubs often associated with non-selective herbicides and broadcast applications. Herbicides shall only be mixed and applied by a licensed herbicide applicator. Only herbicides pre-approved by the Air Force and USAFA Pest Management Officer are allowed.

The Vegetation Warranty Contractor shall reference the **USAFA AND FARISH RECREATION AREA INTEGRATED NOXIOUS WEED MANAGEMENT PLAN** for treatment priorities, treatment methods, and noxious weeds that may be found within the project site.

Appendix A: Revegetation and Erosion Control Design Standards

A.1.1 General

The following section provides guidance and requirements in the design and development of revegetation and erosion control plans and component plans for projects on USAFA lands.

Ensure revegetation and erosion control design compliance with the **UNITED STATES AIR FORCE INSTALLATION DEVELOPMENT PLAN** and its component plans including the **USAFA INSTALLATION FACILITIES STANDARDS** (IFS).

A.1.2 Revegetation Design Objectives

USAFA is situated in a semi-arid region of Colorado. Revegetation plan development shall be contextual to the landscape and take into consideration natural conditions of the land where the project is located such as annual precipitation, elevation, prevailing winds, aspect, landforms/topography, soil composition, soil texture, soil moisture potential, soil drainage, stormwater, groundwater, natural drainages, site uses including wildlife use, and maintenance needs. Revegetation can be challenging and requires proper planning, installation, monitoring, and maintenance to be successful due to Colorado's climate, prevalence of introduced weeds, and difficult soil conditions encountered on many projects.

Revegetation plans should not only consider the project site needs but should account for the surrounding landscape and how the project can impact contiguous lands and the USAFA landscape as a whole. The Standards User shall work with the project's assigned Government Representatives to determine appropriate site improvements with this context in mind.

Natural Resource Protection and Preservation

Revegetation design shall prioritize the minimization of impacts and preserve the existing, or pre-disturbance, function of the landscape. Projects that are in close proximity to or contain natural drainages should limit development within these channels to maintain natural processes, such as water quality and wildlife habitat. Projects that contain wetlands and/or streams must comply with all state and federal permitting requirements.

Soil disturbance is a major driver to weedy species introduction and should be minimized or phased appropriately during construction to limit bare ground and subsoil exposure. Projects should consider impacts to existing tree canopy, promote tree canopy replacement and consider tree canopy age and successional plantings.

Revegetation design shall also consider the reuse of onsite materials that are to be cleared and grubbed. This can include reuse of stumps, wood debris, and boulders to promote ecosystem services and functions and potential cost savings.

Revegetation layout shall consider factors such as hydrologic zones, soil characteristics, slope, aspect, wildlife habitat, erosion control, and water quality.

If a site is properly prepared before revegetating, the plant palette is adapted to onsite conditions, and planting occurs in the appropriate season, average annual rainfall should be adequate for vegetation establishment. However, revegetation planning should consider

natural changes to the landscape and environment including the potential for drought years

during establishment. For this reason, appropriate consideration should be given to the need for supplemental watering if a water source is readily available. A lack of water sources or water rights limits the opportunity for supplemental watering on most native revegetation projects. Therefore, the seasonal timing of seed installation is very important to plan for and measures should be taken during the design phase to ensure proper seed installation timing. Additional information is provided on watering considerations in *Section 4.0 Watering and Irrigation*.

Green Infrastructure

Site design is significantly tied to revegetation success. Infrastructure improvements should consider the sustainable use of materials and natural resource resiliency that promote ecosystem function and process-based design in the revegetation of the site. Green infrastructure design tools and techniques should be utilized. In Colorado, the smart use of water through site design is a major objective for green infrastructure. This can include design solutions that minimize impact to the existing conditions of the site or replicate the natural landform and surface water flow paths. Directing stormflows across revegetation areas by careful placement of building downspouts, snow pile holding and melt path areas for winter road clearing, use of permeable pavement, and parking lot swale features can help to treat water quality while providing moisture and nutrients for vegetation. Revegetation areas that receive stormwater flows in locations where water quality is impacted such as roadways and parking lots, should include design elements adept at water quality improvement such as grass buffers, bioswales, bioretention, and sand filters, among other techniques.

Site and revegetation design should also take into consideration heat mitigation strategies that can include high albedo materials, passive cooling, natural ventilation, and appropriate revegetation strategies such as promoting areas of tree canopy.

Defensible Space

Defensible space is a critical line of defense against spreading wildfires in urban and wildland urban interface areas. Planting and revegetation materials that allow fires to spread unchecked should be removed or modified to slow the rate and/or intensity of wildfires. The safety zone should be kept clear of all highly flammable materials, with the distance varying by fuel-type.

All projects should reference the Ignition Resistant Construction Design Manual published by the Colorado Springs Fire Department, as a basis for Firewise landscaping for all new development and revegetation within the Wildland Urban Interface. Additional resources on appropriate Firewise plant materials are available from Colorado State University Extension office.

Wildlife Corridors

Wildlife corridors are widespread throughout USAFA Lands, and every project should consider its interactions with them. It is easier to think about large mammal corridors as these are the most commonly referred to and studied, however, corridors for Federal or State designated special status species may have overlap. Other areas, such as near runways, landing pads, or heavier travelled roads may discourage a revegetated structure providing wildlife cover and eliminating fruit-bearing species attracting black bears and birds that may collide with vehicles.

Pollinator Habitat

Pollinator habitat is important to perpetuating and maintaining healthy ecosystems and providing forage and habitat for sensitive species. Seed mixes may be adjusted as appropriate to target certain pollinators, but otherwise should consist of perennial native grasses and forbs with a variable and habitat-appropriate color palette. Seed mixes and plant palettes should contain pollinator species that bloom throughout the growing season and provide different colors to provide a wide variety of opportunities for pollinators throughout a longer seasonal window. Plant selection should also include consideration for wind pollinated species.

Erosion Control, Establishment Maintenance, and Construction Laydowns Requirements

Revegetation design shall consider temporary and final erosion control best management practices (BMPs) as well as the planned establishment period, ongoing USAFA land management, and warranty needs such as the need for irrigation and site access. All planting material, including seed, shall include a warranty and/or maintenance period to occur after construction completion. Laydown areas shall be properly sited to minimize disturbance to protected resources, such as, but not limited to, wetlands, waters, sensitive species habitat, and cultural resources, and be included in the revegetation plan. For projects that impact channels, the Revegetation Plan shall plan for dewatering as needed and provide a phasing plan. Construction laydown and access areas are typically heavily trafficked by large equipment and frequent trips. These areas shall include additional consideration for scarification and decompaction, revegetation, and erosion control needs.

A.1.3 Revegetation Plan Design

A Revegetation Plan, a formal design plan or informal component submittal documenting how revegetation is planned to take place, is required for all native revegetation projects on USAFA lands. For smaller and/or simpler projects, the Revegetation Plan Developer can be part of a contracted project design team or can be the NR-Manager. For these projects, a formal design plan document is not required but submittals of the required plan components will be provided to and reviewed by the Government Representatives. The plan components anticipated for submittal include:

- Planting and seeding schedule including quantities and seeding extents
- Any proposed modifications to these Standards

These Standards and clear coordination with the Government Representatives will provide guidance on revegetation. A formal design plan document may be required as determined by the Government Representatives.

For larger and/or more complex projects and/or for projects that take place along a natural drainage, a multi-disciplinary design team that includes engineers, landscape architects, ecologists, and wildlife biologists should be assembled. For these projects, the Revegetation Plan Developer shall be a revegetation specialist who is an ecologist and/or registered landscape architect experienced in restoration ecology and local native plant communities. For these projects, a Revegetation Plan is required and shall, at minimum, contain the following information:

- Layout plan showing location of all proposed revegetation materials
- Planting and seeding schedule including quantities

Notes and details that identify best construction standards and practices for revegetation installation
Revegetation plans shall be developed by the Revegetation Plan Developer following the guidelines outlined in these Standards with an understanding of the goals and objectives of the project. The following steps are required to complete the Revegetation Plan design.

Initial Site Analysis and Assessment

An initial site analysis, conducted by the Revegetation Plan Developer, shall be completed to inform site-specific revegetation design objectives for the project. A site assessment should be completed during the growing season. The analysis and assessment shall evaluate relevant site conditions such as:

- Existing site conditions such as sun exposure, shading patterns, existing urban heat island effects. These conditions may change throughout the day and season, which should also be considered.
- Existing habitat such as signs of herbivory, nests or dens to inform protection fencing planning or construction survey needs
- Surface and subsurface geological and hydrological conditions
    - Groundwater, surface water, and precipitation
        - Include as able, depth to groundwater, fluctuations in the groundwater depths should be monitored for at least one year if schedule and budget allows.
        - If limited data is available for groundwater such as geotechnical reports or only one year of monitoring, it is important to understand that data in the hydrologic context (wet year, dry year) and season in which the data was collected.
    - Depth to bedrock or other subsurface impediments to revegetation as determined by a geotechnical investigation
- Existing topsoil conditions
    - Topsoil sampling and analysis utilizing methodology outlined in Section 3.0
- Existing vegetation total cover
    - Conduct photo documentation of representative area of vegetation by taking plot level and landscape level photos at pre-construction photo points or capture up-to-date aerial imaging to determine a quantitative estimate of:
        - Total native and non-native cover
        - Total tree, shrub, and groundcover cover
        - Total area of bare ground
- Existing vegetation species composition, within the project area and immediately adjacent to the project area.
    - Conduct ocular assessments and documentation of all species, including invasive weed species that may be present in the topsoil seedbank or in close proximity to the site, to help inform seed mix composition and or preventative weed control efforts. Collect documentation on location and percent cover of dominant species.
- Existing site materials (i.e., trees or shrubs that will be removed, woody debris, rock) that may be used during construction for stabilization, wildlife habitat, or revegetation.

If existing site conditions are significantly degraded or if the site is dominated by non-native or noxious species, an ecological reference site that represents conditions that would be expected on the project site should be assessed to inform site specific opportunities. In addition, Natural Resource Conservation Service (NRCS) Ecological Site Descriptions (ESDs) and Center for Environmental Management of Military Lands (CEMML) USAFA Vegetation Classification and Mapping can be used to understand plant community composition for degraded sites. The Government Representatives shall determine if this requirement shall be waived depending on project needs.

A.1.4 Existing Plant Communities

The Revegetation Plan design should be informed by the existing plant communities found at the project site. The following hydrological zones are represented across USAFA and may be present within project extents.

Upland Hydrological Zone

Native upland areas at USAFA include grasslands, shrubland, and/or woodland/forest. Native upland vegetation is generally xeric and are well adapted to the region with average rainfall of between 15 to 20 inches (15-20") per year.

Additional information on vegetation communities found within the upland hydrological zone can be found within the vegetation zone descriptions below.

Riparian Hydrological Zone

The main riparian hydrological zone on USAFA is along Monument Creek and its major tributaries comprising approximately 2.2 acres of riverine systems and 210 acres of palustrine system wetlands. Across USAFA, there are 301 identified wetlands and other water bodies.

Vegetation communities in this zone consist of various cottonwood species (*Populus angustifolia and P. deltoides*) and willows (*Salix* spp.). Also in this zone are small showy herbs and forbs such as darkthroat shootingstar (*Dodecatheon pulchellum*), bunchberry dogwood (*Cornus canadense*), and twinflower (*Linnaea borealis*) and a variety of grass species. Monument Creek is an important system for native fish communities and provides habitat for Preble's meadow jumping mouse (*Zapus hudsonius preblei*), Hops azure butterfly (*Celestrina humulus*), cedar waxwing (*Bombycilla cedrorum*), gray catbird (*Dumetella carolinensis*), and the northern leopard frog (*Lithobates pipiens*).

The following vegetation zones are represented across USAFA and may be present within project extents.

Foothills Zone (6,000 – 8,000 ft)

The Foothills Zone may contain both upland and riparian areas. It is subdivided into four community types: Douglas-fir woodlands, ponderosa pine woodlands, oak shrublands, and grassland. Douglas-fir (*Pseudotsuga menziesii*) woodlands are mixed woodlands with white fir (*Abies concolor*) primarily on north-facing slopes. Often associated with common juniper (*Juniperus communis*) waxflower (*Jamesia americana*), and mountain mahogany (*Cercocarpus montanus*). Ponderosa Pine (*Pinus ponderosa*) *w*oodlands are the primary woodland type on the Academy, occupying drier areas than the Douglas-fir woodlands. Trees in this system are often grouped together with more open park-like ground cover. Often associated with gooseberries and currants (*Ribes aureum and R. cereum),* alpine false spring parsley (*Pseudocymopterus montanus*), mountain muhly (*Muhlenbergia montana*), ninebark (*Physocarpus monogynus*), and Gambel oak (*Quercus gambelii*). Oak shrubland occupy the dry mesas and south-facing slopes along the foothills on the Academy. The dominant species in this zone is Gambel oak (*Quercus gambelii*) that form dense thickets. This zone is often associated with pinion pine (*Pinus edulis*), one-seed juniper (*Juniperus monosperma*), ponderosa pine, mountain mahogany, oceanspray (*Holodiscus discolor*), Boulder raspberry (*Oreobatus deliciosus),* and snowberry (*Symphoricarpos albus*). The grassland communities on the Academy occupy most of the eastern portion of the site. They are dominated by short-grass prairie species including smooth brome (*Bromis inermis*), crested wheatgrass (*Agropyron cristatum*), blue grama (*Bouteloua gracilis*), little bluestem (*Schizachyrium scoparium*), fringed sage (*Artemisia frigida),* and Spanish bayonet (*Yucca glauca*).

Montane Zone (8,000 – 9,000 ft)

The Montane Zone may contain both upland and riparian areas. It is comprised of mixed conifer forests along the western boundary of the Academy extending into Rampart Range. Dominant tree species include: Douglas-fir, ponderosa pine, white fir, limber pine (*Pinus flexilis*), blue spruce (*Picea pungens*), Engelmann spruce *(Picea engelmannii*), and common juniper. Dominant shrubs include: kinnikinnick (*Arctostaphylos uva-ursi*), waxflower, and mountain mahogany.

Urban Development

The Urban Development area is generally comprised of Cadet areas and housing, a Community Center, golf course, roads, sidewalks, parking lots, buildings, and hardscaped features. These areas are typically comprised of irrigated, ornamental landscapes containing non-native vegetation, turf lawns, and ornamental trees and shrubs.

Noxious and Non-Native Vegetation Species

Noxious and non-native vegetation species are pervasive in many areas on USAFA lands, particularly in locations where Urban Development is localized and associated land disturbance has occurred. Invasion of noxious and non-native species can be anticipated on newly disturbed sites. The USAFA and Farish Recreation Area Integrated Noxious Weed Management Plan developed by Colorado Natural Heritage Program (2015) should be referenced to understand what noxious weeds may exist and appropriate treatment and control strategies to implement prior to and during construction. Projects on Bullseye Auxiliary Airfield should reference State Land Board noxious weed control guidance.

Weed control should be considered a year or more prior to soil disturbance and should be evaluated for all habitat zones. If a site has annual or perennial weed growth, weed management before revegetation is crucial for minimizing weeds and weed seed and to allow for desirable species establishment. Removing the weed source will help reduce competition for soil moisture and nutrients during desirable plant species establishment. Implementing weed control practices prior to and/or during construction can reduce the level of effort required for weed control later as new vegetation is becoming established. Remove or bury the topsoil from the site if infested by undesirable species.

A.1.5 Seeding Selection

Seed Mix Selection

All Revegetation Plans shall use the USAFA standard grass/forb and shrub overseed mixes. The USAFA Seed Mix Map (**FIGURE 11**) shall be used to determine the standard native seed mix(es) to use during revegetation efforts.

The standard seed mix(es) provided in this section may be modified based on pre-construction site observations of vegetation species and composition or other project specific design objectives, if approved by the Government Representatives after conducting the initial site assessment. Modifications may include, but are not limited to, substituting or adding native species and increasing or decreasing rates for individual native species. Species should be chosen that are adapted to the environmental conditions at the project site such as water availability, soil texture and chemistry, and elevations. Sites with unique soil chemistry and texture should use species adapted for those soil conditions. Modified seed mixes shall contain a variety of warm and cool-season species and early-, mid-, and late-seral species to promote process-based design and account for successional trajectories. Riparian seed mixes shall contain a variety of species adapted to a range of hydrologic conditions including wetland, riparian, and upland species to account for periods of high-water and drought and to maximize revegetation opportunity by

providing a high-quality seed bank. Modifications to shrub overseed mixes shall consider species germination requirements, cost, and market availability. Seeding is generally not feasible for trees and select shrubs due to these factors.

When available, locally adapted seed ecotypes collected from a similar elevation as USAFA (6,300-8,000'), Farish Recreation Area (~9,000'), and Bullseye Auxiliary Airfield (~6,000') with between 15 and 20 inches (15-20") of annual precipitation, as indicated by NRCS Land Resource Region descriptions, shall be used.

The standard Mountain Seed Mix or a site-specific mix approved by the NR-Manager shall be used for revegetation efforts in upland areas at Farish Recreation Area. Site specific riparian and/or wetland seed mixes shall be developed for projects disturbing these environments at Farish Recreation Area. All site-specific seed mixes developed for Farish Recreation Area shall be approved by the NR-Manager prior to procurement and installation.

For projects located at Bullseye Auxiliary Airfield, coordinate with the NR-Manager and defer to the Colorado State Land Board for seed mix development.

Seed Zone Limits

Determining appropriate seed zone limits requires an understanding of regulatory requirements, anticipated hydrologic conditions, aspect, slopes, and project goals and objectives. The Revegetation Plan Developer shall use **FIGURE 11** to determine the appropriate seed mix(es) to use on revegetation plans. In general, when a project involves impacts to waterbodies, wetland, riparian, and upland seed mixes shall be used. Shrub overseed mixes can be incorporated into the grass/forb seed mix or, at minimum, shall be used in select areas determined by the Revegetation Plan Developer or NR-Manager to increase vegetation structural diversity.

Figure 11: USAFA Seed Mix Map

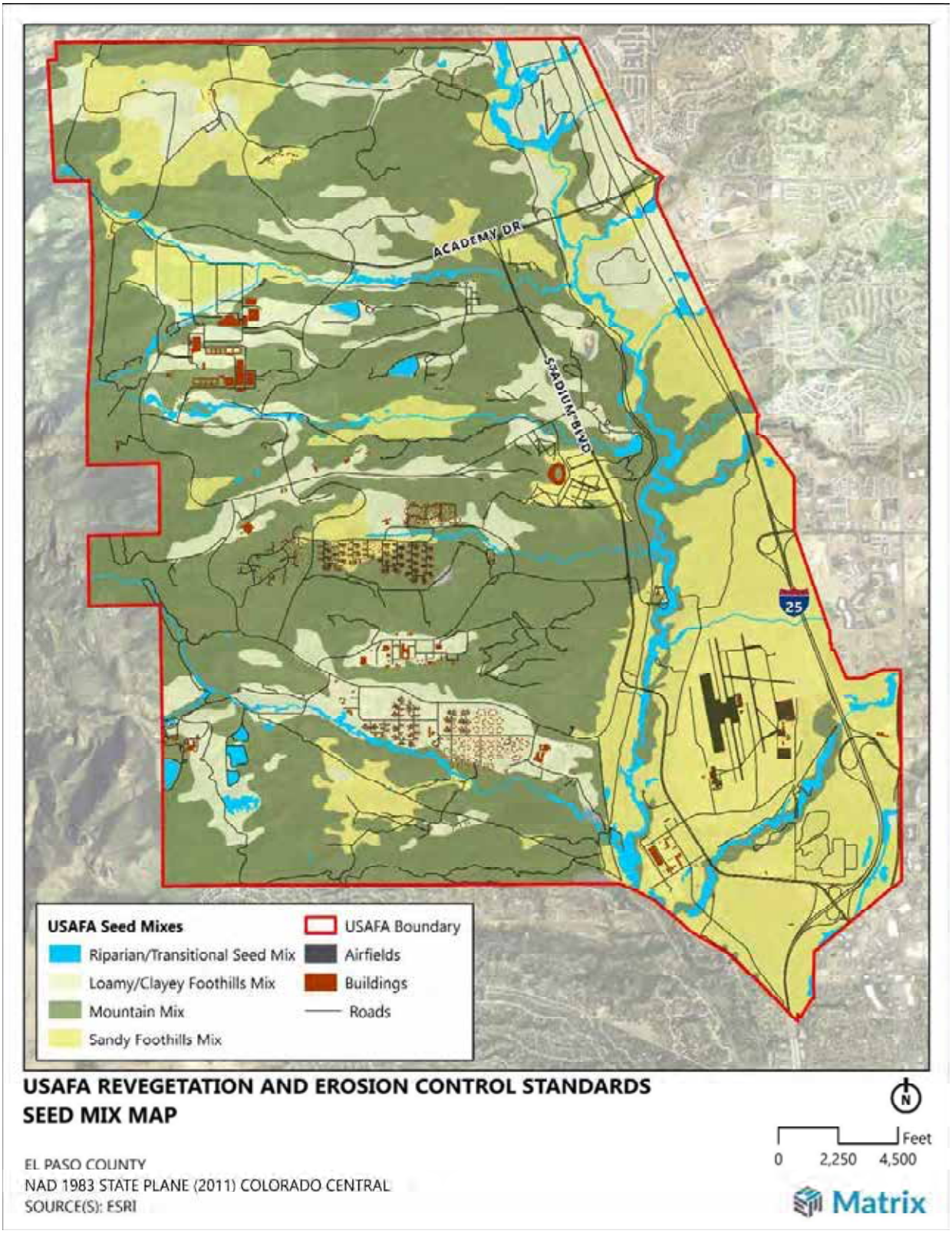
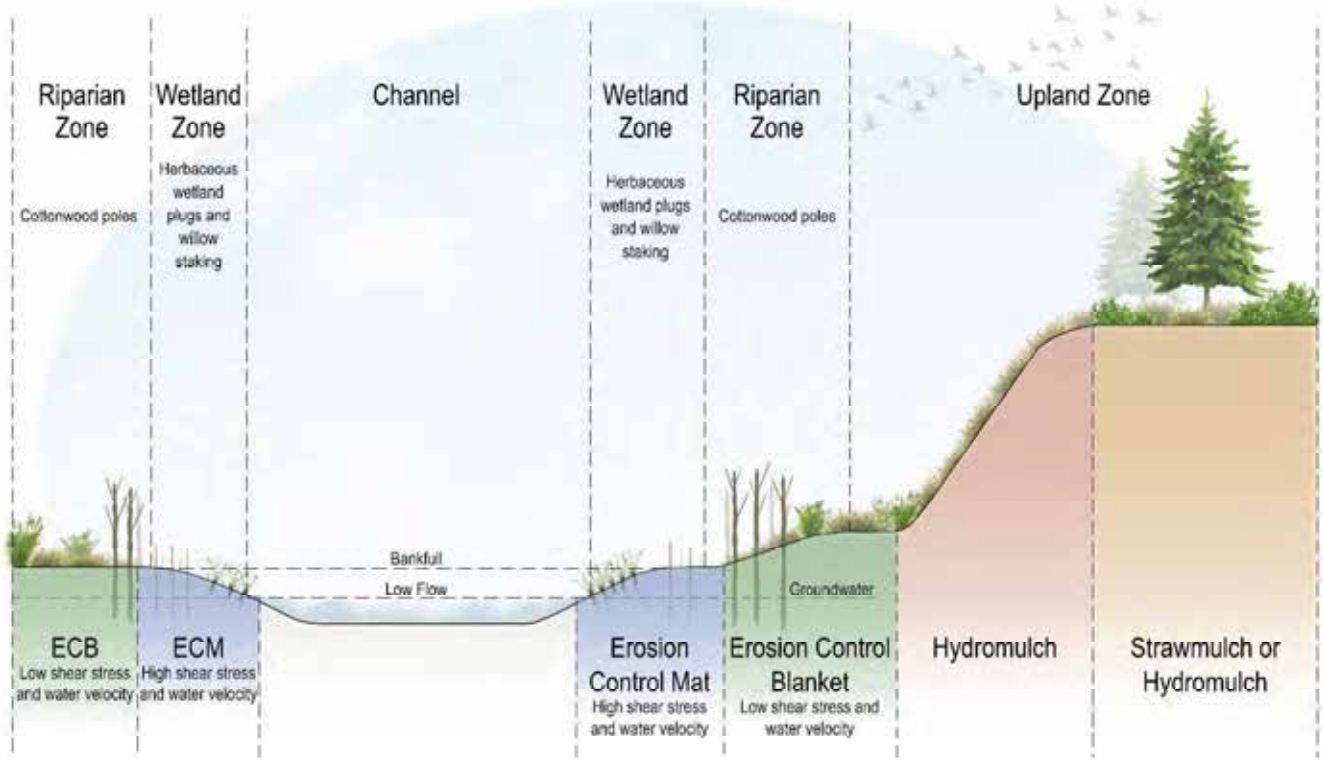


Figure 12: Standard Seeding Extents



Wetland Seed Mix

The standard Wetland Seed Mix or an approved modified Wetland Seed Mix shall be used in areas that are inundated or saturated frequently during the growing season. In general, wetland seeding shall be located in areas that are within six inches (6") vertically from a water source that provides saturation for up to 14 days of the year. While not shown on **FIGURE 11**, the Revegetation Plan Developer shall use their discretion to determine if the Wetland Seed Mix or Plug List are appropriate on a project-by-project basis. If deemed necessary, wetland plugs shall be shown on revegetation plans where groundwater is within 18 inches (18") or less of the soil surface.

Table 4: Wetland Seed Mix

Wetland Seed Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/ sq ft**	**% of PLS/sq ft**
Graminoids						
Calamagrostis canadensis	vns.	bluejoint	0.10	1	9	6
Carex nebrascensis	vns.	Nebraska sedge	0.70	4	9	5
Carex utriculata	vns.	Northwest Territory sedge	1.20	6	10	6
Distichlis spicata	vns.	inland saltgrass	0.70	4	8	5
Eleocharis palustris	vns.	creeping spikerush	0.70	4	10	6
Elymus elymoides	vns.	bottlebrush squirreltail	2.00	11	9	6
Elymus trachycaulus	San Luis or White River	slender wheatgrass	2.20	12	8	5
Juncus arcticus ssp. littoralis	vns.	mountain rush	0.06	0	15	9
Panicum virgatum	vns.	switchgrass	2.80	15	17	10
Poa palustris	vns.	fowl bluegrass	0.10	1	7	5
Sporobolus airoides	Salado	alkali sacaton	0.25	1	10	6
Sporobolus cryptandrus	vns.	sand dropseed	0.07	0	9	5
		Graminoid Totals	10.88	57	120	75
Forbs						
Asclepias incarnata	vns.	swamp milkweed	2.50	13	9	6
Asclepias speciosa	vns.	showy milkweed	5.00	26	8	5
Monarda fistulosa	vns.	wild bergamont	0.20	1	6	4
Rudbeckia hirta	vns.	blackeyed Susan	0.20	1	8	5
Verbena hastata	vns.	swamp verbena	0.20	1	8	5
		Forb Totals	8.10	43	39	25
		Total	**18.98**	**100**	**159**	**100**

*vns. = variety not specified

Table 5: Wetland Plug Mix

Wetland Plug Mix				
Scientific Name	**Common Name**	**Percent Mix**	**Size**	**Spacing**
Carex nebrascensis	Nebraska sedge	15	10 ci	12"
Carex utriculata	Northwest Territory sedge	20	10 ci	12"
Deschampsia cespitosa	tufted hairgrass	15	10 ci	18"
Eleocharis palustris	creeping spikerush	20	10 ci	12"
Juncus arcticus ssp. littoralis	mountain rush	20	10 ci	12"
Schoenoplectus acutus	hardstem bulrush	10	10 ci	24"

Riparian Seed Mix

The Riparian Seed Mix zone shall occupy the zone between the wetland seeding zone and upland seeding zone. Riparian seeding limits will generally start within three to six feet (6') vertical and/or horizontal from a seasonal water source or that experiences storm flows within an anticipated maximum 10-year interval. Riparian and wetland seeding placement should consider anticipated capillary fringe based on soil texture. **FIGURE 12** depicts general seeding zone extents; however, site-specific considerations should be considered when developing revegetation plans.

Table 6: Riparian Seed Mix

Riparian Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/ sq ft**	**% of PLS/sq ft**
Graminoids						
Carex nebrascensis	vns.	Nebraska sedge	1.50	4	18	12
Distichlis spicata	vns.	inland saltgrass	1.20	3	14	9
Elymus canadensis	vns.	Canada wildrye	6.30	16	17	11
Elymus lanceolatus ssp. lanceolatus	vns.	thickspike wheatgrass	4.00	10	14	9
Elymus trachycaulus	San Luis or White River	slender wheatgrass	3.00	8	11	7
Juncus arcticus ssp. littoralis	vns.	mountain rush	0.06	0	15	10
Panicum virgatum	vns.	switchgrass	3.00	8	18	11
Pascopyrum smithii	Arriba	western wheatgrass	1.00	3	3	2
Sporobolus airoides	Salado	alkali sacaton	0.25	1	10	6
Sporobolus cryptandrus	vns.	sand dropseed	0.08	0	10	6
Triticum aestivum x Secale cereale	vns.	Quickguard	10.00	26	3	2
		Graminoid Totals	30.39	78	133	85
Forbs						
Asclepias speciosa	vns.	showy milkweed	4.50	12	7	5
Cleome serrulata	vns.	Rocky Mountain beeplant	3.00	8	5	3
Helianthus maximiliani	vns.	Maxmilian sunflower	0.90	2	4	3
Rudbeckia hirta	vns.	blackeyed susan	0.12	0	5	3
Verbena hastata	vns.	swamp verbena	0.08	0	3	2
		Forb Totals	8.60	22	24	15
		Total	**38.99**	**100**	**157**	**100**

*vns. = variety not specified

Table 7: Riparian Shrub Overseed Mix

Riparian Shrub Overseed Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/ sq ft**	**% of PLS/sq ft**
Artemisia ludoviciana	vns.	white sagebrush	0.04	0	4	27
Prunus virginiana	vns.	western chokeberry	10.00	56	1	7
Rosa woodsii	vns.	Woods' rose	5.00	28	5	34
Symphoricarpos albus	vns.	common snowberry	2.80	16	5	32
		Total	**17.84**	**100**	**15**	**100**

*vns. = variety not specified

Loamy & Clayey Foothills Seed Mix

The Loamy and Clayey Foothills Seed Mix shall be used in upland areas with loamy and clayey soils as indicated on **FIGURE 11** or confirmed with site-specific soil sampling. These soil types are often dominated by similar vegetation communities due to similarities in water retention and general soil structure.

Table 8: Loamy/Clayey Foothills Seed Mix

Loamy/Clayey Foothills Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/ sq ft**	**% of PLS/sq ft**
Graminoids						
Andropogon gerardii	vns.	big bluestem	2.00	4	6	4
Bouteloua curtipendula	vns.	sideoats grama	3.20	6	14	10
Bouteloua dactyloides	vns.	buffalograss	7.20	14	9	6
Bouteloua gracilis	CO Native	blue grama	0.85	2	16	11
Elymus elymoides	vns.	bottlebrush squirreltail	2.50	5	11	8
Hesperostipa comata ssp. comata	vns.	needle and thread	2.60	5	7	5
Koeleria macrantha	Sims Mesa	prairie junegrass	0.29	1	15	11
Nassella viridula	vns.	green needlegrass	3.10	6	13	9
Pascopyrum smithii	Arriba	western wheatgrass	6.50	13	16	11
Schizachyrium scoparium	Cimarron	little bluestem	2.00	4	12	8
Triticum aestivum x Secale cereale	vns.	Quickguard	15.00	30	5	3
		Graminoid Totals	45.24	90	125	85
Forbs						
Artemisia frigida	vns.	prairie sagewort	0.03	0	3	2
Dalea purpurea var. purpurea	vns.	purple prairie clover	1.20	2	6	4
Ratibida columnifera	vns.	upright prairie coneflower	0.30	1	5	3
Sphaeralcea coccinea	vns.	scarlet globemallow	0.50	1	6	4
Vicia americana	vns.	American vetch	3.00	6	2	2
		Forb Totals	5.03	10	22	15
		Total	**50.27**	**100**	**147**	**100**

*vns. = variety not specified

Table 9: Loamy/Clayey Foothills & Mountain Shrub Overseed Mix

Loamy/Clayey Foothills & Mountain Shrub Overseed Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/ sq ft**	**% of PLS/sq ft**
Amelanchier utahensis	vns.	Utah serviceberry	6.00	51	4	22
Atriplex canescens	vns.	fourwing saltbush	3.50	30	4	25
Ericameria nauseosa	vns.	rubber rabbitbrush	0.40	3	4	22
Krascheninnikovia lanata	vns.	winterfat	1.80	15	5	31
		Total	**11.70**	**100**	**16**	**100**

*vns. = variety not specified

Sandy Foothills Seed Mix

The Sandy Foothills Seed Mix shall be used in upland areas with sandy soils as indicated on **FIGURE 11** or confirmed with site-specific soil sampling. Sandy soils typically have high infiltration rates and thus offer little water retention. Sandy soils typically support xeric species adapted to low moisture and nutrient availability.

Table 10: Sandy Foothills Seed Mix

Sandy Foothills Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/sq ft**	**% of PLS/sq ft**
Graminoids						
Andropogon hallii	vns.	sand bluestem	3.40	8	9	6
Bouteloua gracilis	CO Native	blue grama	0.80	2	15	10
Calamovilfa longifolia	vns.	prairie sandreed	2.50	6	16	10
Hesperostipa comata ssp. comata	vns.	needle and thread	6.00	14	16	10
Koeleria macrantha	Sims Mesa	prairie junegrass	0.12	0	6	4
Muhlenbergia montana	vns.	mountain muhly	0.25	1	9	6
Pascopyrum smithii	Arriba	western wheatgrass	6.00	14	15	10
Schizachyrium scoparium	Cimarron	little bluestem	2.00	5	12	8
Sorghastrum nutans	vns.	yellow Indiangrass	3.80	9	15	10
Sporobolus cryptandrus	vns.	sand dropseed	0.12	0	15	9
Triticum aestivum x Secale cereale	vns.	Quickguard	10.00	24	3	2
		Graminoid Totals	34.99	82	131	85
Forbs						
Achillea millefolium	vns.	common yarrow	0.08	0	5	3
Dalea purpurea var. purpurea	vns.	purple prairie clover	1.00	2	5	3
Heterotheca villosa	vns.	hairy false goldenaster	0.90	2	7	5
Ipomopsis aggregata	vns.	scarlet gilia	0.50	1	4	3
Lupinus argenteus	vns.	silvery lupine	5.00	12	2	1
		Forb Totals	7.48	18	23	15
		Total	**42.47**	**100**	**154**	**100**

*vns. = variety not specified

Table 11: Sandy Foothills Shrub Overseed Mix

Sandy Foothills Shrub Overseed Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/sq ft**	**% of PLS/sq ft**
Artemisia frigida	vns.	prairie sagewort	3.00	31	5	29
Ericameria nauseosa	vns.	rubber rabbitbrush	0.50	5	5	29
Gutierrezia sarothrae	vns.	broom snakeweed	0.10	1	4	24
Rhus trilobata	vns.	skunkbush sumac	6.00	63	3	18
		Total	**9.60**	**100**	**16**	**100**

*vns. = variety not specified

Mountain Seed Mix

The Mountain Seed Mix shall be used in high elevation upland areas that are typically dominated by evergreen forests as indicated on **FIGURE 11**. These areas typically support species adapted to higher elevations and shade or low-light conditions.

The standard Mountain Seed Mix or site-specific mix approved by the NR-Manager shall be used for revegetation efforts in upland areas at Farish Recreation Area.

Table 12: Mountain Seed Mix

Mountain Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/ sq ft**	**% of PLS/sq ft**
Graminoids						
Achnatherum hymenoides	White River or Paloma	indian ricegrass	4.00	9	13	8
Andropogon gerardii	vns.	big bluestem	2.50	6	7	5
Andropogon hallii	vns.	sand bluestem	2.40	5	6	4
Bouteloua gracilis	CO Native	blue grama	1.00	2	19	12
Elymus elymoides	vns.	bottlebrush squirreltail	2.60	6	11	7
Elymus lanceolatus ssp. lanceolatus	vns.	thickspike wheatgrass	6.00	13	21	14
Festuca arizonica	vns.	Arizona fescue	1.10	2	14	9
Hesperostipa comata ssp. comata	vns.	needle and thread	6.00	13	16	10
Poa fendleriana	vns.	muttongrass	0.30	1	14	9
Schizachyrium scoparium	Cimarron	little bluestem	1.80	4	11	7
Triticum aestivum x Secale cereale	vns.	Quickguard	10.00	22	3	2
		Graminoid Totals	37.70	84	136	88
Forbs						
Artemisia ludoviciana	vns.	white sagebrush	0.05	0	5	3
Heterotheca villosa	vns.	hairy false goldenaster	0.50	1	4	2
Lupinus argenteus	vns.	silvery lupine	6.00	13	3	2
Penstemon strictus	vns.	Rocky Mountain penstemon	0.20	0	3	2
Ratibida columnifera	vns.	upright prairie coneflower	0.30	1	5	3
		Forb Totals	7.05	16	19	12
		Total	**44.75**	**100**	**155**	**100**

*vns. = variety not specified

Table 13: Mountain Shrub Overseed Mix

Mountain Shrub Overseed Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/ sq ft**	**% of PLS/sq ft**
Artemisia frigida	vns.	prairie sagewort	3.00	14	5	21
Cercocarpus montanus	vns.	alderleaf mountain mahogany	3.00	14	3	15
Rosa woodsii	vns.	Woods' rose	3.00	14	3	15
Rhus trilobata	vns.	skunkbush sumac	6.00	29	3	13
Symphoricarpos oreophilus	vns.	mountain snowberry	6.00	29	8	35
		Total	**21.00**	**100**	**21**	**100**

*vns. = variety not specified

Low-Grow Seed Mix

The Low-Grow Seed Mix was developed for use in upland areas adjacent to trails, sidewalks, and roads, or areas that require a lower growing plant palette to achieve a desired design intent or aesthetic. While not shown on **FIGURE 11**, the Revegetation Plan Developer shall use their discretion to determine if the Low-Grow Seed Mix is appropriate on a project-by-project basis.

Table 14: Low Grow Mix

Low Grow Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/ sq ft**	**% of PLS/sq ft**
Graminoids						
Bouteloua curtipendula	vns.	sideoats grama	3.50	10	13	9
Bouteloua dactyloides	vns.	buffalo grass	10.00	30	13	9
Bouteloua gracilis	CO Native	blue grama	1.20	4	23	17
Distichlis spicata	vns.	inland saltgrass	1.30	4	15	11
Elymus trachycaulus	San Luis or White River	slender wheatgrass	4.00	12	15	11
Festuca arizonica	vns.	Arizona fescue	1.80	5	20	14
Festuca idahoensis	vns.	Idaho fescue	1.30	4	13	10
Koeleria macrantha	Sims Mesa	prairie junegrass	0.20	1	11	8
Poa secunda	Boulder County	Sandberg's bluegrass	0.50	1	12	9
Triticum aestivum x Secale cereale	vns.	Quickguard	10.00	30	3	2
		Total	**33.80**	**100**	**138**	**100**

*vns. = variety not specified

Temporary Seed Mix

The standard temporary seed mix shall be used on disturbed upland areas or soil stockpiles that will remain in an interim state for more than 30 days, but less than one year. If disturbed areas or soil stockpiles are to remain in an interim state for more than one year the appropriate standard seed mix shall be used for long-term stabilization.

Table 15: Temporary Seed Mix

Temporary Seed Mix						
Scientific Name	**Variety***	**Common Name**	**PLS lbs/ac**	**% by Weight**	**PLS/ sq ft**	**% of PLS/sq ft**
Graminoids						
Bouteloua curtipendula	vns.	sideoats grama	4.50	11	20	19
Bouteloua gracilis	vns.	blue grama	1.00	2	19	18
Elymus canadensis	vns.	Canada wildrye	7.00	17	18	18
Elymus trachycaulus	vns.	slender wheatgrass	6.00	15	22	21
Pascopyrum smithii	vns.	western wheatgrass	7.50	18	19	18
Triticum aestivum x Secale cereale	vns.	Quickguard	15.00	37	5	5
		Total	**41.00**	**100**	**103**	**100**

*vns. = variety not specified

A.1.6 Plant Selection

All Revegetation Plans shall use the USAFA standard shrub and tree container stock list. The USAFA Seed Mix Map (FIGURE 11) shall be used to determine the standard shrub and tree container stock lists to use during revegetation efforts.

The standard shrub and tree container stock lists provided in this section may be modified based on pre-construction site observations of vegetation species and composition or other project specific design objectives, if approved by the Government Representatives after conducting the initial site assessment. Modifications may include, but are not limited to, substituting or adding native species or using a cultivated variety of the native species as approved by the Government Representative.

Selecting appropriate plants is essential for all projects at USAFA. When selecting plants for the revegetation design, it is important to choose vegetation species that are drought tolerant. Because native plants are adapted to the climatic conditions found at USAFA, native plantings or native cultivars should be considered for native revegetation. Plant selection should focus on creating a diverse plant palette, consider long-term performance, and minimize maintenance needs. Consideration should be given to the site's unique micro-climatic conditions, including solar aspect, wind exposure, and potential shading from nearby structures.

Plant selection should take into account the anticipated water regime and whether the site will be irrigated, receive surface water flows, or remain non-irrigated. Other factors to consider include above and below ground conditions, such as utilities, soil volume, adjacent structures, and environmental conditions specific to the location. Whenever possible, plants should be sourced locally or from regions with similar growing conditions to ensure adaptability and success in the restoration process.

Table 16: USAFA Shrub Container Stock List

USAFA Shrub Container Stock			
Scientific Name	**Common Name**	**Seed Mix Zone**	**Ignition Resistant**
Amorpha canescens	leadplant	Sandy Foothills Mix	No
Arctostaphylos uva-ursi	kinnikinnick	Sandy Foothills Mix, Mountain Mix	Yes
Atriplex canescens	fourwing saltbush	Loamy/Clayey Foothills Mix, Sandy Foothills Mix	No
Cercocarpus montanus	alderleaf mountain mahogany	All	Yes
Dasiphora fruticosa	shrubby cinquefoil	Loamy/Clayey Foothills Mix	Yes
Ericameria nauseosa	rubber rabbitbrush	Sandy Foothills Mix	No
Gutierrezia sarothrae	broom snakeweed	Loamy/Clayey Foothills Mix, Sandy Foothills Mix, Mountain Mix	No
Humulus lupulus	common hop	Riparian/Transition Mix	No
Lonicera morrowii	Morrow's honeysuckle	Riparian/Transition Mix	No
Prunus americana	American plum	Riparian/Transition Mix	No
Prunus pumila	western sandcherry	Sandy Foothills Mix	No
Prunus virginiana	chokecherry	Riparian/Transition Mix	No
Quercus gambelii	Gambel oak	All	No
Rhus trilobata	skunkbush sumac	All	No
Ribes aureum	golden currant	Riparian/Transition Mix	Yes
Ribes cereum	wax currant	Loamy/Clayey Foothills Mix, Sandy Foothills Mix, Mountain Mix	No
Rosa woodsii	Woods' rose	All	Yes
Symphoricarpos albus	common snowberry	All	Yes
Symphoricarpos occidentalis	western snowberry	Riparian/Transition Mix	Yes
Symphoricarpos oreophilus	mountain snowberry	Loamy/Clayey Foothills Mix, Mountain Mix, Riparian/Transition Mix	Yes
Yucca glauca	soapweed yucca	All	Yes

Table 17: USAFA Tree Container Stock List

USAFA Tree Container Stock			
Scientific Name	**Common Name**	**Seed Mix Zone**	**Ignition Resistant**
Abies concolor	white fir	Loamy Clayey Foothills Mix, Sandy Foothills Mix, Mountain Mix	No
Betula occidentalis	water birch	Riparian/Transition Mix	Yes
Juniperus monosperma	oneseed juniper	Sandy Foothills Mix	No
Juniperus scopulorum	Rocky Mountain juniper	Loamy/Clayey Foothills Mix, Sandy Foothills Mix, Mountain Mix	No
Picea engelmannii	Engelmann spruce	Loamy/Clayey Foothills Mix, Mountain Mix, Riparian/Transition Mix	No
Picea pungens	blue spruce	Loamy/Clayey Foothills Mix, Sandy Foothills Mix, Mountain Mix	No
Pinus flexilis	limber pine	Sandy Foothills Mix, Mountain Mix	No
Pinus ponderosa	ponderosa pine	Loamy/Clayey Foothills Mix, Sandy Foothills Mix, Mountain Mix	No
Populus angustifolia	narrowleaf cottonwood	Riparian/Transition Mix	No
Populus deltoides ssp. monilifera	plains cottonwood	Riparian/Transition Mix	No
Populus tremuloides	quaking aspen	Loamy/Clayey Foothills Mix	Yes
Pseudotsuga menziesii	douglas fir	Loamy/Clayey Foothills Mix, Sandy Foothills Mix, Mountain Mix	No
Salix amygdaloides	peachleaf willow	Riparian/Transition Mix	No

Container, Ball and Burlap, Plugs, and Sod Mat Stock

If containerized plants are being considered, it is essential to establish an irrigation plan that includes a permanent irrigation system, temporary irrigation system, or watering plan. The irrigation plan should outline a watering schedule for a minimum of two years. Conversely, if no irrigation is available during the establishment period, no containerized plants should be proposed unless the species is adapted to deep planting to ensure contact with groundwater.

When utilizing containerized plants on-site, it is prudent to strategically position them in designated pockets or clusters to facilitate efficient watering post-construction. Additionally, careful consideration should be given to selecting appropriate container sizes. For instance, deep-rooted containers or tubelings are more suitable when irrigation is limited or temporary. Consulting with plant suppliers can provide valuable insights into selecting the most suitable containers for the project's specific requirements.

Salvaged Plantings and Reuse of On-Site Materials

For native revegetation areas, the reuse of onsite materials should be considered whenever possible. Onsite rock, root wads, tree trunks, and other woody materials can be used for bank stabilization, check dams, revegetation, and other stream restoration approaches. Salvaged plant material has the advantage of having local genetics and allowing the use of plant material that would otherwise be destroyed.
The design should consider existing areas to be impacted by the project to determine if materials located within the project extents should be salvaged for re-use. Coordinate with the NR-Manager to determine if a local host-site is available to harvest healthy plantings from. All salvaged materials for riparian restoration projects should be harvested from within the same watershed as the project.

Cottonwood and willows are a great choice for salvaged plantings. The length of cottonwood and willow poles should be determined by the project specific needs for the live stake to be planted with access to ground water. Willow stakes shall be between three feet (3’) to six feet (6’) in length unless a longer stake is required based on approximate depth to groundwater. Live stakes shall typically be coyote willow (*Salix exigua*) cuttings that are one-half inch (1/2”) to one inch (1”) in diameter. Willow stakes shall normally be planted on 24” to 36” centers in a staggered pattern, but the pattern and spacing may need to be adjusted depending on the availability of groundwater and plant materials.

For Cottonwood poles, the length shall be determined by the project specific needs for the live pole to be planted with access to ground water but are typically at least ten feet (10’) in length. Cottonwood poles shall be plains cottonwood (*Populus deltoides*) or narrow-leaf cottonwood (*Populus angustifolia*) cuttings that are approximately one inch (1”) in diameter. The number and location of pole plantings shall be determined by groundwater conditions and the availability of plant materials. Herbivory protection, such as beaver cages, may be necessary as determined by the initial site assessment or as required by the NR-Manager.

A.1.7 Irrigation

Temporary irrigation needs should be determined during the design phase. Generally, sites that only propose salvaged materials and seed for revegetation do not require temporary irrigation assuming adequate soil preparation and correct seasonal timing of implementation was met. Temporary irrigation or watering during the establishment period shall be required for any projects that propose container stock. Generally, watering at three quarters to one inch (3/4 – 1”) per week is recommended during the April-October growing season depending on rainfall.

However, the water regime of proposed container stock should consider the amount of water typically needed for establishment without overwatering to prevent dependency of the plant on the irrigation system. If an irrigation plan is developed for the project, the irrigation plan should consider zone layout and watering rates shall be verified by the landscape architect and irrigation designer based on site specific characteristics including seed mix watering needs, slope, storm event frequency and intensity, watering zones, and water pressure. Supplemental irrigation of seeded areas shall not displace or negatively impact seed bed preparations, such as by watering truck spray heads/water cannons.

Irrigation water sources can include city domestic (potable) water and non-potable water (reclaimed water) depending on the site location and associated water rights of the property.

Appendix B: Revegetation and Erosion Control Construction Checklist

Standards Section	Description of Standard	Contractor Acknowledgement Date and Initials	Government Representative Approval Date and Initials
2.1	A clear construction schedule was prepared that accounts for proper revegetation timing.		
Comments			
2.2	Existing resources were protected to the best extent practicable.		
Comments			
2.3	Existing topsoil was salvaged and stockpiled properly.		
Comments			
2.4	Interim erosion control BMPs were installed properly and prior to earth moving activities.		
Comments			
2.5	Existing topsoil was sampled correctly, and the correct number of soil samples were collected.		
Comments			
2.5	Existing topsoil was submitted to an accredited soil laboratory and soil fertility testing was performed.		
Comments			
2.6	Topsoil and subsoils were prepared adequately for revegetation, including determination and incorporation of appropriate soil amendments.		
Comments			
3.1	All seed lots were tested and analyzed, and seed lots are free of noxious or invasive non-native weeds.		
Comments			
3.2	Seed was installed during the ideal window and installed in favorable ground and weather conditions.		
Comments			
3.3	Seed was installed at an appropriate depth using the correct equipment based on site terrain.		
Comments			
3.4	Containerized material was sourced, transported, stored, and planted correctly.		
Comments			
3.5	Salvaged plant material was salvaged, stored, and planted correctly.		
Comments			

3.6	Weeds were controlled appropriately during construction.		
Comments			
4.0	An Irrigation Plan or Supplemental Irrigation Plan was developed and implemented, if required.		
Comments			
5.1	An erosion and sediment control plan were developed and complies with local and state standards.		
Comments			
5.2	Erosion control materials were appropriate for the site and installed correctly.		
Comments			
5.2	Appropriate fencing and barriers were installed properly and removed at the appropriate time.		
Comments			
5.3	All punch list items were addressed by the contractor.		
Comments			
5.3	Revegetation success criteria was reviewed and acknowledged by the contractor.		
Comments			

Appendix C: Revegetation and Erosion Control Post-Construction Maintenance Checklist

Example Post-Construction Maintenance Checklist

The following checklist and weed treatment table are provided as examples but should be updated by the NR Manager to be project specific.

Month	Maintenance Task	Date Completed	Contractor Initials	Government Representative Initials
January	Winter water Site inspection			
February				
March				
December				

April	Remove tree wrap			
	Remove weeds, as needed			
	Weed treatment, as needed			
	Re-mulch bed, as needed (if applicable)			
	Site inspection			

May	Fertilize trees and shrubs (approved by NR-Manager)			
	Re-mulch beds, as needed (if applicable)			
	Activate/troubleshoot irrigation system (if applicable)			
	Native grass germination irrigation schedule (if applicable)			
	Prune trees and shrubs, as needed			
	Remove weeds, as needed			
	Weed treatment, as needed			
	Site inspection			

June	Check all trees and shrubs for insect pests			
	Native grass germination irrigation schedule (if applicable)			
	Inspect irrigation system / adjust timing as needed (if applicable			
	Remove weeds as needed			
	Weed treatment as needed			
	Re-mulch beds as needed (if applicable)			
	Site inspection			

July	Inspect irrigation system / adjust timing as needed (if applicable)			
	Native grass root establishment irrigation schedule (if applicable)			
	Remove weeds as needed			
	Weed treatment as needed			
	Re-mulch beds as needed (if applicable)			
	Site inspection			

Month	Maintenance Task	Date Completed	Contract or Initials	Government Representative Initials
August	Inspect irrigation system / adjust timing as needed (if applicable)			
	Native grass root establishment irrigation schedule (if applicable)			
	Remove weeds as needed			
	Weed treatment as needed			
	Re-mulch beds as needed (if applicable)			
	Site inspection			
September	Inspect irrigation system / adjust timing as needed (if applicable)			
	Native grass established, reduce irrigation run time (if applicable)			
	Remove weeds as needed			
	Re-mulch beds as needed (if applicable)			
	Site inspection			
October	Adjust staking of new trees			
	Interseed problematic or bare areas			
	Winterize irrigation sprinkler system (if applicable)			
	Weed treatment as needed			
	Site inspection			
November	Wrap trees (if applicable)			
	Weed treatment as needed			
	Dormant interseeding of problematic or bare areas			
	Winter water			
	Site inspection			

Weed Maintenance Timeline							
	April	May	June	July	August	October	November
cheatgrass							
kochia							
mustard sp.							
musk thistle							
Scotch thistle							
Canada thistle							
hoary cress							
curly dock							
field bindweed							
Other state-listed species							
	Some treatment needed			Focus of treatments			

Attachment E
USAFA Environmental Standards

USAFA ENVIRONMENTAL STANDARDS

PART 1 GENERAL

1.0 Scope

A. The USAFA Environmental Standards identify processes necessary to achieve environmental compliance for contracted work done at USAFA. The requirement for compliance resides in the Regulatory Requirement and not with this document. Air Force Instruction 32-7001, Environmental Management (Section 2.33.10) requires USAFA and 10 CES/CEIEC to identify specific environmental requirements that pertain to all contracts and all work performed on behalf of the United State Air Force.

B. These Standards apply to all contracted work on USAFA, regardless of funding source.

C. Information provided in these Standards does not relieve the Contractor or other personnel from responsibility to comply with all state, local, and federal environmental laws, regulations and operating standards during performance of work on the Air Force Academy. This includes Air Force Directives and Instructions. USAFA ensures Contractor compliance through periodic inspections of the worksite and any material storage sites maintained by the Contractor on Academy grounds. **See Part 5 of this document for a list of regulatory references.**

D. Contractors shall cooperate with the government to take corrective action and clean up required by the Contractor's failure to comply with all state, local, and federal environmental laws, regulations and operating standards during performance of work on the Air Force Academy.

1.1 Environmental Permits, Licenses, Certifications, and Training

A. Contractors shall obtain, at Contractor's expense, all permits, licenses, certifications, and training required to perform the work stipulated in the contract or in-house design and specifications.

B. Contractors shall prepare all documentation required, including notices of intent and permit applications.

1. Contractors must originate all permit applications applicable to its activities and submit them to the Contracting Officer (CO) for review and approval by USAFA Environmental Office.

2. The Contracting Officer will return incorrect or incomplete documents for correction and re-submittal during the contract administrative period.

3. Once approved, Contractors shall submit the documents to the appropriate regulatory agencies.

4. Under no circumstances shall Contractors directly contact the regulatory agency concerning environmental issues for which USAFA may be liable without prior approval from the CO.

PART 2 SPECIFIC REQUIREMENTS

2.0 Hazardous Materials

A. AFMAN 32-7002, Environmental Compliance and Pollution Prevention, defines HAZMAT as: all items covered under Emergency Planning and Community Right-To-Know Act (EPCRA), (Federal, State or Local) tracking requirement covered under the OSHA Hazard Communication Standard, Class I or Class II ODS. It does not include munitions or Hazardous Waste. It does include medical supply items except as exempted under the OSHA HAZCOM Standard, unless the use results in an environmental tracking or reporting requirement.

HAZMAT includes but is not limited to material in the following categories:
Chemicals
Gases: Compressed or Liquefied
Cleaning and Polishing Compounds
Paints, Dopes, Varnishes and related material
Preservatives and Sealing Compounds
Solid Fuels, Dyes, Pest Control Agents
Liquid Propellants Adhesives
Fuel Oils and Grease: Cutting, Lubricating, and Hydraulic

Other Materials as determined by the Hazardous Material Management Process Team

B. All hazardous materials (HAZMAT) brought on site are subject to pre-approval by the USAFA HMMP Team. AFMAN 32-7002, Environmental Compliance and Pollution Prevention provides approval requirements for contractor used HAZMAT.

C. USAFA may prohibit the use of any HAZMAT it deems to be especially hazardous to human health or the environment or may result in excessive quantities of hazardous waste.

D. If USAFA does not approve use of a HAZMAT, USAFA may recommend a list of suitable substitutes; however, the Contractor retains responsibility for finding an acceptable substitute.

E. USAFA promotes waste minimization through source reduction and pollution prevention practices. The Contractor will take appropriate actions to comply with this policy.

F. The Prime Contractor will submit AF Form 3952, Chemical/Hazardous Material Authorization Request for all HAZMAT required for each Project. The Prime Contractor will also submit HAZMAT requirements for any subcontractors on the Contract. The approval process requires approximately 10 working days.

1. The Task Description, Block 18, must fully describe each process to be performed.

2. The Contractor must include a list of hazardous materials used in each process, as well as, a Safety Data Sheet (SDS) for each HAZMAT.

3. 29 CFR 1910.1200 requires the Contractor to maintain a complete written hazard communication program, including labels and forms of warning for chemicals, an up-to-date hazardous material inventory with copies of SDSs for all materials used on the job site, and employee information and training on hazardous chemicals in their work area.

4. All hazardous materials used on USAFA must be tracked via the Air Force approved tracking system and will be managed via bar code labels in order to comply with EPCRA requirements (40 CFR350-472).

G. HAZMAT Usage Reports.

1. The Contractor may report HAZMAT used at any time during the execution of the contract or at least monthly to the HAZMART (email is the preferred method).

2. The report shall include a listing of the assigned barcode label numbers, and date used or disposed. This report may be emailed (LG_Hazmat@usafa.af.mil) or hand delivered to the HAZMART.

H. Final HAZMAT Usage Report

1. The Contractor shall submit a final inventory of all hazardous materials used or disposed since the last hazardous usage report and no later than 10 business days after completion of work.

2. The report shall include a listing of the total quantity of HAZMAT used and a description of its disposition. For example, the Contractor used all of the HAZMAT during contract execution, saved it for future use, or disposed of it as hazardous waste in accordance with Colorado's hazardous waste regulations. See Section 2.2 for a description of hazardous waste management requirements.

I. HAZMAT Handling

1. All hazardous materials must be transported and stored in original containers with manufacturer labels meeting the OSHA HAZCOM requirements found in Title 29 Code of Federal Regulations Part 1910.1200 (29 CFR 1910.1200).

2. All HAZMAT which have been repackaged or dispensed into other than a manufacturer's original container must be clearly labeled in accordance with OSHA HAZCOM requirements. HAZMAT may not be brought on to USAFA without proper, legible labeling.

3. HAZMAT must be used and stored in areas that are free from obstructions or hazards such as tripping hazards, fire, standing water, or pests. All HAZMAT shall be separated in accordance with OSHA Material Handling requirements (29 CFR 1910.176[c]) and OSHA Hazard Communication requirements (1910.1200[b], and 1910.1200[f]).

4. HAZMAT must be stored in containers in good condition, with no leaks or rust.

5. All unused HAZMAT must be removed when the work is completed or when the material is no longer required. Unused HAZMAT may not be transferred to USAFA or its affiliates without the authorization of the HMMP Team.

2.1 Hazardous Waste

A. In coordination with the Environmental Office, Contractors shall properly identify, characterize, manage, and dispose of all hazardous waste (HW) generated from the Contractor's actions on USAFA property.

B. Contractors must dispose of all HW through USAFA's HW management program unless directed otherwise by contract specifications. The USAFA Hazardous Waste Accumulation Site (HWAS) will accept waste produced by contractors for disposal, the waste must be properly packaged IAW Dept. of Transportation (DOT) standards. The HWAS cannot provide HW containers to third-party contractors due to budgeting constraints, also any HW shipped off USAFA by third-party contractors must have someone from the Gov't sign the Hazardous Waste Manifest IAW AFMAN 32-7002 para. 2.14.7.3.

C. If Contractors anticipate generating HW on site during contract performance, it shall prepare a Hazardous Waste Management Plan (HWMP) describing how it will comply with Colorado Department of Public Health (CDPHE) and Environment regulatory requirements and DoD, Air Force, and USAFA policies and instructions related to HW management.

1. Contractors may request a copy of USAFA HWMP from the Environmental

Office to use as a guide in preparing its HWMP.

2. The Contractor shall submit the HWMP to the CO for approval a minimum of 15 business days prior to commencement of work onsite.

3. The Contractor HWMP shall include the following elements:

a) Waste descriptions, waste codes, and estimated quantities of specific hazardous wastes that will be generated on site, such as batteries, paints, solvents, aerosol cans and mercury-containing lamps.

b) Copies of letters appointing Contractor personnel to positions of primary and alternate HW managers.

c) Copies and descriptions of HW training the Contractor's personnel have completed. Contractor personnel shall have completed appropriate training that fully satisfies Federal, State, and local regulatory requirements prior to managing HW.

d) Descriptions of HW storage containers and locations.

D. Contractors, with Environmental Office concurrence, shall determine if wastes generated are hazardous under applicable regulations for listed, characteristic, and universal wastes. The Contractor shall provide the CO and Environmental Office proof of such determination (e.g., SDS, process knowledge and/or analytical results). If Contractors do not have sufficient information to properly characterize a waste as hazardous, then Contractors shall, with Environmental Office concurrence:

1. Arrange for sampling and analysis for proper characterization of the waste.

2. Pay for sampling and analysis costs.

3. Provide the CO and the Environmental Office with documentation of analytical results for each HW generated on site.

E. Contractors shall accumulate HW in compliance with all applicable Federal, state, and local regulations; DoD, AF, and USAFA policies; and in accordance with the Contractor's (USAFA-approved) HWMP.

1. All containers holding HW shall be in good condition & DOT compliant with stored waste, with no leaks or rust and noted on a Weekly Inspection Sheet.

2. All containers holding HW shall be labeled with the words "Hazardous Waste", contents, and the identity of the generator (Contractor).

3. Fluorescent bulbs, batteries, mercury containing thermostats, aerosol cans, and pesticides and other designated Universal Wastes covered under the "Universal Waste Rule" shall be labeled in accordance with Colorado universal waste requirements found in Title 6 Colorado Code of Regulations Section 1007- 3 Part 273 (6 CCR 1007-3 Part273).

4. Used oil shall be labeled only with the words "USED OIL", unless it has been contaminated with solvents or other contaminants that would render it HW.

F. To the maximum extent practical and where cost effective, the Contractor shall recycle HW in accordance with all applicable Federal, State, and local laws and regulations. Hazardous waste recycling/re-use shall be approved by the Environmental Office prior to start of the activity. Any waste recycled or re-used on or off site, over 100 lbs. shall be reported to the Environmental Office, for Air Force Solid Waste metrics.

G. Only authorized USAFA personnel shall sign uniform HW manifests, land disposal restrictions, and bills of lading IAW AFMAN 32-7002 para. 2.14.9.3. All manifests for waste generated on site shall list USAFA's Environmental Protection Agency (EPA) generator identification number.

H. If the Contractor transports any HW off USAFA, it must be licensed to transport HW in Colorado. Transporters of hazardous wastes that operate in Colorado and have a transfer facility are required to obtain an EPA identification number and comply with additional requirements cited at 6 CCR 1007-3, Part263.

2.2 Spill Prevention and Response Procedure (SPRP) Plan

A. Contractors must develop a SPRP plan if it manages, stores, or uses HAZMAT (including fuels) or generates HW. Below is a list of the minimum requirements for development of a SPRP.

1. Contractor name

2. Mailing address

3. Primary and alternate emergency contacts

4. Emergency phone numbers, including fax number, if applicable

5. List of spill prevention and response equipment

6. Description of HAZMAT and HW managed on site

7. Description of HAZMAT and HW storage containers

8. A map showing locations of HAZMAT and HW containers and spill prevention

and response equipment

9. Description of actions the Contractor will take upon discovery of an incident to contain and clean up spills and dispose of spill residue

10. Procedures for notification of USAFA after discovery of an incident (Note: Call 911)

11. Description of how the Contractor shall coordinate and complete any required corrective actions

12. Description of employee hazardous material and spill response training (Training to be provided to employees as required by all applicable Federal, state, and local regulations and copies of employee workplace hazard training program maintained on site at all times)

B. Contractors shall submit the completed SPRP plan to the CO a minimum of 15 business days prior to commencement of work for review and approval.

C. Contractors shall manage, store, and use all HAZMAT and HW (including fuels) in accordance with good engineering practices and implement best management practices in order to prevent spills and releases. Contractors shall report spills to USAFA and execute timely and appropriate actions to contain and cleanup all spills in accordance with the Contractor SPRP plan. USAFA does not authorize or expect Contractors to provide emergency response or clean up actions beyond the level of training of its employees. Once a spill or release of a HAZMAT or HW managed, used, or stored by the Contractor has been contained, USAFA shall determine if additional cleanup is required and the extent of the Contractor's responsibility. Contractors shall be liable for any direct and indirect costs incurred during spill response and clean-up, including but not limited to administrative costs, materials, labor, equipment, shipping, packaging, testing, replacement equipment and materials, and disposal.

2.3 Water Resources

A. Contractors are expected to comply with water resource regulations including, but not limited to, USAFA MS4 permit # COR-042007, Construction General Permit (CGP) # COR-21000F40, National Flood Insurance Program 44 CFR Parts 59,60,65,70, Section 404 and 401 of the Clean Water Act, CDPHE Regulation 32, and CDPS # COG070000. Contractors must coordinate with Environmental to ensure their actions comply with USAFA NPDES permits.

B. Concerning water resource responsibilities, Contractors shall:

1. Comply with all relevant requirements of storm water, municipal, multisector, and individual NPDES permits held by USAFA.

2. Not discharge wastewater or water (including surface discharges and underground injection) that could impact the quality of the surface water or groundwater of Colorado without prior approval of the Environmental Office.

3. Coordinate with Environmental Office to ensure that non-stormwater discharges are covered by an appropriate permit prior to authorizing the discharges, or determine if permitting is required.

4. Coordinate with the Environmental Office to obtain required permits not already in place at USAFA including permits to cover discharges to surface water, land application discharges that impact groundwater, de-watering discharges, 404 disturbances, and underground injection activities.

5. Apply for a septic system installation permit from CDPHE for septic systems or holding tanks that receive more than 2,000 gallons per day.

6. Apply for a septic system installation permit from the El Paso County Department of Health for any septic systems or holding tanks.

C. Concerning construction projects that shall disturb one (1) or more acres, Contractors shall:

1. Review and comply with EPA 2022 NPDES General Permit for Discharges from Construction Activities (COR12000F).

2. Prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) for approval by the Environmental Office. The SWPPP must comply with requirements described in the 2022 NPDES General Permit for Discharges from Construction Activities (COR12000F) listed in Section 7 (Stormwater Pollution Prevention Plan).

3. Once the SWPPP has been approved, submit an electronic Notice of Intent

(NOI) to the US EPA. Prime contractor will be the permittee or co-permittee. Earth disturbing activities may commence as soon as the contractor receives an individual permit number from the EPA, usually 10-14 days after submitting the N.O.I.

4. Submit an electronic Notice of Termination (NOT) to EPA after USAFA Notice of Termination form is signed by the Environmental Office and contractor is advised to proceed.

5. Keep all SWPPP documents in their files and available for inspection upon request for 3 year after the NOT is filed.

D. Concerning construction projects that shall disturb less than one acre, Contractors shall:

1. Install perimeter controls or other control measures to prevent sediment from leaving the site.

2. Protect storm drain inlets to prevent sediment from entering active storm drains.

3. Protect large stockpiles

4. Immediately clean up spills of fuels, lubricants, and other HAZMAT.

5. Coordinate with Environmental Office if the project experiences excessive erosion, sediment discharges, or disturbs over an acre.

E. Projects shall be designed to comply with the USAFA NPDES Municipal Separate Storm Sewer System (MS4) permit and Energy Independence and Security Act Section 438.

1. Post-construction storm water runoff from project sites shall be restricted to the predevelopment hydrology for projects adding 5,000 square feet of impervious surface or greater. Devices/designs to comply with this condition shall be approved by the Environmental Office.

2. Permanent Water Quality Treatment Devices shall be consistent with criteria presented in the Colorado Springs City/County Storm Water Drainage Control Manual.

F. To ensure compliance with other Clean Water Act requirements, Contractors:

1. Shall not discharge any domestic, construction and/or industrial waste (including any hazardous material or hazardous waste) to the environment, sanitary or storm water sewer system without first securing approval from the Environmental Office. Such materials include, but are not limited to the following:

a) Glycol-containing wastes drained from heating, ventilation, and air conditioning facilities

b) Cooling tower, chiller solutions, and boiler blow-down

c) Fluids generated from in-situ or slip-lining sewer line repairs

d) Swimming pool and pool filter backwashing wastewater

e) Super-chlorinated solutions from drinking water line or other repairs and replacement

f) Septic and holding tank waste

g) Oil/water separator residue and grease trap residue

h) High-temperature hot water from line replacement or repair

i) Any other wastewater that may contain pollutants

2. Shall not use surface or underground water supplies for any contract-related activities without approval from the Environmental Office.

3. Shall not dispose of dredged or fill materials in wetlands, dispose of excavated materials into Waters of the US, use fill for road crossings, or dispose of similar dredge or fill materials in floodplain areas without a permit obtained in coordination with Environmental Office.

4. Shall not discharge groundwater to Waters of the State from trenches, pits etc. during construction without a dewatering permit from EPA or CDPHE.

2.4 Special Pollutants – Asbestos, PCBs, Lead-Based Paint

A. In the design or planning phase of a construction, services, or operations and maintenance project, the Contractor's architect or engineer shall schedule for a complete survey of the entire project area, in order to determine whether there are hazards associated with asbestos (ACBM), polychlorinated biphenyls (PCBs), or lead-based paint (LBP). These surveys shall be conducted at the expense of the project. If hazards are identified, necessary abatement and disposal procedures shall be incorporated into contract documents and in all Requests for Proposal. All costs associated with meeting the requirements of the Federal, State, and local regulations are the responsibility of the Contractor unless otherwise noted in contract documentation. *NOTE: Projects which do not require AE design services must also comply with the requirements of CCR 8 and 5 CCR 1001 to determine if asbestos or lead-based paint are present and may be disturbed as a result of Contractor's actions.*

B. All asbestos surveys/inspections must be conducted in accordance with the requirements of Colorado Code of Regulations (CCR) 8 Part B – Asbestos, paragraph III.A and IV. C. Personnel conducting the Survey/Inspection shall be certified by the State of Colorado in accordance with paragraph III.A.1.a. Reports documenting the Survey/Inspection shall include as a minimum the information required by the Asbestos Hazard Emergency Response Act (AHERA).

C. All LBP surveys/inspections must be conducted in accordance with Colorado's LBP regulations codified at Volume 5, 5 CCR 1001, 1001-23, Regulation 19, EPA's LBP regulations codified at 40 CFR 745, and the US Department of Housing and Urban Development Guidelines for Evaluation and Control of Lead-based Paint Hazards in Housing.

D. Contractors shall inform the CO, or in the event of an emergency, the Environmental Office, of the presence of asbestos, LBP, or PCBs not previously identified within the project area. The CO shall evaluate the extent to which there are cost impacts to abatement and disposal and take necessary steps to resolve the issue.

E. Contractors shall be responsible for ensuring equipment or materials brought on USAFA do not contain PCBs, asbestos, or LBP. Contractors shall be required to obtain prior approval from the Environmental Office for an exemption to this requirement.

F. Contractors shall test construction debris for lead using the Toxicity Characteristic Leaching Procedure (TCLP) and submit analytical results to the CO or Environmental, as applicable. The Contractor shall use sampling procedures and analytical methods consistent with EPA guidance. The results of the analysis shall be reviewed by the Environmental Office and filed in the project folder. Disposal of lead-containing material classified as hazardous waste shall be consistent with requirements shown in Section 2.1.

G. If asbestos abatement is required, Contractors shall submit a report documenting the amount and location of asbestos removed in addition to all waste manifests generated during the course of the project, to the CO and the Environmental Office, as applicable.

H. Contractors shall immediately report to the Construction Inspector or Contract Manager, accidental releases of asbestos, PCBs, or LBP that occurred as part of performance of the contract. The Construction Inspector or Contract Manager will report these releases to the CO and the Environmental Office.

I. Copies of all special pollutant surveys and remediation projects must be submitted to the environmental office.

2.5 Petroleum, Oils, and Lubricants (POLS)

A. The staging of tanks for vehicle and equipment refueling requires the approval of the CO and the Environmental Office.

B. Follow all regulatory guidance from AFMAN 32-1067, Storage Tank Compliance and 7 C.C.R. 1104-14 Storage Tank Compliance.

C. Contractors shall prepare a SPRP Plan according to Section 2.3 and submit it to the CO and Environmental for approval.

D. All fuel and oil storage containers with a capacity of 55 gallons or more must have secondary containment sized to hold the capacity of the largest container in it. Secondary containment for containers stored outside without cover must include additional freeboard volume for precipitation.

E. Contractors will keep and maintain spill containment materials (i.e. spill kits) near all oil storage areas.

F. During fuel or oil transfers, Contractors must use spill containment devices and have additional spill containment materials available. Potential paths to navigable waters (i.e. storm drains, stormwater channels) near to the transfer area will be completely blocked for the entire duration of the transfer.

G. Contractors shall not apply oil to roadways or other surface areas for dust suppression.

H. Water accumulated in secondary containment with an oil sheen may not be released. The Contractor will coordinate with the Environmental Office for its proper disposal. If the water has no apparent sheen or odor, it can be discharged to the environment. The Contractor will maintain a log documenting every discharge of uncontaminated water to the environment.

I. Aboveground POL storage tanks must be Underwriters Laboratory-approved, double-walled tanks meeting requirements of Colorado aboveground storage tank regulations (7 C.C.R. 1104-14).

J. Contractors shall comply with the OSHA HAZCOM Standard cited at 29 CFR1910.1200 and must comply with labels and other forms of warning, SDSs, and training.

K. Contractors shall not conduct routine servicing of vehicles, such as oil changes or brake fluid changes, on USAFA property.

L. Contractors who generate used oil shall comply with Colorado's used oil management standards (6 CCR 1007-3 Part 279) and must:

1. Store used oil only in compatible tanks and containers

2. Keep tanks and containers in good condition and free of leaks

3. Label tanks and containers with the words "USED OIL"

4. Stop, contain and cleanup spills or releases to the environment

5. Use a transporter licensed by Colorado to transport used oil when shipping used oil off site.

6. POLs at USAFA is subject to Colorado's Oil and Petroleum Spill Prevention Requirements (7 CCR 1101-14) including but not limited to the following reporting requirements:

a. Contractors must report a release of POLs that enters or may enter "Waters of the U.S." including surface waters, groundwater, dry gullies, or storm sewers leading to surface waters to Environmental immediately.

b. Contractors must report releases of POLs to land greater than 25 gallons or any oil release to waters of the US to Environmental immediately.

M. Contractors shall not mix used oil with characteristic hazardous waste (e.g. gasoline) because the mixing constitutes hazardous waste treatment and requires a permit (6 CCR 1007-3, Part 279.10 (b) (2)(ii)).

N. Contractors storing an aggregate of 1320 gallons or more of oil as defined by 40 CFR 112.2 must prepare and implement a Spill Prevention, Controls, and Countermeasures Plan (SPCC) as required by 40 CFR 112. Only containers 55 gallons or greater will be counted toward the aggregate storage. The Plan must be submitted to and approved by the Environmental Office, and fully implemented before work can begin. All contractors who handle oil will be trained according to 40 CFR 112.7(f).

2.6 Solid Waste

A. Contractors shall complete a monthly Solid Waste Diversion Report for Construction and Demolition (C&D) available from Environmental for any solid waste generated on USAFA, and submit the completed form to the Contracting Office, as described in the submittal register.

B. Prior to start of work, or during the contract administrative period, Contractors shall provide the Environmental Office with a plan identifying the quantity, type and disposal method for any medical waste.

C. The medical waste plan must address the following issues:

1. Contaminated reusable sharps and other regulated wastes are required to be placed in puncture resistant, color coded, leak proof containers, as soon as possible after use and until properly reprocessed.

2. Specimens of blood or other potentially infectious materials are required to be placed in a container that prevents leakage during collection, handling, processing, storage, transport, or shipping and specific labeling and handling requirements are to be followed (29 CFR1910.1030[d]).

3. Contractors must also comply with infectious waste packaging, storage and labeling requirements specified in Colorado's solid waste regulation 6 CCR 1007-2-13.8.

D. Contractors shall recycle all solid waste where practicable, to include bulky wastes and demolition waste reporting it to Environmental on the Solid Waste Diversion Report for Construction and Demolition (C&D). Solid waste that cannot be recycled must be crushed to minimize the volume of waste.

E. Scrap tires shall only be disposed of at solid waste disposal facilities that are approved to manage scrap tires (6 CCR1007-2-10.1).

F. Contractors shall store solid wastes only in appropriate containers and keep lids closed to prevent releases to the environment.

As identified in the Solid Waste Diversion Report for C&D and to the extent practicable, Contractors shall collect compostable materials (organics, vegetation, grass, wood debris, etc.) and re-use and recycle. Approval to re-use or store materials at the compost site must be received from the Environmental Office prior to the activity.

G. Contractors shall dispose of solid waste only at facilities holding valid regulatory permits to manage the waste. Recycling and re-use facilities on or off the installation shall be approved by the Environmental Office.

2.7 Green Procurement

A. Design Contractors shall complete the design affirmative procurement form available from Environmental, which identifies recycle-content materials that shall be used in the design, and certifies that the Design Contractor has evaluated recycled- content alternatives. This document will be included in the scope ofwork package prior to 65% design review.

B. Construction Contractors shall complete the construction affirmative procurement form available from Environmental, which identifies recycle-content materials that shall be purchased for construction, and shall match the design affirmative procurement form list of recycle-content material identified by the Design Contractor. This document shall be completed and returned to Environmental during the administrative period of the contract.

2.8 Air Quality

A. Contractors shall remain in compliance with all Federal, State, local, DoD and Air Force (AFMAN 32-7002) Air Quality requirements.

B. For projects disturbing more than one acre, but less than 25 acres, for less than six months duration, Contractors shall submit a permit application to El Paso County with copies submitted to the Environmental Office. For projects disturbing more than 25 acres, or disturbing an area of any size for a duration longer than six months, the Contractor shall submit an air pollution emission notice (APEN) along with associated fees to CDPHE. A copy of the APEN will be submitted to the Environmental Office.

C. Any equipment or activity that emits or has the potential to emit pollutants or that disturbs solid or liquid materials, which can become airborne, is a source of air pollution that may require a permit. Activities with anticipated air emissions include but are not limited to painting, stripping, cleaning with degreasers or solvents, material hauling, demolition, sand blasting, use of fuel-burning equipment (other than motor vehicles), welding, use of volatile organic compounds or ozone-depleting chemicals (ODCs), and remediation activities. Contractors shall obtain approval for use of hazardous materials as identified in section 2.0 Hazardous Materials. Incomplete documentation submitted will prolong the administrative period.

D. If air emission estimate for criteria or hazardous air pollutants exceeds threshold levels (as defined by 5 CCR 1001-5: Regulation No. 3) the Contractor shall complete an APEN and/or construction permit applications required by CDPHE, Air Pollution Control Division (APCD). Contractors shall submit the completed APEN(s) and/or construction permit application(s) to CDPHE and provide a copy to the Environmental Office.

E. Contractors shall ensure all company-owned and employee owned gasoline and diesel vehicles which shall be driven on USAFA comply with the emissions inspection requirements of CDPHE 5 CCR 1001-13: Regulation No. 11 (Motor Vehicle Emissions Inspection Program) and 5 CCR 1001-15: Regulation No. 12 (Reduction of Diesel Vehicle Emissions).

F. Open burning on USAFA is prohibited.

G. Contractors shall create no noxious odors that violate Colorado's odor emissions regulation (5 CCR 1001-4: Regulation No. 2).

H. Contractors shall ensure any equipment containing ODCs are operated and maintained in accordance with Colorado's Control of Emission of Ozone-Depleting Compounds requirements (5 CCR 1001-19: Regulation No.15). All Contractors and subcontractor employees servicing ODC containing equipment shall be trained and certified in accordance with Regulation No. 15. Contractors must submit copies of

technician and equipment certifications to the Environmental Office prior to start of work. All Class I ODC use is prohibited at USAFA per AFMAN 32-7002. Any requests for use of Class II ODC must be submitted in writing to the CO for review and approval, otherwise, the use of Class II ODS will be prohibited.

I. Employee certifications and an ODC Service Plan that identifies type of service, ODSs used, and recovery information shall be submitted to the Environmental Office prior to start of work.

J. Contractors shall take active steps to prevent evaporation of all solid or liquid materials that have potential to become airborne including but not limited to fuels, solvents, paints, and other volatile chemicals under the Contractor's control. All containers holding solid or liquid materials that have potential to become airborne shall be closed at all times, except when adding product to or removing product from the container.

K. Contractors shall fully comply with the conditions of all applicable Colorado Air Pollution Prevention and Control Act and regulations as identified in 5 CCR 1001: Regulations 1-19.

L. When a Fugitive Particulate Control Plan is not required by 5 CCR 1001-3: Regulation No. 1, Contractors shall perform all fugitive particulate control measures necessary to prevent emissions of over 20 percent opacity or visible emissions that cross USAFA's property boundaries. Contractors shall maintain a daily log of fugitive particulate emissions that exceed 20 percent opacity or that cause visible emissions. Contractors shall maintain a copy of this log on site at all times and shall make it available for review to the Environmental Office upon request.

M. Contractors shall not utilize cutback asphalt or any coating included in the definition of cutback asphalt as defined at 5 CCR 1001-9: Regulation No. 7 during the months of March through September unless the cutback asphalt is used solely as a penetrating prime coat or if the user can demonstrate to the CDPHE APCD that under the conditions of its intended use, there will be no emissions of volatile organic compounds to the ambient air.

N. Contractors shall not apply sand or gravel to USAFA roads without obtaining prior written approval from the Environmental Office. Similarly, in-house forces shall not apply sand or gravel to USAFA roads without obtaining prior written approval.

O. Contractors shall properly re-vegetate all disturbed land to prevent fugitive particulate emissions following the completion of work.

P. Contractors shall provide to the Air Quality Manager data plate information (i.e. a photograph) and install date for all new permanent external combustion equipment (boilers, water heaters), internal combustion engine equipment (generators, fire pumps), and equipment with a refrigerant capacity of 50 pounds or more. Data plate information must include, at

minimum, model number, serial number, and manufacture date. For external combustion equipment, provide the rated heat capacity. For internal combustion equipment, provide the rated *engine* power (not the alternator or genset power). For cooling equipment, provide refrigerant charge for each circuit (for cooling equipment with charge > 50 lbs.)

Q. When permanent internal combustion engines (generators, fire pumps) will be installed, contractors shall provide to Air Quality Manager certifications or other records that demonstrating the engine's compliance with the Clean Air Act.

2.9 Natural Resources

A. Fish and Wildlife

1. The federally threatened Preble's Meadow Jumping Mouse (PMJM) occurs on USAFA, and the base has a Conservation Agreement with the US Fish and Wildlife Service (USFWS) to protect PMJM and mitigate any adverse impact to its habitat. PMJM habitat is generally defined as riparian habitat (woody vegetated streams and drainage ways) and upland areas within 300-feet of the 100-year floodplain of a stream. In accordance with the Conservation Agreement, all activities that will cause habitat disturbance must comply with the following conditions:

a. Workers shall be instructed by USAFA personnel on procedures that must be followed to limit or prevent habitat impacts within and adjacent to the work area.

b. Work shall be coordinated with and supervised by USAFA personnel familiar with PMJM and the requirements of the Conservation Agreement.

c. The limits of any pre-approved ground disturbing activities shall be delineated with fencing or other visible barrier to prevent inadvertent impacts to habitat outside the approved construction footprint.

d. In the event that a PMJM (dead, injured, or hibernating) is observed during any activities, the USAFA Natural Resources office shall be notified immediately to determine the necessary course of action.

2. Harassment of all wildlife is strictly prohibited.

3. All work shall strictly adhere to the environmental requirements for protecting wetlands, controlling erosion and sediment, and managing storm water to protect wildlife, vegetation, and aquatic habitats.

B. Vegetation Management

1. Procedures for site restoration, reseeding, and erosion control specific to USAFA and Farish Recreation Area have been developed by the USAFA Natural Resources office. Contractors shall consult with the Natural Resources office, Bldg. 9030, for guidance in implementing a reclamation plan for disturbed project areas. Any deviation from the USAFA Erosion Control, Re-vegetation, and Tree Care Standards shall be approved by both Natural Resources and the Contracting Officer. Contractors should pay particular attention to the requirements for seedbed preparation, topsoil, native seed mixes and planting techniques, and erosion control materials and installation.

2. Contractors shall clean their equipment prior to coming on base and shall use only certified weed-free hay for revegetation to prevent introducing noxious weeds.

3. Contractors shall minimize, to the extent possible, creating new roads and trails around the project area. Any new trails or roads shall be rehabilitated and revegetated as part of the completed project.

4. Protocol for trees transplanted from construction footprint, and for trees moved into project areas is addressed in the USAFA Erosion Control, Re-vegetation and Tree Care Standard.

5. To the extent possible, trenching shall be located as far as possible from existing trees. Because roots extend as far as three times the tree height and are located primarily within the top 18" of soil, trenching can cause substantial damage to trees, especially under drought conditions. Absolutely no trenching is acceptable directly under tree crowns.

C. Construction Timber

1. All projects on USAFA, including Farish Recreation Area, for which removal of trees is a requirement shall be coordinated with and approved by Natural Resources. In accordance with Department of Defense Instruction (DODI) 4715.3, DODI 7310.1, and AFI 32-7064 Section 8.3, forest products shall not be given away, abandoned, destroyed, or used to offset contract costs.

2. All merchantable wood [tree stem wood equal to or greater than 4 (four) inches in diameter] that results from projects on USAFA proper shall have all limbs removed and be delivered to the Natural Resources wood yard at Building 9030. Such deliveries shall be coordinated with Natural Resources to allow access to the wood yard. Leaving wood outside the wood yard fence is strictly prohibited. Disposition of products from projects at Farish Recreation Area shall be determined by Natural Resources personnel. If Contractor personnel wish to purchase wood from a project on the Academy or Farish on site, they may request a permit from Natural Resources. The price will be the current rate for

field firewood. Payment must be made by check before any wood is removed from USAFA property.

3. All limb wood and tree tops less than four inches in diameter shall be identified in the Solid Waste Determination, and off-site recycling shall be approved by the Contract Officer prior to start of work. There is no on-site recycling available on the Academy. Limb wood may be chipped and spread on site to a depth not to exceed 3 inches, with chips spread at least 30 feet from a road, trail or building. Chips shall not be spread in improved or mowed areas. Projects involving small amounts of limb wood may dispose of the wood by scattering it on-site if prior coordination has been made with the Natural Resources. In such cases, the limbs shall be moved at least 50 feet from buildings, roads, or major trails, and lopped and scattered so as not to exceed eight inches above ground level. Disposition of all wood products from Farish Recreation Area shall be determined by Natural Resources.

4. Any and all stumps that are to remain on site shall be cut as close to ground level as practical, not to exceed two (2) inches above ground level within 25 feet of buildings, roads or major trails, and four (4) inches above ground level elsewhere. Tree branches that obstruct the movement of equipment or are in need of removal shall be cut to the trunk or to an acceptable branch, according to proper pruning procedures. The remaining portions of limbs broken by the passage of equipment shall also be cut to the trunk or to an acceptable branch. Flush cuts are not allowed, as these promote decay of the tree stem. Pruning procedures are outlined in Appendix A of the USAFA Erosion Control, Re-vegetation and Tree Care Standards.

5. Any and all stumps with attached root masses shall be disposed of off USAFA property unless specifically authorized by a representative of Natural Resources. Proper disposal of such stumps is the exclusive responsibility of the Contractor or other entity responsible for the project.

6. Removal of forest products without a permit from USAFA or Farish Recreation Area constitutes theft of government property and shall be punished under the applicable laws or regulations.

7. In the event of a bona fide emergency outside of normal duty hours, trees may be removed, if absolutely necessary, without consulting Natural Resources. All other provisions remain in effect with regard to disposal of wood products at the earliest opportunity.

8. Contractor will contact Natural Resources as soon as possible if any transplantable trees (generally up to 20 feet) will have to be removed during construction. Natural Resources will attempt to salvage these trees by transplanting to an alternate location on the installation, or through sale to the public.

9. Refer to the USAFA Erosion Control, Re-vegetation and Tree Care Standards for additional information and requirements.

2.10 Cultural Resources

A. Facility Treasures

1. The Cadet Area is a National Historic Landmark (NHL) district and most of the Cadet Area facilities are listed on the National Register of Historic Places (NRHP). Contractors and government forces must exercise "…ample care to the 50 plus year old facilities…to support the AFA's mission— "…to educate, train, and inspire men and women to become officers of character motivated to lead the United States Air Force in service to our nation."

2. If work is to be done on a facility listed on, or eligible for listing on, the NRHP, a record of completion of Section 106 consultation/letter of "no adverse effect" from the Colorado State Historic Preservation Office will be in the project folder. Work must not begin without this letter or a written memorandum from the Cultural Resources Manager (CRM) that such coordination is not necessary.

B. Archaeological or Paleontological Finds

USAFA has many cultural resources, artifacts, archaeological sites, Native American sacred sites and cultural areas, and these historic sites and structures are fragile. All Contractors and government personnel must take cake to avoid harming them. Items will be left undisturbed and may be protected by establishing a 100 foot perimeter around the site and cordoning it off to prevent damage. No materials will be moved or removed within, or surrounding, the work site.

Although USAFA may receive concurrence from the CO SHPO and other parties about its proposed undertakings at many points in the compliance process, USAFA should also maintain the necessary resources to handle an unanticipated discovery.

An unanticipated discovery is defined as a discovery (usually archaeological) made during a construction project in an area that has already been adequately surveyed or deemed as not requiring survey (with CO SHPO concurrence), and the unanticipated discovery in question was not found during that survey. Examples of such discoveries could include structural remains, individual or clusters of artifacts, paleontological specimens or deposits, or human remains.

Procedures:

1. If previously undetected archaeological resources are discovered during project activities, the USAFA personnel or contractor responsible for implementing the work will immediately stop work and notify the CRM, who will take steps to

minimize impact to the resource.

2. No media or news agencies will be notified of the discovery and all information and details regarding the discovery will be official use only unless deemed releasable by the appropriate USAFA government personnel.

3. If the remains are potentially eligible for the NRHP, the CRM will notify the Departmental Consulting Archeologist (DCA) of the NPS, Archeological Assistance Division in writing of the find, pursuant to the requirements of the AHPA (16 U.S.C. 469).

4. The CRM will notify the CO SHPO and ACHP in writing within 48 hours of the discovery, to solicit their comments (36 CFR 800.13(b) (3)).

5. The stoppage of work is not required by 36 CFR 800.13; however, the CRM is reasonable for avoiding unnecessary impacts to the identified resource(s) and ensuring proper identification and notification procedures are followed.

6. Pursuant to the requirements of the AHPA, the CRM may request that the NPS record the information that is in danger of being lost, or may direct that this work be undertaken by a qualified archeologist for USAFA.

7. After notification, the NPS may undertake the recordation of information it feels is significant, and in danger of being lost after notifying USAFA in writing of its decision to do so.

8. Any archeological investigations carried out by USAFA on such archeological sites will be carried out in consultation with the CO SHPO and under the direct supervision of an archaeologist who meets, at a minimum, the Secretary of Interior's Professional Qualifications Standards (48 FR 44738-9).

9. USAFA shall provide the CO SHPO and ACHP a copy of the final report detailing the investigations.

Discovery and Removal of Human Remains

If bones are discovered in the course of excavation on the base, the work resulting in the discovery shall stop, and the individual responsible for implementing the work will immediately notify the CRM of the find. No media or news agencies will be notified of the discovery and all information and details regarding the discovery will be official use only unless deemed releasable by the appropriate USAFA government personnel.

The CRM will then ensure that the following procedures are implemented:

1. The Air Force Office of Special Investigations (AFOSI) will be notified.

2. Security Forces will establish security for the remains.

3. The CRM will determine (with the aid of AFOSI, a coroner, or a physical or forensic anthropologist) if the remains are human, and whether or not they are associated with an archeological deposit.

4. If the remains are not human, and not associated with an archeological deposit, work may continue.

5. If the remains are human, AFOSI with the aid of the coroner, or a physical or forensic anthropologist, will determine if the remains are recent or ancient.

6. If the human remains are modern, the matter becomes the responsibility of law enforcement officials who will determine when project activities may resume.

7. If the human remains are not modern, and not Native American, the provisions described above for inadvertently discovered archeological remains are to be followed.

8. If the human remains have been determined to be Native American, the provisions of NAGPRA apply, and the regulations outlined in 43 CFR Part 10 shall be followed.

9. Immediately upon notification that Native American human remains have been found at USAFA, the CRM will ensure that Security Forces protection of the site will continue, and notify by phone, or in writing within one working day, 10th ABW, the Federal Preservation Officer 10 CES, the CO SHPO, and the tribal representatives of all interested Native American tribes. The CRM will initiate the consultation process outlined in 43 CFR Part10.

The project may proceed 30 days after certification of notification is received by 10th ABW, or the Federal Preservation Officer 10 CES, or the relevant tribes (see NAGPRA 225 U.S.C. 3002 [d]); or at any time after a written, binding agreement has been executed by USAFA and the tribes that includes a recovery plan for the removal, treatment, and disposition of the human remains, and any associated cultural objects.

1.11 Environmental Management Systems (EMS)

1. Contractors shall participate in USAFA's EMS by the way of understanding, implementing, and integrating the USAFA Environmental Commitment Statement (Attachment 2) to all areas of work.

PART 3 INSPECTIONS

3.0 INSPECTIONS

Environmental conducts routine announced and unannounced inspections during the performance of the contract to ensure the regulatory requirements are met. Non-compliance or deficiencies noted during the inspection shall be appropriately corrected, and submitted in writing to the contract office. USAFA shall perform follow up visits to verify completion of corrective actions. Non-compliance could lead to complete halt in project activities, depending on the severity of the violation.

PART 4 POINTS OF CONTACT

4.0 Environmental Points of Contact

Performance Requirement/Program Area	Phone
Spill Prevention and Response Procedure Plan	719.333.5826
Hazardous Materials	719.333.5826
Hazardous Waste	719.333.3852
Waste Water and Storm Water	719.459.4548
Wetlands, Waters of U.S./State	719.459.4548
Toxic Substances (Asbestos, PCB, LBP)	719.333.5826
Pesticides	719.459.4548
Petroleum, Oils, and Lubricants (POLs-Tanks)	719.333.5826
Solid Waste	719.333.5826
Air Quality	719.333.5826
EMS	719.333.6716
Natural Resources	719.333.3308
Cultural Resources	719.333.0897

If you are unable to reach the necessary point of contact, call the Environmental Compliance Supervisor, 719.333.6392. If the concern is an **environmental emergency**, call the Emergency Response number at 911 and ask for immediate assistance.

PART 5 REGULATORY INFORMATION

5.0 REFERENCES – NOTE: THESE REFERENCES ARE PROVIDED FOR INFORMATION ONLY AND ARE NOT ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING THE WORK COVERED BY THE CONTRACT IN COMPLIANCE WITH ALL APPLICABLE STATE, LOCAL, AND FEDERAL ENVIRONMENTAL LAWS, REGULATIONS AND OPERATING STANDARDS DURING PERFORMANCE OF WORK ON THE AIR FORCE ACADEMY. THIS INCLUDES AIR FORCE DIRECTIVES AND INSTRUCTIONS.

A. United States Environmental Protection Agency (EPA) Regulations:

1. Resource Conservation and Recovery Act (RCRA) - 40 Code of Federal Regulation (CFR) Parts 148, 244, 260, 261, 263, 264, 265, 266, 268, 270, 271, 272, 273, 279, 280, 281, 282, 355 and 745.

2. Clean Water Act – 40 CFR Parts 112, 122, 123, 124, 125, 129, 130, 131, and 401–471.

3. Clean Air Act – 40 CFR Parts 50, 52, 61, 63, 68, 70, 71, 86-89, 745.

4. EPCRA – SARA Title III Sections 301, 302, 303, 304, 311, 312, and 313.

B. Occupational Safety and Health Administration (OSHA) Regulations:

1. Hazard Communication – 29 CFR 1910.1200

2. Hazardous Waste Operations and Emergency Reponses (HAZWOPER) – 29 CFR 1910.120

3. Material Handling – 29 CFR 1910.176

4. Toxic and Hazardous Substances – 29 CFR 1910.1030

C. Department of Transportation (DOT) Regulations:

1. 49 CFR Parts 171 – 173

D. Other Federal Regulations:

1. National Historic Preservation Act and related Acts

2. The American Indian Religious Freedom Act

3. Archeological Resources Protection Act

4. The Native American Graves Protection and Repatriation Act

5. Endangered Species Act

6. Executive Order 13101, Greening the Government through Waste Prevention, Recycling and federal Acquisition

7. Executive Order 13148, Greening the Government through Leadership in Environmental Management

E. State of Colorado Regulations:

1. Air Pollution Prevention and Control Act – 5 Code of Colorado Regulation (CCR) 1001 Regulations No. 1 -19

2. Hazardous Waste Regulations – 6 CCR 1007-3 Parts 260 –279

3. Water Quality and Wastewater Regulations – 5 CCR1002

4. Tank Regulations – 7 CCR1101-14

5. Oil and Petroleum Spill Prevention Regulations – 7 CCR 1101 –14

6. Solid Waste Regulations – 6 CCR 1007 –2

7. Special Pollutants – 5 CCR 1001 and 6 CCR1007

8. Pesticides, Herbicides, and Fungicides – 8 CCR 1203

F. Department of Defense (DoD), United States Army Corps of Engineers (COE), Air Force Instructions (AFI), Policies, Guidance Documents, Memoranda, USAFA Regulations and associated guidance documents:

1. COE document EP 1165-2-314 (Flood Proofing Regulations).

2. EPA Document 832-R-92-005, Storm water Management for Construction Activities.

3. Department of Defense, Measure of Merit, Solid Waste Management.

4. US Department of Housing and Urban Development Guidelines for Evaluation and Control of Lead-based Paint Hazards in Housing.

5. AFI 32-7001, Environmental Management.

6. AFMAN 32-7002, Environmental Compliance and Pollution Prevention

7. AFMAN 32-1067, Water and Fuel Systems

8. USAFA Asbestos Management Plan

9. USAFA Hazardous Waste Management Plan

10. USAFA Integrated Solid Waste Management Plan

11. Flood Plain Regulations for Flood Plain Management - COE document EO 1165-2-304, 1976

12. El Paso County Policy Plan

    a. City/County Drainage Criteria Manual (City of Colorado Springs/El Paso County, Colorado) and updated storm intensity curves dated January 7, 2003.

    b. El Paso County Individual Sewage Disposal System Regulations.

Copies of these regulations are available on the internet or from the organizations listed. It is the responsibility of all Contractors associated with the project to review and understand these regulations.

Attachment F

Military Family Housing Community Handbook

Attention Residents

It is that time of year again, the bears are awake and looking for easy food. We ask that everyone please do their part by making sure the small lids as well as the larger lids are clipped and secure after each time you dump the trash. This will make it to where the bears cannot get into our dumpsters and they will move on.

When the small lids or large lids are left opened and unclipped, it is easy access for our resident bears to peel one of these lids back and make a complete mess of things. It is also very unhealthy for any bear to eat human foods or trash.

We understand that some dumpsters are already damaged and cannot be latched, please know that we are working on getting these issues resolved as quickly as possible.

We have also noticed an abundant amount of trash in our wooded areas. Please help keep our grounds clean by making sure your garbage bags are tied up and that the locks are secured on the dumpsters.

We appreciate your cooperation.

Thank you,

- Management

If you have an immediate bear problem, call the Security Forces Law Enforcement Desk at 333-2000. To report bear sightings, please call Natural Resources at 333-3308 or e-mail "10 CES/CECN (Bear Watch)"

4609 W. Bighorn Drive, USAFA, CO 80840

GOT BULK?

FREE. SIMPLE. WEEKLY.

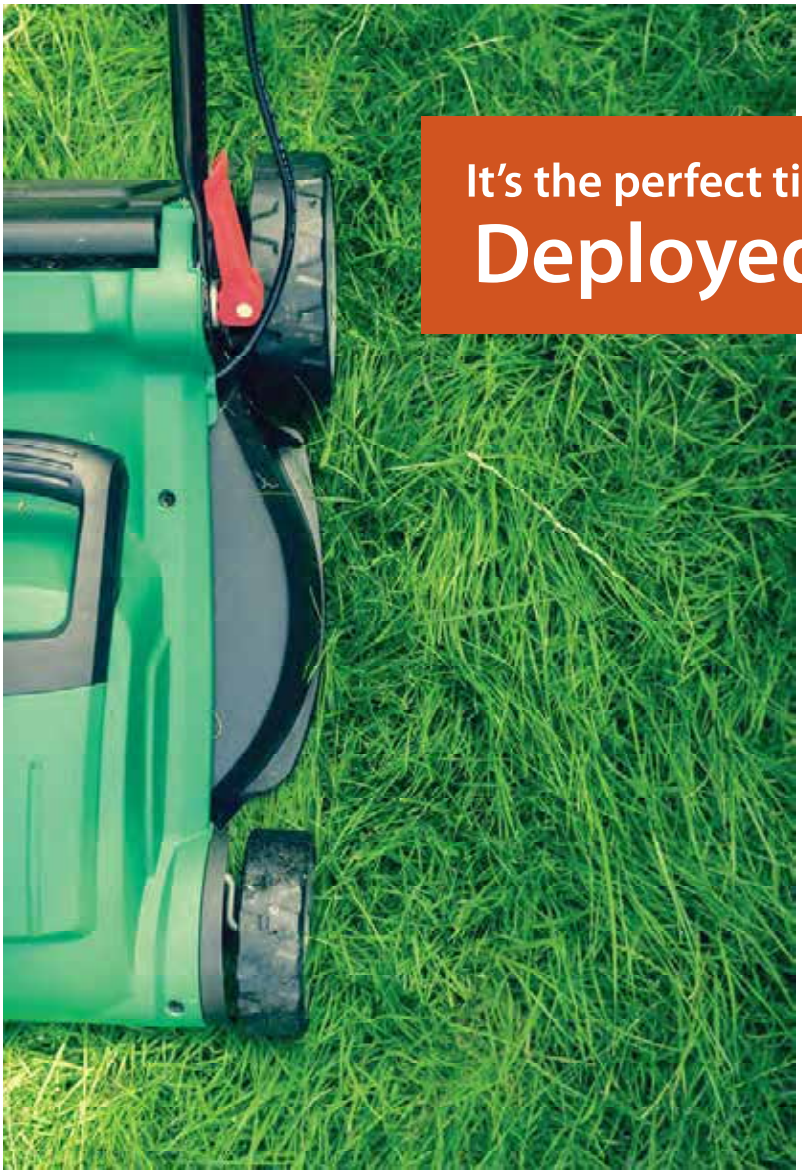
Call the office to schedule a bulk pick up by 3PM Wednesday.
Place trash by curb or 3ft from dumpster no earlier than 6PM Wednesday.

ACCEPTED:

- Bed frame
- Bicycle
- Landscapes like branches
- Shelves
- Mattress
- Boxes
- Furniture like couches
- Treadmill

NOT ACCEPTED:

- A/C Units, refrigerators, & freezers
- Electronics including TV & computer monitors
- Tires
- Automotive waste (oil)
- Hazardous waste like gasoline, gas tanks, used oil, motor oil, propane tanks, acid, household hazardous waste, products and items containing mercury, medical waste, pesticides, insecticide and chemicals, etc.
- 55-gallon drums (unless both ends are cut out and drum is flattened)
- Concrete or rock, dirt or sod, & ashes (hot or cold)
- Broken glass, broken mirrors (unless wrapped in newspaper and labeled)
- Dead animals
- Fertilizer (depends on quantity-please call customer service at 719-591-5000 before placing in trash)
- Firecrackers
- Fluorescent tube lighting rods, bulbs
- Lawnmowers and other home yard equipment (unless the gas and oil have been completely removed)
- Liquids
- Paints, stains, sealants (lids must be open and contents dry)
- Razor blades (unless placed in a hard plastic container with a screw-on lid)
- Syringes, hypodermic needles (unless in a proper hazardous materials container - please call customer service)
- Vehicle batteries & automobile body parts (doors, fenders, etc)



It's the perfect time to take advantage of the Hunt

Deployed Spouses Program

Hunt understands how difficult it can be to have your active duty spouse on a deployment or extended TDY (30 days or longer) while you are here holding down the home front. In an effort to make the transition as smooth as possible for you, we have a program that will provide assistance to you in many ways.

The best part is, it's free for you.

Some of the ways we can help you:

- *Mowing and weed-eating inside fenced yards by our landscape company*
- *Assistance with driveway snow removal during winter months*
- *Assembly of furniture, toys, and bikes*
- *Re-arrangement of furniture in your home*
- *Hanging of holiday decorations, shelves, and more*
- *Partnership with Airmen & Family Readiness for Deployed Family for events, Military Life Consultants, and more: 719-333-3444*

TO JOIN THE DEPLOYED SPOUSES PROGRAM:

Stop by the Community Management Office to fill out a Deployed Spouses Form and provide deployment orders. As soon as the information is completed, we will place you on the list. It will take 2 weeks to process your request, so as soon as you are aware of a deployment, please come to the office so we can start assisting you.

Ask a member of your Hunt team for more details!

We're on Facebook

Like us and you'll...

Keep Current • Stay Connected • Be Informed

The Air Force Academy Family Housing Facebook page will provide you with operational updates and important notices, alert you of emergencies, and loop you in on our community social events!

facebook.com/afacademyfamilyhousing

719-982-4800 • 4609 W. Bighorn Drive • USAF Academy, CO • 80840

AIR FORCE ACADEMY
HUNT MILITARY COMMUNITY

airforceacademyhousing.com

Air Force Academy Military Communities

Fencing and Privacy Screen Program

Air Force Academy Military Communities

is managed primarily as an "open-space" neighborhood in efforts to preserve the natural beauty and feel of the National Forest that surrounds our community. As a result, backyard fencing is limited. However, we recognize that many families desire privacy for the outdoor living spaces or desire physical barriers by means of a fence for their pets and/or young children. Fence installation is authorized, at Resident's expense, with prior Community Management approval via a signed Alteration Request and Fence Addendum.

Steps to Putting in a Fence Request:

1. Submit an alteration request with diagram
2. Sign fence addendum
3. Have utilities marked
4. Request dig permit through CE
5. Submit dig permit to housing
6. Install new fence once Hunt Management clears your paperwork

- After your alteration request has been approved and you have signed the fence addendum, you can call 811 or go to colorado811.org to mark the yard/patio area for utilities, etc.
- Currently allowed fence types are: chain link, privacy, and split rail fences. Fences cannot exceed 25' from the back of your home. The fence can only be the width of your home. Any variations exceeding these limits may be denied.
- Fences must be installed as marked by Colorado811 and Base CE. Once utilities are marked, you will call Base Civil Engineering for your dig permit at: KIRA Facilities Services, BLDG 8116, Suite 110 DSN: 333-2432/2790. Signed dig permits must be emailed to the office prior to installation.
- Variations must be approved by Hunt management or risk being removed immediately upon request.

CHAIN LINK
Corner and gate posts are required to be 2.5 galvanized steel. All fence posts are required to be hand driven to a depth of at least 24 inches.

WOODEN FENCES
***Privacy:** 4" wide, 5/8" thick, 5ft high dog-ear cedar wood.*

***Split Rail:** cedar rail posts (3 horizontal posts) with wire mesh lining as follows and finished height of 4 ft.*

PATIO SCREENING
Privacy fences may be installed around the concrete patio pad with 6" set-back built of 4" wide, 5/8 thick, 5ft high dog-ear cedar wood.
Note: No gate is permitted.

If you have any questions, please reach us at **719.982.4800**

Garden & Yard Beautification

Gardens may be installed/planted by residents. However, garden areas must be removed prior to move-out and the ground returned to its prior state. Gardens do not require advance approval.

Seeding Recommendations

- *Use a topdress with a mixture of compost or organic material to ensure good soil to seed contact*
- *Use a starter fertilizer to prepare soil*
- *Broadcast of drill to help incorporate the seeds into the soil*
- *Seed depth should be 1/8-1/4"*
- *Light and frequent waterings are required until the seeds have germinated*
- *Make sure that the soil surface remains moist but not saturated.*
- *Normally after the grass is established watering can be reduced.*

Top soil and grass seed are available through the Self-Help Center at AFAMC Maintenance Management. Garden tools, wheelbarrows, lawn mowers, hoses and water sprinklers are also available for loan.

PLEASE BE MINDFUL OF WATERING RESTRICTIONS

Water restrictions for 2023 have not been released; however, 2022 was as follows:

Residents with odd numbered addresses may water on Tuesday and Saturday. Those with even numbered addresses will be allowed to water on Sunday and Wednesday. Watering should not be done within the hours of 10 a.m. and 6 p.m. The remaining areas on base will be allowed to water on Monday and Friday.

For any questions you can visit:
https://www.csu.org/Pages/restrictions-r.aspx-out

Deer Resistant Plants

Residents my beautify their homes via flower/mulch beds, etc. However, only the following plants may remain upon move-out as these plants are "resistant" to our native deer population and appropriate for our Front Range/Foothills environment.

ANNUALS
Ageratum
Snapdragon
Pot Marigold
Annual Vinca
Dusty Miller
Sweet Alyssum
Salvia
Zinnia

BULBS
Daffodil
Canna Lily
Crocus
Hyacinth
Grape Hyacinth
Calla Lily
Caladium
Tulip

GROUND COVERS
Bearberry
Large Periwinkle
Periwinkle
Mint

ORNAMENTAL GRASSES
Feather Reed Grass
Blue Fescue
Fountain Grass
Oriental Fountain Grass

PERENNIALS
Bleeding Heart
Peony
Russian Sage
Yucca
Aster
Purple Cornflower
Hardy Geranium
Black-Eyed Susan
Daylily

SHRUBS
Barberry
Butterfly Bush
Russian Olive
Bearberry
Rose of Sharon
Japanese Garden Juniper
Savin/Tam Juniper
Mountain Juniper
Blue Star Juniper
Singleseed Juniper
Japanese Spirea
Bridalwreath Spirea
Anthony Waterer Spirea
Japanese Tree Lilac
Common Lilac

Self-Help Warehouse
4608 W. Bighorn Drive,
USAFA, CO 80840
Phone: 719-982-4800

Maintenance of Hardwood Flooring
with Polyurethane Finishes

For a low maintenance, durable finish, the hardwood floors in your home should be taken care of in the following manner:

- Sweep or dust-mop floors on a regular basis to remove any dust or grit which could act as abrasive on the finish.

- Periodically you will need to mop your floors. Never use a soaked sponge mop to clean hardwood flooring: it will damage them. Use a non-abrasive pad (such as the Swiffer) with a solution of 1 to 3 ounces per gallon of water of a pre-defined solution specifically made for hardwood floors. The chemical known as X-Bona, is one of the best.

- Avoid use of any product containing waxes or oils. This includes oil soaps or spray dusting aids. Once a floor has been waxes or oiled it acts as a breaking agent on the polyurethane causing bubbling and cracking.

- One way to extend the life of your hardwood floors is to place throw rugs with non-abrasive backing in critical wear areas. Installing felt glides on all legs of chairs and furniture will prevent depressions in the wood grain and deep scratches.

- When moving heavy objects such as sofas, chairs, entertainment centers or tables, be very careful not to scratch the floors. It is recommended that a piece of 1/8" thick Masonite be used to distribute the weight of the item being moved.

  (Note: A piece of carpet or cardboard does not offer adequate protection, and should not be used.)

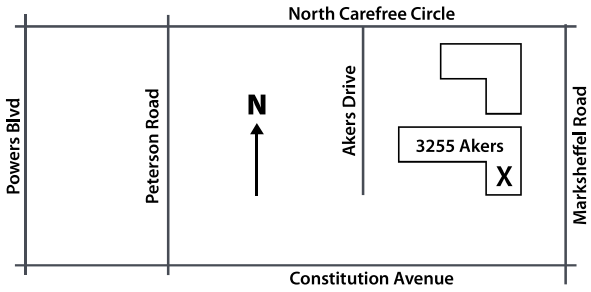
719-982-4800 • 4609 W. Bighorn Drive • USAF Academy, CO • 80840

Household Hazardous Waste Facility

3255 Akers Drive

Monday - Friday from 7am - 5pm
and
2nd Saturday of each month from 9am - 1pm

FREE for El Paso and Teller Counter residents ONLY
A donation of non-perishable food items for the Care & Share food bank is encouraged.



ACCEPTED MATERIALS

Hazardous waste must be in labeled, non-leaking containers that can be left at the site.

Paint, Stains, Solvents, etc.:	Latex, oil-based, aerosol, and hobby paints; lacquers, solvents, stains, strippers, thinners, varnishes, etc.
Lawn & Garden:	Lawn & houseplant fertilizers, herbicides, insecticides, pesticides, rodent poisons, wood preservatives, etc.
Household:	Aerosols, ammonia, ammunition, batteries, bleach, cleaners (carpet, drain, oven, toilet), cooking & lamp oils, cosmetics, degreasers, deodorizers, fire extinguishers, fireworks, floor cleaners/waxes, fluorescent lights & ballasts, furniture polish/wax, gunpowder, laundry products, mercury, mothballs, photographic chemicals, propane & butane tanks, (1 lb & 20 lb), rust removers, silver cleaners, sensitive document shredding (limits apply), smoke alarms, spot removers, etc.
Automotive:	TIRES NOT ACCEPTED. Antifreeze, batteries, brake & transmission fluids, cleaners (bug, tar, chrome, engine, vinyl), flares, fuels, motor oil (5 gallon containers or smaller only), wax, etc.,
Data Media:	Audio and video tapes, CDs, DVDs, BluRay discs, game cartridges, etc.
Electronics:	Computers, printers, scanners, audio/video equipment, camcorders, cell phones, digital cameras, fax machines, microwave ovens, toner & ink cartridges, TVs (19" or smaller), etc.
Medical Waste:	Pills, liquid medicines, ointments, patches, inhalers, etc.: All prescription and over-the-counter medications accepted.
Basic Recyclables: (no sorting)	Aluminum, flattened cardboard, glass containers, metal cans, paper, and plastics #1-7. Clean containers only - NO FOOD RESIDUE.
Porcelain: (toilets, sinks, ceramic tiles, granite & marble countertops, etc.)	*Remove all non-porcelain parts, and items must be put in the dumpster without staff assistance. The county is partnering with Colorado Springs Utilities to recycle crushed porcelain in local roads.

SMALL BUSINESS WASTE PROGRAM

Pre-registration is required.
Call 520-7871 for information on this fee-based program.

Qualifying Conditionally Exempt Small Quantity Generator (CESQG) businesses can drop off their hazardous waste on Thursdays ONLY from 7am - 5pm.

El Paso County Colorado

Call 520-7871 for information.

Find us on Facebook
El Paso Country Environmental

DROP AND SWAP PROGRAM

New/useable household chemicals are available ***FREE***
at the Household Hazardous Waste Facility

Important Phone Numbers

For residents of our community

Airman Family Readiness	333-3444
Military Housing Office Referral Specialist	333-2247
Base Information	333-1110
Bowling Center	333-6779
CDC	333-4709
DEERS Office	333-8766
Dental Clinic	333-5190
District 20 Office	234-1200
Military Housing Office Element Chief	333-3539
Emergency Work Orders	982-4800 option #1
Finance	333-4298
Fitness Center	333-4522 or 333-3531
Golf Course	333-4735
GPSO (TMO)	333-3007
Hospital - Appointment Line	524-2273
Hunt Military Communities Housing Office	982-4800 option #2
Outdoor Rec	333-4753
Pass & ID	333-0443
Post Office	472-0537
Military Housing Office Program Manager	333-3539
Ronnie Vigil (Fencing)	465-7055
Security Forces	333-2000
Self-Help / Maintenance	982-4800 option #2
South Gate	333-2004
Stables	333-4607
Temporary Lodging (Rampart Lodge)	333-4910
Thrift Shop	333-4459
Tickets and Travel (ITT)	333-7367
Youth Center	333-4169

LANDSCAPE MAINTENANCE SCHEDULE

Summer Program Details:

The following is our planned Landscape Maintenance schedule; however, please keep in mind that ground saturation, lightning, winds, etc., can affect the schedule or delay service.

Mowing season is generally May-October but can be less frequent in the early and later months of the growing season.

During prime growth months (June-mid September) the Mow Schedule is planned as follows:

Monday:	MilCon
Tuesday:	4400's, 4500's
Wednesday:	4200's, 4300's
Thursday:	General Office Home, 4100's, Key & Essential, and MilCon Key & Essential
Friday:	Lower Pine Valley, Upper Pine Valley

Semi–improved areas (non-irrigated areas near homes) will be mowed twice a month or as needed.

Native areas (open fields not near homes) will be mowed once per month or as needed.

Broadleaf weed control will begin in May and again in August. Broadleaf weed control takes approximately forty five days to complete. This task is very weather dependent.

Spring cleanup starts in mid-March. This includes shrub pruning. This task takes around four to six weeks to complete.

Fall cleanup starts in mid-October. This task takes six to eight weeks to complete.

Fall pruning begins after irrigation blowouts. This will typically commence in mid-November, but is dependent on weather.

Each growing season Air Force Academy Family Housing Self Help provides seed and topsoil to assist with yard maintenance and restoration. Additionally, we publish a list of plants that are deer resistant and therefore more likely to survive in our environment if Residents desire to purchase and install additional landscape materials.

Please do not adjust your irrigation clocks, call maintenance if you think your yard is being over/underwatered.

In the event a resident requires additional landscape work, ie downed tree limbs, irrigation work, dead plant material, please contact the Maintenance Ofce at 719-982-4800.

Don't Let LAUNDRY Overwhelm You

Enjoy a WASHER & DRYER in Your Home!

NEXT DAY DELIVERY AVAILABLE • FREE MAINTENANCE

Call 800.693.4343 for Washer & Dryer Delivery

Water & Energy Efficient Machines • Flexible Terms
Full Size & Stackable Options • No Credit Check Option

APPLIANCE WAREHOUSE

Appliance Warehouse is a CSC ServiceWorks Company

CSC SERVICEWORKS Making life easy

APPLIANCE WAREHOUSE

HUNT

EXCLUSIVE LAUNDRY SUPPLIER

Hunt Military Housing has partnered with **Appliance Warehouse of America, Inc.**, the nation's largest supplier of "in-home" washers and dryers, in an effort to supply our residents with the very best laundry appliances for use in their base homes. Hunt Military Housing residents lease directly from Appliance Warehouse through their "Resident Direct Program".

As a Resident of a Hunt Military Community - *AWA will lease directly to you*

- *Full size and stackable washer / dryer sets for a low monthly cost*
- *Delivery fee - $35.00*
- *Minimum lease - 2 months*
- *You will have the convenience of automatic credit card payments, direct debit from checking account or monthly invoices for payments*
- *Next business day delivery in most cases*

It is simple and easy! Call 800.693.4343 to place your application with one of our friendly and qualified customer service agents and you will be on your way!

To get the special rate guaranteed for Hunt Military Housing, be sure to mention:

LOCATOR CODE 1112

Tips for Preventing Mold & Mildew

A guide for residents of our community

- *Do not block or cover any heating, ventilation, or air conditioning ducts.*
- *Whenever possible, maintain a temperature between 50 to 80 degrees Fahrenheit.*
- *To allow an exchange of air and permit sunlight to enter, air out your home when weather is warm and dry. Run the fan on your furnace to help circulate fresh air.*
- *In damp, humid, or rainy weather, keep windows and doors closed.*
- *Clean and dust on a regular basis. Use environmentally safe household cleaners. Regular vacuuming and mopping removes household dirt and debris that contribute to mold growth. A vacuum cleaner with a HEPA filter will help remove mold spores.*
- *Periodically clean and dry the walls and floors around the sink, bathtub, shower, toilet, windows and patio doors using a common household disinfecting cleaner. On a regular basis, wipe down and dry areas where moisture sometimes accumulates, such as countertops, windows, and windowsills.*
- *Use the bathroom fan when bathing or showering and allow the fan to run until all excess moisture has been vented from the bathroom.*
- *Use the exhaust fan in your kitchen when cooking or while the dishwasher is running and allow the fan to run until all excess moisture has been vented from the kitchen.*
- *If you have a clothes dryer, clean the lint filter after each use and promptly report any damage to the vent connection. If condensation forms within the closet, wipe it dry. Dry damp clothing as quickly as possible.*
- *Limit houseplants to a reasonable number to limit excess humidity and limit molds that could grow on the soil surface. Avoid over-watering.*
- *If you clean up a spill on your carpeting, blot the area dry.*
- *Do not overfill closets or storage areas. Overcrowding restricts airflow.*

What to report to the Community Management Office:

- Any leak or water damage
- Any malfunction in your heating, ventilation, or air conditioning system
- Windows or doors that don't open or close properly
- Any areas of visible mold (except very small areas that respond to routine cleaning)
- Musty or moldy odors
- Health issues which you think are linked to the air quality within your home or community.

Introducing
Online Payments!

Now Available on the **Hunt Resident Portal & Mobile App!**

TWO WAYS TO REGISTER

Visit AirForceAcademyHousing.com

Under **Current Residents** click **Maintenance Requests** and then **Click here to register**. Use your email address on file & registration code previously provided.

OR

Download the **Hunt Resident App** at:

*Must know property name & zip code. Emergency messages do not require opt in.

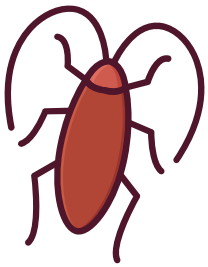
Hunt Resident App Features & Services

- Easy Online Payments
- Enjoy 24/7 Self-Service Account Management
- Submit & Track Routine Maintenance Requests
- Opt-In to SMS Text
- Communicate With Your On-Site Team Via Your Mobile Device
- Check Out Upcoming Community Events & Announcements!

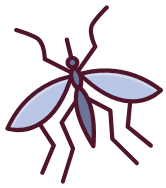
Tips for Preventing Pests

A guide for residents of our community

- *Reduce clutter to eliminate potential places for insects or rodents to hide*
- *Inspect & vacuum crevices around rooms and furniture*
- *If you are a frequent traveler, vacuum luggage when you return home, because many pests tend to travel*



- *Dispose of garbage daily*
- *Use a garbage container that has a lid*



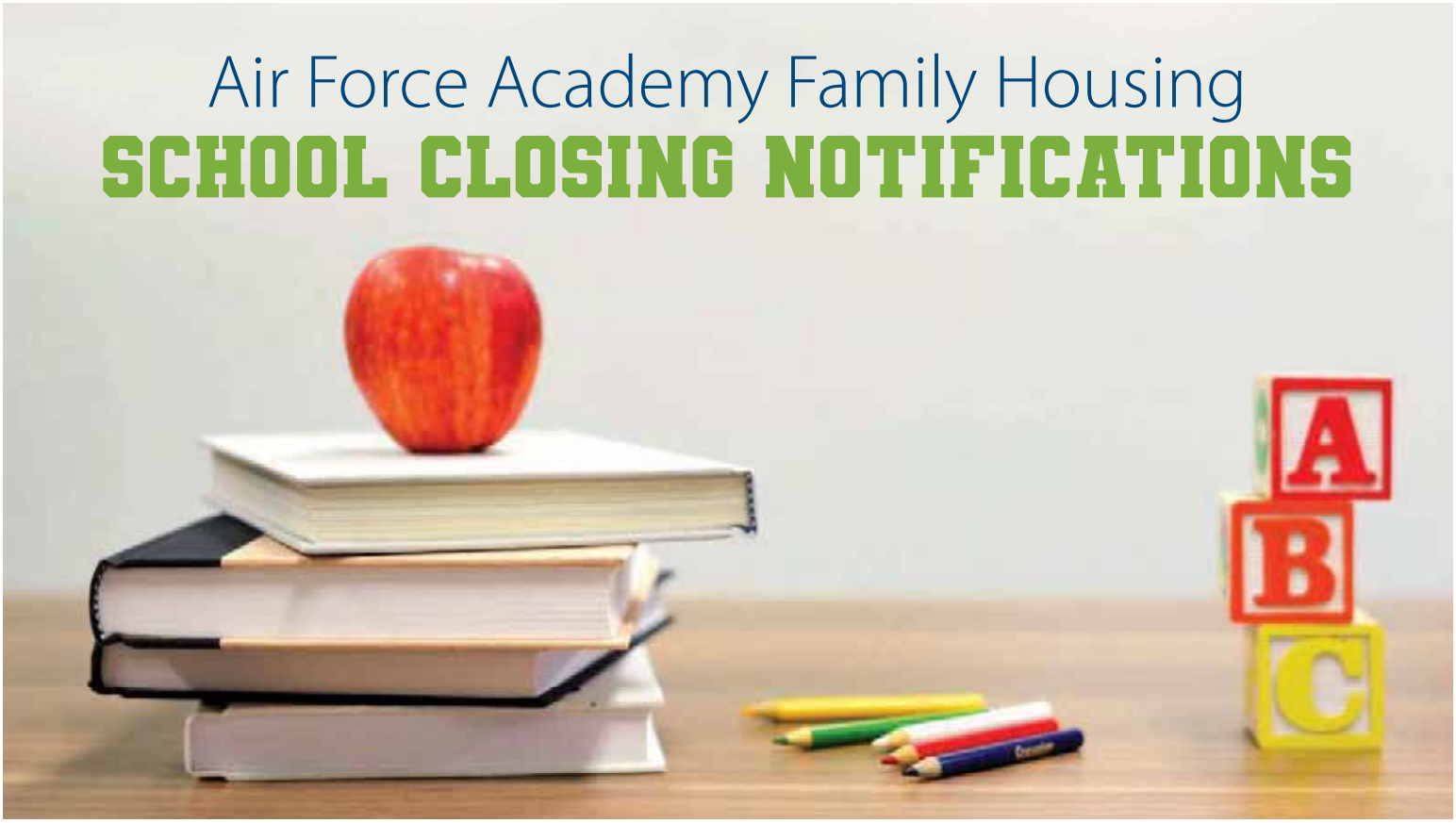
- *Do not leave dirty dishes, pots, pans, utensils, etc. outside of kitchen cabinets*
- *Do not leave standing water on floors or countertops or anywhere else in your apartment*
- *Steam clean all used furniture before bringing it into your apartment*
- *Properly store all food in airtight containers or sealed plastic bags*
- *Clean up all food particles left on the countertops, floors, appliances, etc.*
- *Thoroughly rinse garbage disposal after use and put a lid on it*
- *All leftover pet foods should be cleaned up as soon as pets are finished eating, and do not leave food dishes out between feedings*

In preventing pests, it is important to limit their food supply, water supply, and entry. Effective housekeeping and sanitation are keys to prevention.

What to report to the Community Management Office:
- Any leaks or standing water accumulation; and
- Any holes or cracks.

Air Force Academy Family Housing

SCHOOL CLOSING NOTIFICATIONS



Many of our residents have asked about how to get information regarding opening delays, closures, etc., for the AF Academy and District 20 schools. There are 2 primary methods:

1. FLASH ALERT

Access at http://www.flashalert.net/news.html?id=856

2. FALCON ALERT

Falcon Alert is in the process of being redirected to a new site/software but once that transition process is complete we will pass all the sign-up/registration information to our residents.

In the meantime, we recommend you go to the Flash Alert website and sign up for Military Base/AF Academy notifications and District 20 notifications—two separate requests.

Questions?

Please contact our Community Management Office at **719-982-4800**

Need a quick fix?

Hunt Management provides a Self-Help program that allows residents to use supplies and make minor home improvements and individual lawn care. Free to residents only.

NO CHARGE ITEMS AT SELF-HELP

- Closet door hardware
- Electrical cover plates
- Furnace filters
- Microwave vent filters
- Mouse traps
- Refrigerator water filters
- Range hood filters
- Sink/tub stoppers
- Top soil
- Grass seed
- Touch-up paint
- Under-sink water filters (kitchen)

AVAILABLE FOR LOAN

- Rakes
- Shovels
- Hoes
- Posthole diggers
- Wheelbarrows
- Lawn mowers
- Step ladders
- Hoses
- Water sprinklers

Self-Help Warehouse
Phone: 719-982-4800
4608 W. Bighorn Drive, USAF Academy, CO 80840

All service requests are 24 hours a day / 7 days a week.

Update your email address today and stay connected, current & informed

By keeping your email address up to date, you'll be provided with operational updates & important notices, emergency alerts, community notices, and invitations to social events!

Please provide us an email address other than your .mil address. Two personal email addresses per household is preferred to ensure that the adults in the household receive important messages and community updates. This will be our primary means of communication with you.

To update your email address, call **719-982-4800** or email **afacontact@huntcompanies.com.**

Also, don't forget to check out our Hunt Resident Portal where you can set up your own resident message boards, easily submit maintenance requests, and much more!

HOW AIR FORCE ACADEMY FAMILY HOUSING RESIDENTS CAN HELP REDUCE WATER POLLUTION

Stormwater is generated when there is precipitation that falls to the ground and can infiltrate or can become surface runoff. This water can become contaminated with pollutants (i.e. chemicals, pathogens, sediment) that it comes in contact with and can impact streams, lakes, and groundwater. Improving and ensuring water quality by eliminating pollutants that could be exposed to stormwater runoff is everyone's responsibility. The 10th Civil Engineer Squadron has asked residents on base to help reduce water pollution by following these steps:

Lawn Maintenance - Minimize application of fertilizer, pesticide or fungicide, which could be transported into stormwater sewer systems.

Municipal Trash - Dispose of trash into designated waste containers with a secure lid. Pick up and dispose of municipal trash whenever you can, whether on or off base. Recycle materials at your homes and workplaces. Recycling containers are available near the Base Exchange for cardboard, paper, aluminum, glass and plastic.

Household Hazardous Waste - The Academy's Hazardous Waste Facility will accept off-base generated used vehicle oil and useable household materials such as paints, cleaners and antifreeze from government ID cardholders. The facility is located at Building 8125 and is open Wednesdays and Thursdays from 8 a.m. to 4 p.m. For disposal questions, call 719-333-3852 during these hours. El Paso County also operates a household hazardous waste drop-off facility at 3255 Akers Drive in Colorado Springs.

Car Washing/ Maintenance - Don't wash or maintain your car at home; take it to the Academy auto hobby shop or off base. Fund-raising car washes should be approved by the 10th CES' Water Quality Manager.

Mission and Service Support Activities - Various materials, including oils, lubricants and cleaners can impact receiving water quality if left exposed to stormwater. Use every reasonable precaution when performing day-to-day work duties to eliminate pollutants released into the environment which may come into contact with storm water.

Educating Future Generations - Talk to your children about eliminating pollutants that could be exposed to stormwater and its benefits to the environment.

For additional information, call 719-333-8367

AIR FORCE HOUSING WEBSITE

Helping Airmen and their families transition into their new homes

Go to www.housing.af.mil for housing information at AF installations worldwide

719-982-4800 • 4609 W. Bighorn Drive • USAF Academy, CO • 80840

AIR FORCE ACADEMY
HUNT MILITARY COMMUNITY

airforceacademyhousing.com

Attachment G
MS4 Information Management System

4-Mar-21	PIP	Permit/SWMP	Ben Recker, 719-685-6585, benjamin.recker@tetratech.com	
4-Mar-21	PIP	Permit/SWMP	Ben Recker, 719-685-6585, benjamin.recker@tetratech.com	
0-Mar-22	PIP	Permit/SWMP	Ben Recker, 719-685-6585, benjamin.recker@tetratech.com	
8-Mar-23	PIP	Permit/SWMP	Ben Recker, 719-685-6585, benjamin.recker@tetratech.com	
6-Mar-23	PIP	Permit/SWMP	Ben Recker, 719-685-6585, benjamin.recker@tetratech.com	
8-Sep-24	PIP	Permit/SWMP	Brendan Ryan, 719-208-1485, brendan.ryan.4.ctr@us.af.mil	
16-Jul-24	IDE	Permit/SWMP	Brendan Ryan, 719-208-1485, brendan.ryan.4.ctr@us.af.mil	
5-May-24	IDE	Permit/SWMP	Brendan Ryan, 719-208-1485, brendan.ryan.4.ctr@us.af.mil	

Attachment H

Post-Construction Stormwater Control Structure Inventory

Permanent Structure	MGRS	coord_X	coord_y	Location	Inspection Date	Deficiencies
Parade Loop						
AOG Memorial Pond	ED 12644 18636	512644	4318636	Cemetary		
Stairway to Heavan	ED 12229 18167	512229	4318167	On south side of Parade Loop		
Compost Area Pond	ED 13884 18051	513884	4318051	East end of Contractor Yard		
AIRFIELD						
Airfield Infiltration Trench	ED 15307 14521	515307	4314521	Airfield NE Corner of West Runway		
Airfield Ponds	ED 15232 12345	515232	4312345	South of Airfield Entrance Road		
ATHLETIC FIELD and CADET AREA NORTH						
Athletic Field North Parking Area	ED 09347 18920	509342	4318920	Pond into Deadman's Creek		
Cadet Gym Pond	ED 09857 18286	509857	4318286	NE Corner of Bldg		
Deadman's Creek Check Dams	ED 09620 18918	509620	4318918	North of Athletic Fields		
Field House Pond	ED 10410 18397	510410	4318397	Next to Field House east parking lot		
Field House Bioswale	ED 10353 18378	510353	4318378	Northeast of Field House and north of parking lots		
North Cadet Parking Area Pond	ED 10786 18149	510786	4318149	Parking Lot on Parade Loop		
Holaday Athletic Center (HAC) Pond	ED 10055 18669	510055	4318669	North of HAC center SE of field		
Running Track Pond	ED 10054 18658	510054	4318658	SE Corner of Running Track North of HAC		
Soccer Stadium Pond	ED 09250 18322	509250	4318322	South side on Soccer field in Cadet area		
Resistance Training Lab Warehouse Pond	ED 08512 19352	508512	4319352	West of Deadman's Lake		
Prep School Area						
Archery Range Infiltration Trench	ED 13554 14429	513554	4314429	Archery Range		
Athletic Field Pond Trench Inlet at Prep School	ED 12472 14418	512472	4314418	Athletic Field at Prep School		
Athletic Field Pond at Prep School	ED 12639 14384	512639	4314384	Athletic Field at Prep School		
Community Center Pond NE of Prep School	ED 12570 14599	512570	4314599	East of Prep School / Running Track		
Child Development Center Pond	ED 12038 14646	512038	4314646	East of AFFES Gas Station		
Douglas Valley Housing Check Dams	ED 12491 15804	512491	4315804	East Douglas Drive		
West of Service Area on Park Dr						
Base Service and Supply Area (BSSA) Pond	ED 14566 11744	514566	4311744	Just west of RV storage yard (Park Dr)		
Civil Engineering Materials Yard Pond	ED 14946 11598	514946	4311598	South of Park Drive and Bldg 8125		
Recreation Vehicle Parking Area Infiltration Trench	ED 14812 11531	514812	4311531	NS Corner of Parking Yard South of Park Dr		
Perm Large Vehicle Inspection Service (PLVIS) Pond	ED 15791 11929	515791	4311929	South Entrance Gate		
Housing Area and South						
Equestrian Center Dam	ED 12181 12920	512181	4312920	West of riding arena		
Pine Drive Infiltration Trench	ED 11247 14119	511247	4314119	Pine Drive across from Fire Station # 1		
West Monument Creek Rd	ED 10242 13584	510242	4313584	On West Monument Creek Rd		
Academy Dr						
Firestation # 2 Permeable Pavers	ED 10377 16304	510377	4316304	On Academy Drive and Interior Drive		
Medical Center Permeable Pavers	ED 09930 15922	509930	4315922	On Academy Drive and Pine Drive		
Hospital Pond	ED 10055 16224	510055	4316224	NE corner of intersection going into area		
JACK'S VALLEY						
Jack's Valley No. 1	ED 11551 20873	511551	4320873	West of BCT		
Jack's Valley No. 2	ED 10080 20984	510080	4320984	East of CATM in Jack's Valley		
Jack's Valley No. 3	ED 10418 20956	510418	4320956	East of CATM in Jack's Valley		
Jack's Valley Road Channel	ED 13132 20175	513132	4320175	1st turnoff heading north from gate		
CATM Area Pond	ED 09649 20927	509649	4320927	Jack's Valley		
Field and Engineering and Readiness Laboratory (FERL)	ED 09996 20447	509996	4320447	East of Firing Range		
Munitions Storage Area Pond	ED 12904 20305	512904	4320305	Near Entrance to Jack's Valley		
UAL Training Complex Pond	ED 09728 20814	509728	4320814	West end of Jack's Valley		
West and South of Cadet Area						
Goat Camp Creek Pond	ED 08527 17606	508527	4317606	West of West substation		
Goat Camp Creek Pond outlet structurre	ED 08597 17427	508597	4317427	South end of parking lot near west substation		
Lehman Run Dams	ED 09469 17284	509469	4317284	South Cadet Area and Visitors Center		
Lehman Run Infilitration Trenches	ED 09718 17308	509718	4317308	Interior Drive		
Sijan Hall Riprap Apron	ED 09682 17390	509682	4317390	SE Corner of parking lot SW of Bldg 2410		
South Cadet Parking Area Pond	ED 10254 17397	510254	4317397	East of parking lot and west of Cross Dr		
Hidden Pond	ED 10240 13610	510240	4313610	On road to CSU treatment plant		
Kettle Creek Jurisdictioinal Dam (East of I25 new NG Readiness	ED 16873 13712	516873	4313712	In Good Condition		
North Gate Blvd						
EUL Underground Detention Basin- North	ED 13782 42919	513782	4342919	West of new Visitor's Center		
EUL Underground Detention Basin- South	ED 13818 74319	513818	4374319	West of new hotel		

Attachment I

Dry Weather Screening and Illicit Discharge Detection and Elimination Tracking Log

Date of Dry Weather Screening	Dry weather discharge observed (Yes or No)	If yes, provide details on follow up investigation activities. If illicit discharge is confirmed, enter in Illicit Discharge Tracking sheet.
Dec-16	No discharge observed	
Dec-17	No discharge observed	
Jul 2018 and Nov 2018	No discharge observed	
May-19	No discharge observed	
Nov-19	No discharge observed	
Mar-20	No discharge observed	
Dec-20	No discharge observed	
Dec-21	No discharge observed	
Oct-22	No discharge observed	
Sep-23 and Oct 23	No discharge observed	
Mar-24, May-24, Sep-24, Nov-24	No discharge observed	

Attachment J
Construction Site Inspection Template

CONSTRUCTION GENERAL PERMIT SITE INSPECTION

Project Name: _____
NPDES ID Number: _____

Section A – General Information	
Inspector Information	
Inspector Name:	**Title:**
Organization:	**Email:**
Address:	**Phone Number:**
Inspection Details	
Operator / Permittee:	**Inspection Date:**
SWPPP Manager:	**Inspection Start Time:**
Inspection Frequency:	**Weather Conditions:**

Did you determine that any portion of your site was unsafe for inspection per CGP Part 4.5? ☐ Yes ☐ No

If "Yes," provide the following information:

Location of unsafe conditions:

The conditions that prevented you inspecting this location:

Is a current copy of the SWPPP at the site or at an easily accessible location ☐ Yes ☐ No

- ☐ Spill Response Plan is in SWPPP
- ☐ Site Map is in SWPPP

Is notice of permit coverage located in an accessible location? ☐ Yes ☐ No

Project Name: _____
NPDES ID Number: _____

Section B – Condition and Effectiveness of Erosion and Sediment (E&S) Controls (CGP Part 2.2)

Type and Location of E&S Control	Conditions Requiring Routine Maintenance?[1]	If "Yes," How Many Times (Including This Occurrence) Has This Condition Been Identified?	Conditions Requiring Corrective Action?[2, 3]	Date on Which Condition First Observed (If Applicable)?	Description of Conditions Observed
1.	☐ Yes ☐ No		☐ Yes ☐ No		
2.	☐ Yes ☐ No		☐ Yes ☐ No		
3.	☐ Yes ☐ No		☐ Yes ☐ No		
4.	☐ Yes ☐ No		☐ Yes ☐ No		
5.	☐ Yes ☐ No		☐ Yes ☐ No		
6.	☐ Yes ☐ No		☐ Yes ☐ No		
7.	☐ Yes ☐ No		☐ Yes ☐ No		

Project Name: _____
NPDES ID Number: _____

Section C – Condition and Effectiveness of Pollution Prevention (P2) Practices and Controls (CGP Part 2.3)

Type and Location of P2 Practices and Controls	Conditions Requiring Routine Maintenance?[1]	If "Yes," How Many Times (Including This Occurrence) Has This Condition Been Identified?	Conditions Requiring Corrective Action?[2, 3]	Date on Which Condition First Observed (If Applicable)?	Description of Conditions Observed
1.	☐ Yes ☐ No		☐ Yes ☐ No		
2.	☐ Yes ☐ No		☐ Yes ☐ No		
3.	☐ Yes ☐ No		☐ Yes ☐ No		
4.	☐ Yes ☐ No		☐ Yes ☐ No		
5.	☐ Yes ☐ No		☐ Yes ☐ No		
6.	☐ Yes ☐ No		☐ Yes ☐ No		
7.	☐ Yes ☐ No		☐ Yes ☐ No		

Project Name: _____
NPDES ID Number: _____

Section D – Stabilization of Exposed Soil (CGP Part 2.2.14)

Specific Location That Has Been or Will Be Stabilized	Stabilization Method and Applicable Deadline	Stabilization Initiated?	Final Stabilization Criteria Met?	Final Stabilization Photos Taken?	Notes
1.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
2.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
3.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
4.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
5.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	

Section E – Description of Discharges (CGP Part 4.6.2)

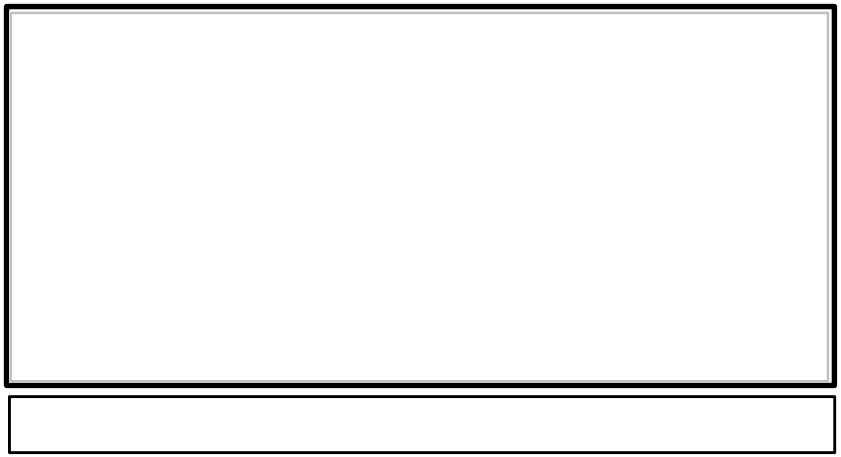
Was a discharge (not including dewatering) occurring from any part of your site at the time of the inspection?[4] ☐Yes ☐No

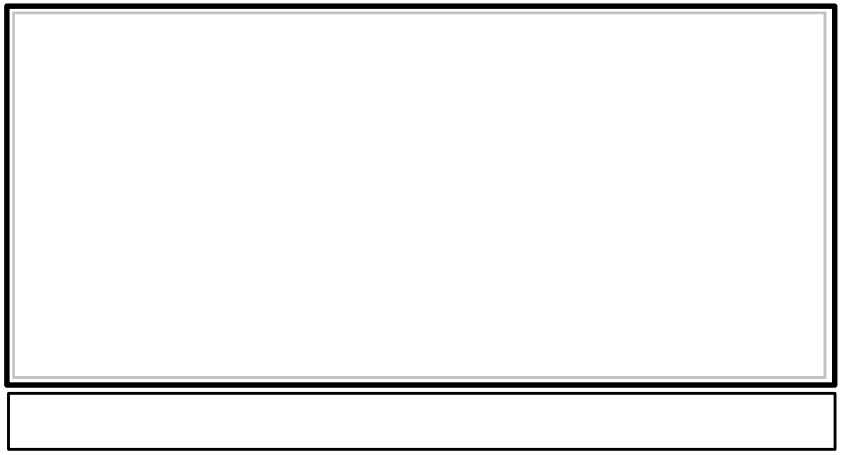
If "Yes," for each point of discharge, document the following:

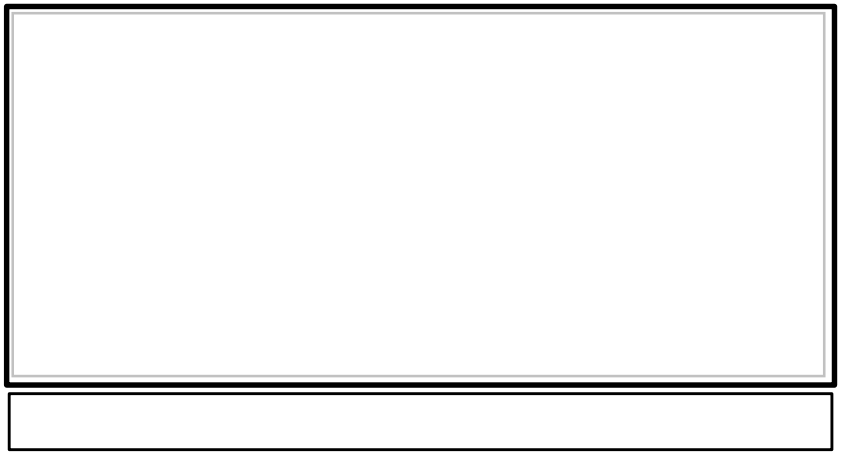
- The visual quality of the discharge.
- The characteristics of the discharge, including color; odor; floating, settled, or suspended solids; foam; oil sheen; and other indicators of stormwater pollutants.
- Signs of the above pollutant characteristics that are visible from your site and attributable to your discharge in receiving waters or in other constructed or natural site drainage features.

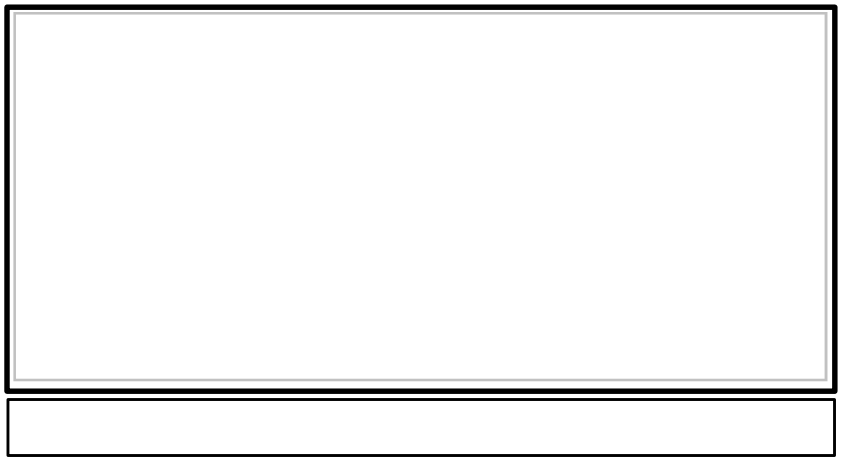
Discharge Location	Observations
1.	
2.	
3.	
4.	
5.	

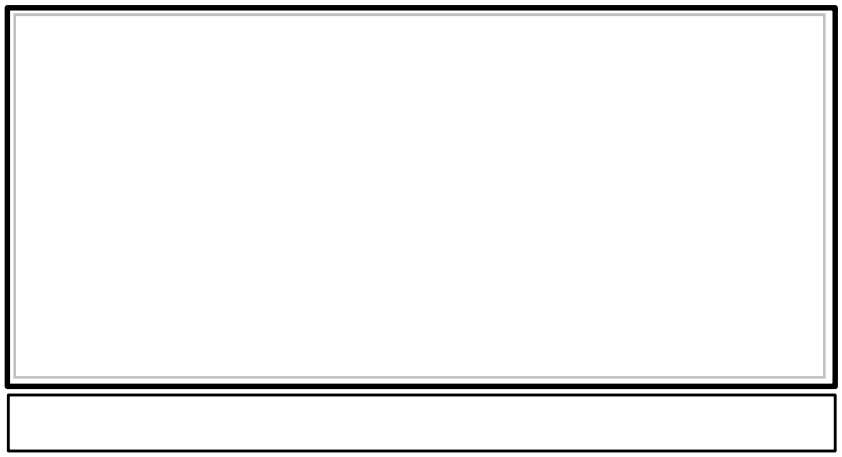
[4] If a dewatering discharge was occurring, you must conduct a dewatering inspection pursuant to CGP Part 4.3.2 and complete a separate dewatering inspection report.

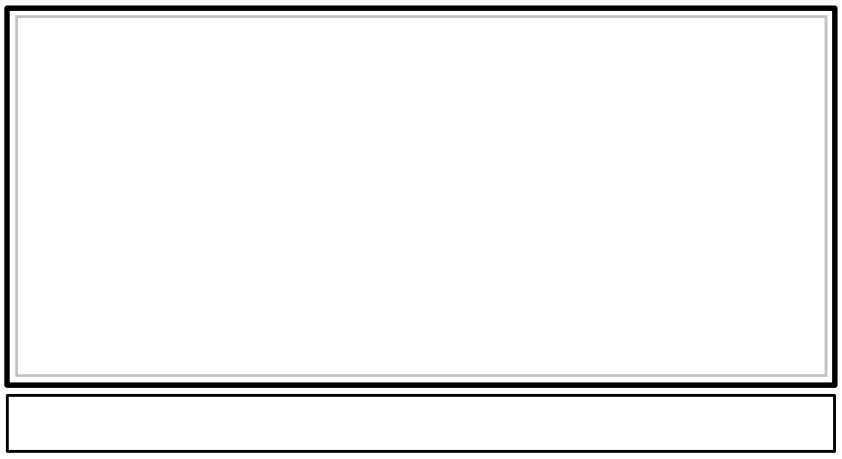


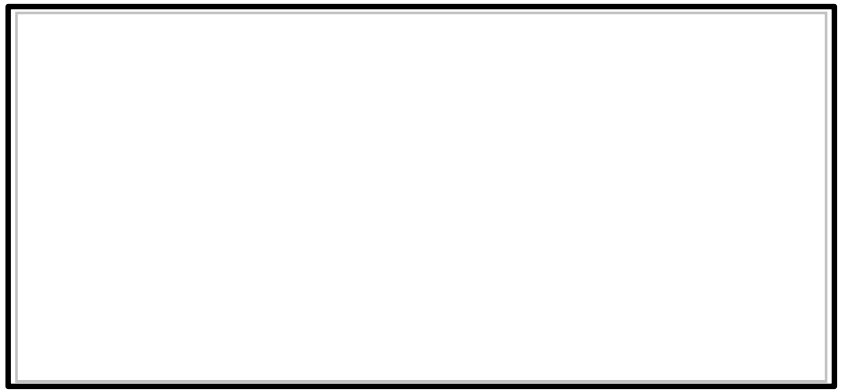


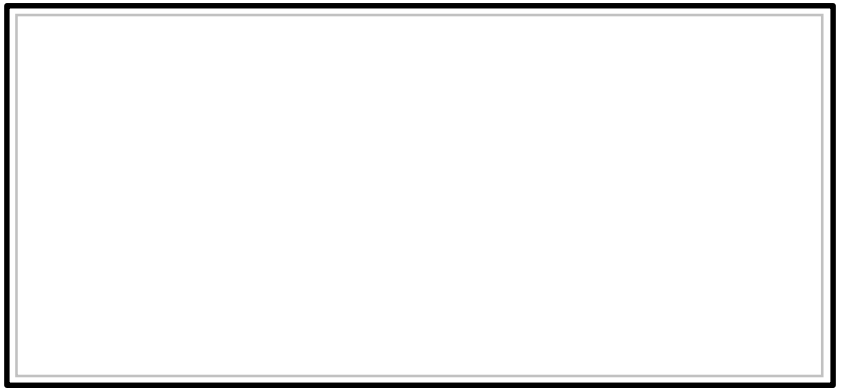


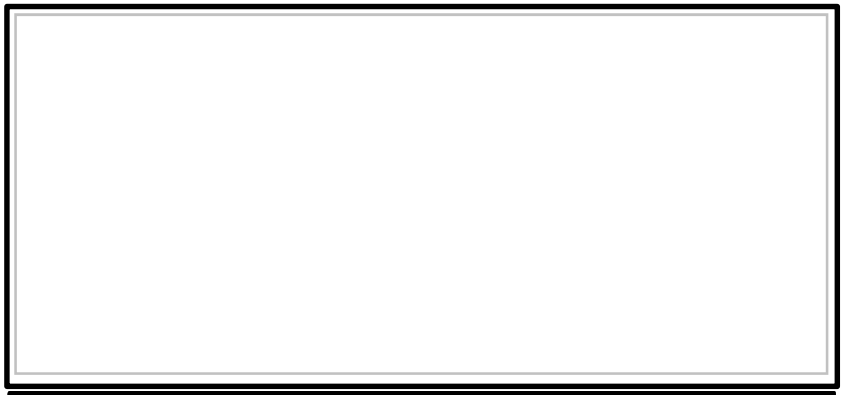


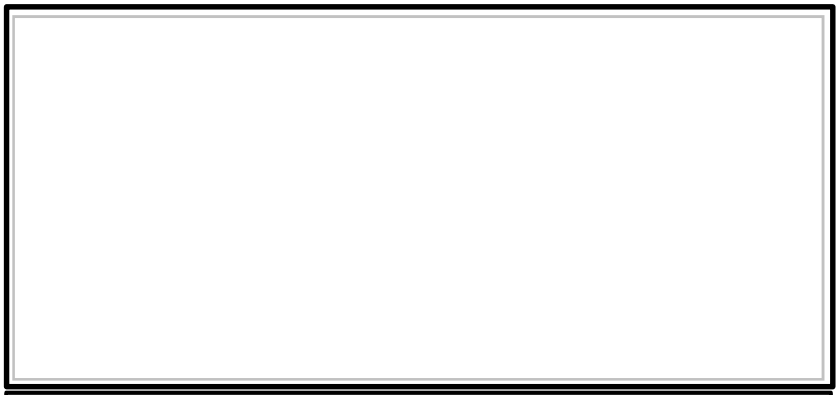












Project Name: _____
NPDES ID Number: _____

Comments:

Section F – Signature and Certification (CGP Part 4.7.2)	
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."	
Signature:	10 CES/CEIEC U.S Air Force Academy
Printed Name:	**Date:**

If the same routine maintenance was found to be necessary three or more times for the same control at the same location (including this occurrence), follow the corrective action requirements and record the required information in your corrective action log, or describe here why you believe the specific condition should still be addressed as routine maintenance:

[1] Routine maintenance includes minor repairs or other upkeep performed to ensure that the site's stormwater controls remain in effective operating condition, not including significant repairs or the need to install a new or replacement control. Routine maintenance is also required for specific conditions: (1) for perimeter controls, whenever sediment has accumulated to half or more the above-ground height of the control (CGP Part 2.2.3.c.i); (2) where sediment has been tracked-out from the site onto paved roads, sidewalks, or other paved areas (CGP Part 2.2.4.d); (3) for inlet protection measures, when sediment accumulates, the filter becomes clogged, and/or performance is compromised (CGP Part 2.2.10.b); and (4) for sediment basins, as necessary to maintain at least half of the design capacity of the basin (CGP Part 2.2.12.f)

[2] Corrective actions are triggered only for specific conditions (CGP Part 5.1):

1. A stormwater control needs a significant repair or a new or replacement control is needed, or, in accordance with Part 2.1.4.c, you find it necessary to repeatedly (i.e., three (3) or more times) conduct the same routine maintenance fix to the same control at the same location (unless you document in your inspection report under Part 4.7.1.c that the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under 2.1.4); or
2. A stormwater control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly; or
3. Your discharges are not meeting applicable water quality standards; or
4. A prohibited discharge has occurred (see CGP Part 1.3); or
5. During the discharge from site dewatering activities:
    a. The weekly average of your turbidity monitoring results exceeds the 50 NTU benchmark (or alternate benchmark if approved by EPA pursuant to Part 3.3.2.b); or
    b. You observe or you are informed by EPA, State, or local authorities of the presence of the conditions specified in Part 4.6.3.e.

[3] If a condition on your site requires a corrective action, you must also fill out a corrective action log found at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates. See CGP Part 5.4 for more information.

Attachment K

Storm Drain Inlet Inspection Sample Report

ll that apply)

stream

- ☐ Piping
- ☐ Scour
- ☐ Undermined
- ☐ Eroded
- ☐ Exposed
- ☐ Corroded

hes:

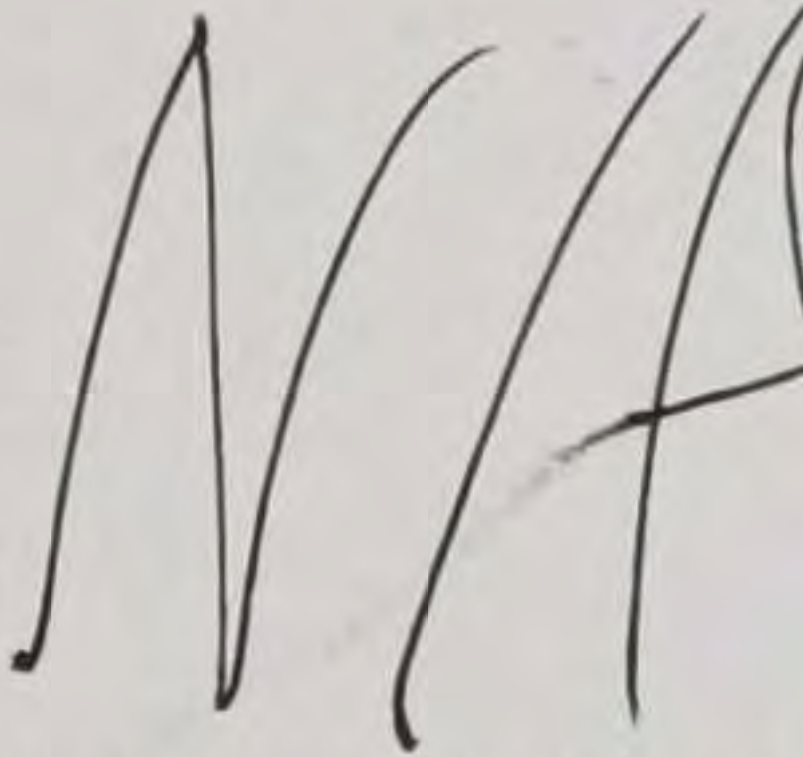
---

l that apply)

- ☐ Flared End

escribe):

SKETCH/N



Provide: Sketch of structure,

IN

One)

Structure Condition

Attachment L
Spill Training Materials

United States Air Force Academy

Spill Prevention, Control, and Countermeasures Plan Training

- *Enter Name in text field (left)*
- *Click arrow (below) when prompted to start the training*

U.S. AIR FORCE ACADEMY

Training Overview

- Section 1: Introduction and Regulatory Review
- Section 2: Spill Prevention
- Section 3: Spill Response
- Section 4: Contact Information

U.S. AIR FORCE ACADEMY

Section 1

Introduction and Regulatory Review

U.S. AIR FORCE ACADEMY

Oils Covered by This Training

- Petroleum
- Oily sludges
- Synthetic oils
- Mineral oils
- Used oil
- Oils mixed with wastes
- Animal fats, oils, and grease
- Vegetable oils

U.S. AIR FORCE ACADEMY

Agenda - What SPCC Training Must Cover

- Regulations
- Contents of SPCC Plan
- Container management
- Common SPCC problems
- Spills

U.S. AIR FORCE ACADEMY

SPCC Regulations

- Clean Water Act
- Oil Pollution Prevention Act
- 40 CFR 112, Federal SPCC Regulation
- AFMAN 32-1067, Water and Fuel Systems
- AFI 32-7001, Environmental Management
- AFI 23-201, Fuels Management

U.S. AIR FORCE ACADEMY

40 CFR 112 Regulations

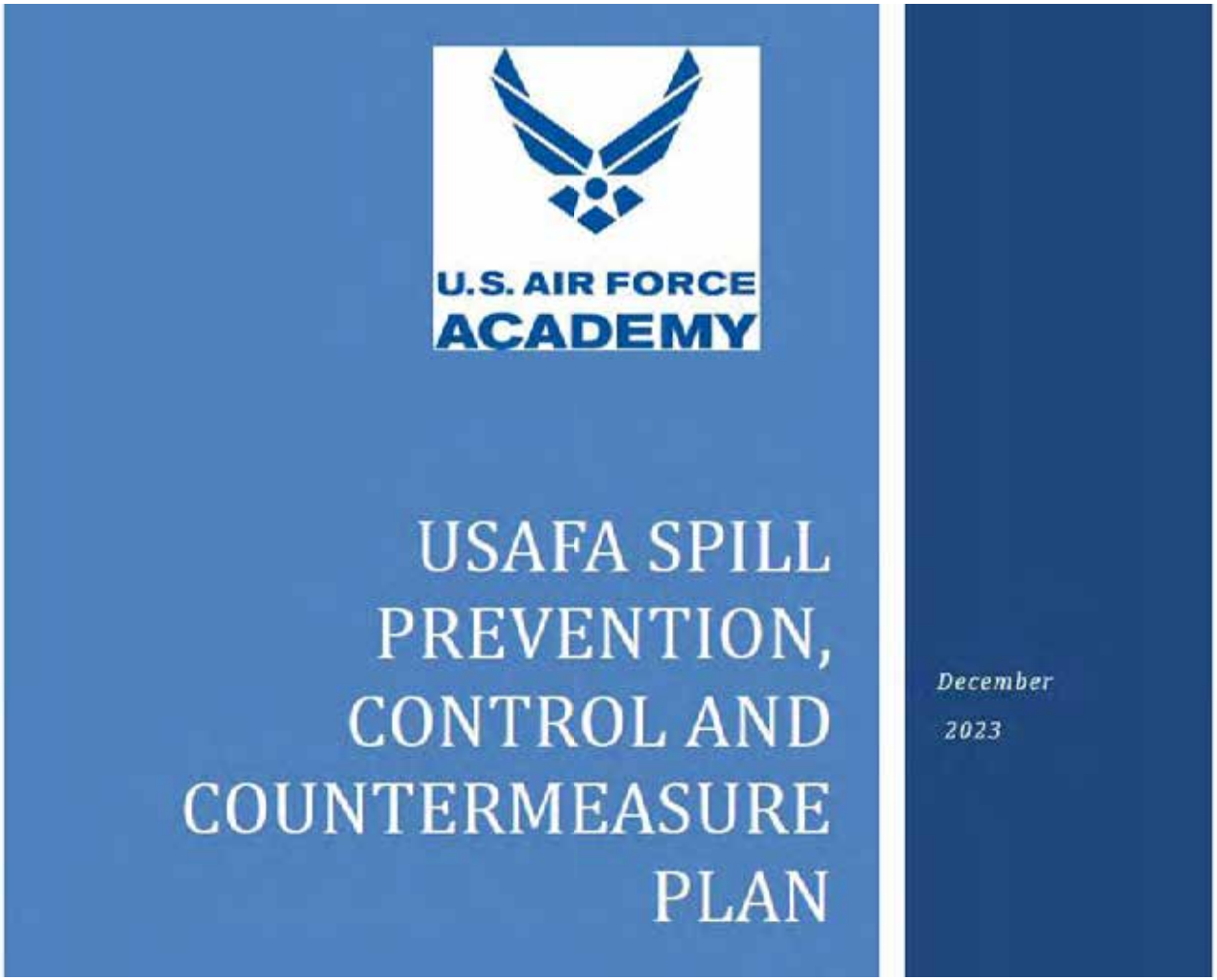
- **Recent Changes:**
  - Applicable if total storage greater than 1,320 gallons
  - Excluded underground storage tanks
  - Expanded the definition of a tank to 55 gallons or greater (includes mobile and fixed equipment)
  - Expanded definition of oil to include animal and vegetable oil
  - Expanded inspections for common industrial practices

40 CFR 112 Requirements

- Requires USAFA to develop and implement an installation specific SPCC Plan to address:
  - Containment and procedures to *prevent* discharges;
  - *Control* measures to keep an oil discharge from reaching navigable waters; and
  - *Countermeasures* to contain, clean up, and mitigate oil discharge.
- All USAFA facilities with oil storage containers of 55 gallons or more are required to implement procedures to prevent, control and respond to potential spills

U.S. AIR FORCE ACADEMY

USAFA SPCC Plan



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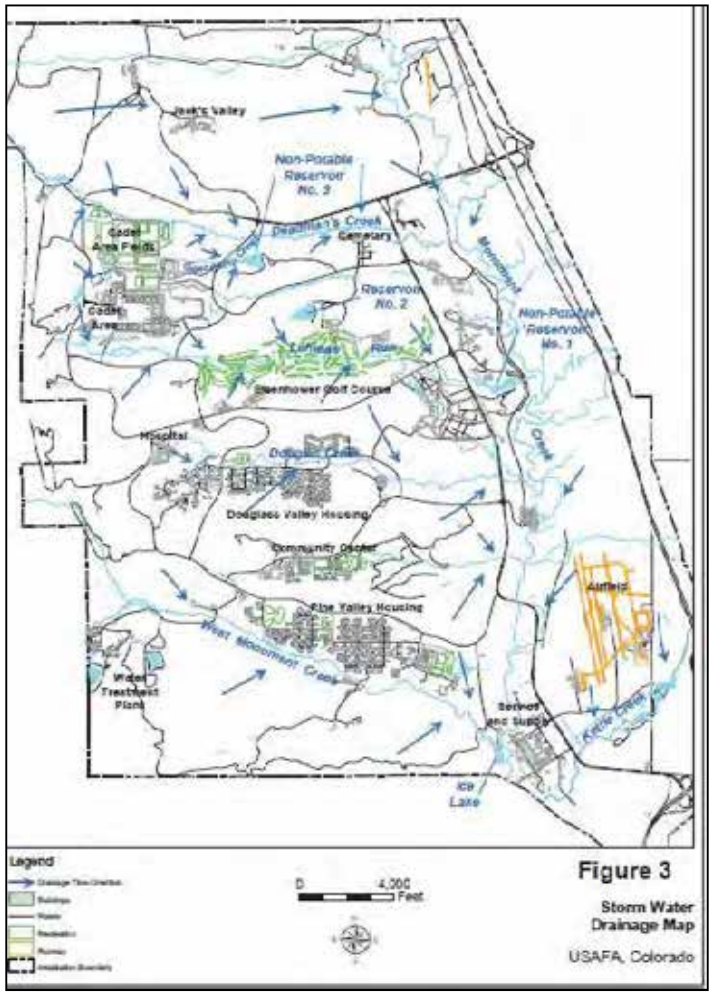
U.S. AIR FORCE ACADEMY

USAFA Drainage Plan



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SPCC Plan Data Sheet

Air Force Academy Site-Specific SPCC Plan Data

Other Spill Prevention Features: N/A

Spill Route Details: A leak from the tank would be contained by the fiberglass wall surrounding the tank. A spill during tank filling and transfer operations or from a rupture of the outer fiberglass wall would flow onto the concrete floor surface. Larger spills would flow south out of the building doors onto the ground surface and flow approximately 300 feet southeast to Lehman Run.

Maximum Refueling Truck Capacity: 500 gallons

Container: 3184-2

Container Type: Aboveground Tank

Container Capacity: 5 - 60 Gallons

Materials Stored: Product Oil

Fail Safe Features: Direct vision gauge on tank

Construction Details: Single walled steel tank

Integrity Test Method: Visual inspections are conducted on a monthly basis in accordance with Section 8.3 of the SPCC Plan.

Annual walk around inspections are conducted in accordance with Section 8.3 of the SPCC Plan.

Secondary Containment Details: Metal containment structure

Secondary Containment Volume: 121 Gallons

Piping Type: N/A

Corrosion Protection: N/A

Piping Details: N/A

Oil Fill and Transfer Details: Product oil is added to these aboveground storage tanks by pumping oil into the tanks from 55-gallon drums. Product oil is removed from these tanks by gravity draining oil via flexible hosing into equipment or smaller containers.

Secondary Containment Drainage Procedure: Any liquid accumulated within the secondary containment is inspected for an oil sheen.

If deemed to be free of oil, accumulated precipitation is discharged to the ground surface.

If determined to be contaminated with oil, accumulated liquids are containerized and picked up by the used oil/oily wastewater contractor for recycling and/or disposal in accordance with applicable regulations.

The date and time of drainage and presence or absence of oil is documented in the Secondary Containment and Drainage Log, or similar form provided in Appendix I of the SPCC Plan.

U.S. AIR FORCE ACADEMY

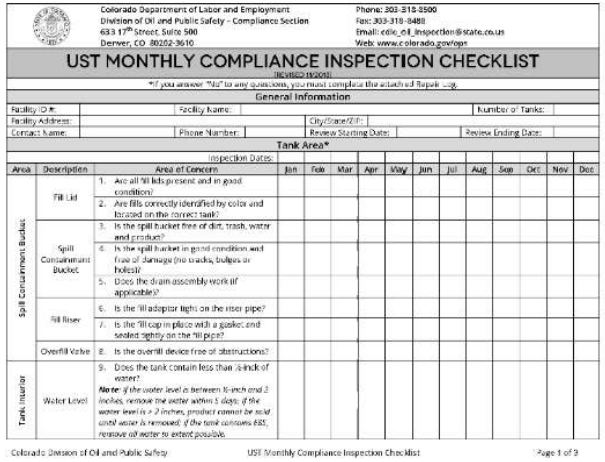
Section 2

UST & AST Inspections

U.S. AIR FORCE ACADEMY

UST & AST Inspections

- KIRA performs monthly UST & AST inspections
- USTs are exempt from SPCC Plan if completely buried (included in the SPCC Plan container inventory)
- If alarm condition occurs on Automatic Tank Gauges (Veeder Root Systems), Notify 10 CES/CEIEC immediately 33



Colorado Department of Labor and Employment
Division of Oil and Public Safety - Compliance Section
633 17th Street, Suite 500
Denver, CO 80202-3610

Phone: 303-318-8500
Fax: 303-318-8488
Email: cdle_oil_inspection@state.co.us
Web: www.colorado.gov/ops

UST MONTHLY COMPLIANCE INSPECTION CHECKLIST

(REVISED 11/2015)

*If you answer "No" to any questions, you must complete the attached Repair Log.

General Information

Facility ID #:	Facility Name:		Number of Tanks:
Facility Address:		City/State/ZIP:	
Contact Name:	Phone Number:	Review Starting Date:	Review Ending Date:

Tank Area*

			Inspection Dates:											
Area	Description	Area of Concern	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Spill Containment Bucket	Fill Lid	1. Are all fill lids present and in good condition?												
		2. Are fills correctly identified by color and located on the correct tank?												
	Spill Containment Bucket	3. Is the spill bucket free of dirt, trash, water and product?												
		4. Is the spill bucket in good condition and free of damage (no cracks, bulges or holes)?												
		5. Does the drain assembly work (if applicable)?												
	Fill Riser	6. Is the fill adaptor tight on the riser pipe?												
		7. Is the fill cap in place with a gasket and sealed tightly on the fill pipe?												
	Overfill Valve	8. Is the overfill device free of obstructions?												
Tank Interior	Water Level	9. Does the tank contain less than ½-inch of water? *Note: If the water level is between ½-inch and 3 inches, remove the water within 5 days; if the water level is > 3 inches, product cannot be sold until water is removed; if the tank contains 6ES, remove all water to extent possible.*												

Colorado Division of Oil and Public Safety | UST Monthly Compliance Inspection Checklist | Page 1 of 3

U.S. AIR FORCE ACADEMY

Inspections: Aboveground Storage Tanks

- Monthly and annual inspections required for all ASTs.
  - Per Section 8.5 of SPCC Plan
- Inspect for leaks, spills, and leaking piping or valves
- Areas inspected:
  - Tank/Piping system
  - Annular space
  - Alarms and overfill devices

U.S. AIR FORCE ACADEMY

Inspections: Secondary Containment

- Inspect secondary containment monthly.
- Verify drain valve is in closed position at all times.
- Remove brush and debris inside secondary containment.
- Always inspect prior to draining.

Drain only if no oil sheen is present

- If oil sheen is present, contact 10 CES/CEIEC. They will pump out the water and dispose of it.

- ***What's wrong with this picture?***
- ***What do you need to do?***
- ***What do you need to record?***

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What is a Sheen?

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Secondary Containment Drainage Log

Secondary Containment Drainage Log

Date and Time of Drainage	Containment Area Drained (ID #)	Presence or Absence of Sheen*	Time of Unlocking and Opening Valve	Time of Closing and Relocking Valve	Quantity of Water Removed	Method of Removal and Disposal	Name and Signature of Operator

U.S. AIR FORCE ACADEMY

Annual AST Inspection Checklist

Annual Inspection Checklist Shop Fabricated and Organizational Tanks.

ANNUAL INSPECTION CHECKLIST

SHOP FABRICATED AND ORGANIZATIONAL TANKS (AFI 32-7044)

This checklist is recorded in STAR and is completed annually to comply with 40 CFR 112.8 requirements and AFI 32-7044 for periodic inspections of Shop Fabricated Aboveground Storage Tanks (ASTs) and Organizational ASTs.

Tank No.	
Tank Location	
Type Fuel Stored	
Tank capacity (gallons)	
Inspector Name	Scott Schneider
Organization	10 CES / CEIEC
Inspector Duty Phone	719-310-9953
Date of Inspection	

No	ITEM	YES	NO	N/A
1	Are there water accumulations, debris, vegetation, cracks, fire hazards or holes observed in the tank containment?			
2	Are containment drain valves in working order and closed?			
3	Is there evidence of tank settlement, foundation washout, or foundation cracking?			
4	Is there any cracking, spalling or severe corrosion of tank supports and/or saddles?			
5	Are ladders, platforms, handrails, stairs secure with no indication of severe corrosion and/or damage?			
6	Is the Normal Vent clear and free of obstructions?			
7	Is vent located five feet or more from adjacent buildings?			
8	For class I fuels (i.e. MOGAS, AVGAS), are normal vents located at least 12 feet above grade?			
9	Are there emergency vents for the primary tank?			
10	Is emergency vent operable (vent cover can be lifted by hand)?			
11	Are there emergency vents for the secondary tank if a double wall tank?			
12	Is the secondary tank emergency vent operable (vent cover can be lifted by hand?)			
13	In emergency vent operable (vent cover can be lifted by hand)?			
14	Are all valves in working order?			
15	Is there evidence of paint coating failure or severe corrosion of tank and piping surfaces			
16	Is there evidence of corrosion at pipe stand and piping interfaces (undercutting of pipe) including underside of piping?			
17	Is there cathodic protection for underground metallic piping?			
18	Is cathodic protection working and being checked regularly?			
19	Has the tank level indicating device been tested and is it in working order?			
20	Is tank level gauge viewable from the filling point?			
21	Has the overflow shutoff mechanism (shut off valve or float valve) been tested and is in working order?			
22	Is the High Level Alarm present and in working order?			
23	Are anti-siphon valves operable (if present)?			
24	Is the tank grounded?			
25	Are grounding straps secure and in good order?			
26	Are wiring, conduit and junction boxes in good condition?			
27	Are electrical components in classified conduit and enclosures as required?			
28	Are traffic bollards and/or protection from vehicle traffic in place where required?			

Inspector Signature	Date

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Section 2

Shop Inspections

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Spill Prevention Planning - Inspections

- **Inspection Requirements**
  - Must be documented
  - Maintain records for at least 3 years
- **Shop Level Inspections**
  - *Monthly for tanks, drums, portable equipment*
  - *Email to Scott Schneider: scott.schneider.3.ctr @us.af.mil*
- **Additional Required Inspections**
  - Quarterly for elevators and transformers
  - 10-year integrity test AST tanks (wall thickness)

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Shop Level Inspections:

Drums and Portable Containers must be inspected monthly:

- In good condition
- Properly labeled
- Closed
- Stored in secondary containment
- No evidence of water
- No evidence of debris, spills, leaks, or fire hazard
- Drainage valves closed
- Access to and from drums are clear

Monthly Inspection Checklist

10th Air Base Wing

STI SP001 Portable Container Monthly Inspection Checklist

General Inspection Information:

Inspection Date: _____ Retain Until Date: _____ (36 months from inspection date)

Prior Inspection Date: _____ Inspector Name: _____

Containers Inspected (ID #'s): _____

Inspection Guidance:

- For equipment not included in this Standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a Certified Inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- (*) designates an item in a non-conformance status. This indicates that action is required to address a problem.
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a Certified Inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for 36 months.

Item	Area: _____		Area: _____		Area: _____		Area: _____	
1.0 AST Containment/Storage Area								
1.1 ASTs within designated storage area?	☐Yes	☐No*	☐Yes	☐No*	☐Yes	☐No*	☐Yes	☐No*
1.2 Debris, spills, or other fire hazards in containment or storage area?	☐Yes*	☐No	☐Yes*	☐No	☐Yes*	☐No	☐Yes*	☐No
1.3 Water in outdoor secondary containment?	☐Yes*	☐No	☐Yes*	☐No	☐Yes*	☐No	☐Yes*	☐No
1.4 Drain valves operable and in a closed position?	☐Yes	☐No*	☐Yes*	☐No	☐Yes*	☐No	☐Yes*	☐No
1.5 Egress pathways clear and gates/doors operable?	☐Yes	☐No*	☐Yes*	☐No	☐Yes*	☐No	☐Yes*	☐No

U.S. AIR FORCE ACADEMY

Inspections: Elevators and Oil-filled Transformers

- Elevators and transformers are stationary equipment require oil to function properly
- May include other equipment meeting this criteria
- Inspect quarterly
  - Look for possible breaches of container integrity, leaks, spills

Oil-Filled Transformer and Process Equipment Inspection Checklist

Oil-Filled Transformer and Process Equipment Inspection Checklist

Container Number:
Building/Area Designation:
Storage/Container Tank Type (Transformer, Elevator, Hydraulic Lift, etc.):
Inspection Date:
Previous Inspection Date:
SPCC Coordinator:
SPCC Coordinator Phone Number:
Organization:

Inspection Item	Satisfactory	Unsatisfactory	Comments
Oil-Filled Transformer and Process Equipment Inspection			
Check oil-filled tanks, containers, and equipment for deterioration, corrosion, and deformation.			
Determine if leaks or small seeps are present at seams, rivets, gaskets, nozzles, etc.			
Check the foundation and support for heaving, structural cracking, and/or weathering.			
Ensure fill ports are closed.			
Inspect the drain pipe and valve associated with the transformer. Ensure no leaks are present.			
Inspect for evidence of spills or staining.			
Secondary Containment Inspection			
Check the secondary containment structure (if present) for deterioration, cracks, heaving, etc.			
Ensure secondary containment drain valve is closed.			
Confirm secondary containment berm is free of water.			

Notes:
SPCC = Spill prevention, control, and countermeasure

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Portable Equipment

- **Portable tanks, including tanks on construction sites, require secondary containment and must be inspected monthly**
  - ***If moved from storage location* >24 hours, must be placed on portable secondary containment**

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Common Problems

- ***Inspections not being completed***
- Damaged spill kits, full of rainwater
- 10 CES/CEIC can provide Spill kits.
- Missing secondary containment around drums
- If need help, contact 10 CES/CEIEC 333-5826

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Quiz Question #1

As required by the USAFA SPCC Plan, Portable Containers must be inspected:

A. Monthly

B. Quarterly

C. Annually

D. Monthly and Annually

E. Monthly and Quarterly

F. Quarterly and Annually

G. Monthly, Quarterly, and Annually

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Quiz Question #2

- True or False: Secondary containment structures must be inspected and results documented prior to draining the containment structure of accumulated stormwater?
  - True
  - False

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Section 3

Spill Response

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Spill Prevention - Operations

- **In general, all equipment must be operated in a manner that minimizes spills.**
  - **Training all personnel on proper equipment use and spill response, know where your spill kit located**
  - **Maintaining equipment in proper working order**
  - **Be present and supervise all fill and transfer operations**
  - **Following manufacturer recommendations**

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Spill Prevention – Fueling Operations

- For all transfers of POL
  - Ensure any down stream storm drains are covered prior to transfer
  - Ensure spill cleanup materials are available
  - Ensure spill buckets/ drip pans are in place
  - Notify 10 CES/CEIEC if any spill occurs

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Spill Prevention - Operations

Spill Prevention

Operating Procedures: for routine handling of products (diesel fuel, gasoline, hydraulic fluid, motor oil, etc.) to prevent a discharge of fuel/oil.

- Always use secondary containment
- Prevent overfilling of tanks, use approved containers
- Maintain gauges and alarms
- Perform regular inspections
- Teach the same filling/transfer procedures to all personnel
- Ensure everyone who transfers fuel to remain at the location at all times
- Know where your emergency shutoff valves are located
- Maintain a clean and orderly shop

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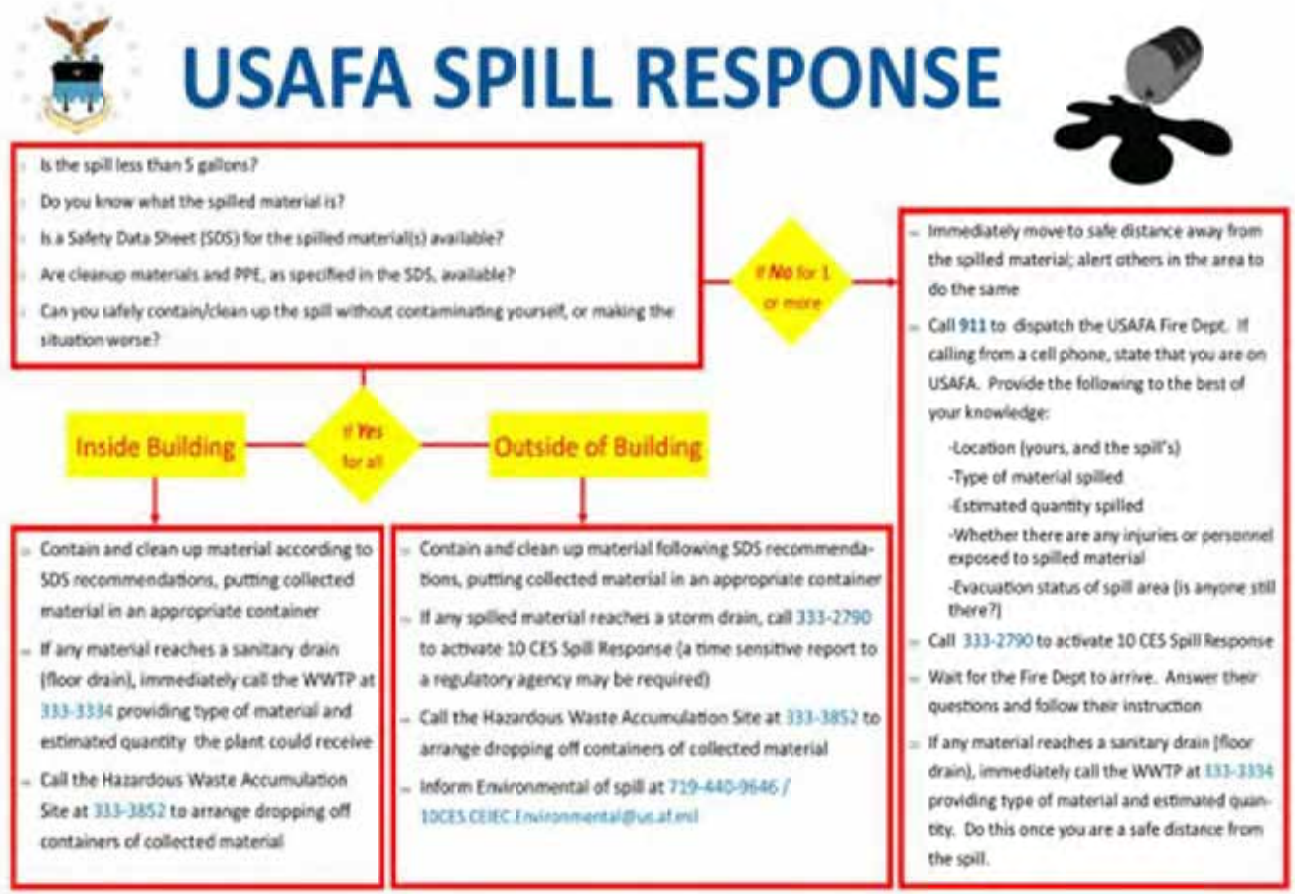
Spill Response Poster



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Spill Response

- Spills < 5 gallons if controlled can be cleaned-up, and disposed of by shops.
- Spills > than 5 gallons but < 55 gallons are cleaned up by KIRA. Call Production Control 333-2790
- Spills > 55 gallons may require a HAZMAT contractor for cleanup. Call 911 Fire Department and Production Control 333-2790

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Spill Response

- Safety First - Don't Take Risks
- Minimize exposure (wear proper PPE)
- Stop the spill at its source
- Warn others
- Call the Fire Department and/or Production Control
- Isolate the area (protect the storm drains)
- Spread absorbent material and clean up spill
  - No stainage left on dirt
  - Contact 10 CES/CEIEC for disposal guidance
- Haz Mat will dispose of absorbent material

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Spill Response

Isolate the Area

Call the Fire Department (if necessary)

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Spill Response

Protect Storm Drains

U.S. AIR FORCE ACADEMY

Spill Response

Spread Absorbent Material and Cleanup the Spill

U.S. AIR FORCE ACADEMY

Incident Reporting

- Following a spill event, the Unit Commander is responsible for submitting a written Environmental Incident Report:
  - Who, What, Where, When, Why and How Much?
  - Source of release
  - Type and quantity
  - Cause of release and areas impacted
  - Contributing factors
  - Summary of actions taken
  - Preventive actions to be taken to prevent in future

U.S. AIR FORCE ACADEMY

Quiz Question #3

- **Following a spill, who is responsible for submitting the written Environmental Incident Report to the Environmental Element?**
  - A. Unit Environmental Coordinator
  - B. Fire Department
  - C. Unit Commander
  - D. None of the above

U.S. AIR FORCE ACADEMY

Location-Specific Data

- If you notice any information in your site-specific data sheets that is inaccurate, or if you plan on changing, adding, or removing oil storage locations, contact 10 CES/CEIEC as soon as possible.

Contact Information

Who to Call – 10 CES/CEIEC

- To report a spill, call Production Control 719-333-2790
- Scott Schneider 719-333-5826
  scott.schneider.3.ctr@us.af.mil
- Barry Schatz – Chief, Environmental Element
  719-333-6716 (office), 719-351-4198 (cell)
  barry.schatz.2@us.af.mil
- Barry Schatz – POL/Tanks/ SPCC Plan 719-333-6716
- Inform USAFA Environmental Division of spill at
  719-440-9646/ 719-333-6716
  10CES.CEIEC.Environmental@us.af.mil
- Hazardous Waste – 719-333-3852

Attachment M
Spill Events Documentation

COLORADO
Water Quality Control Division
Department of Public Health & Environment

Five day reporting form

Incident / spill / sanitary sewer overflow release

Use this form to report incidents impacting waters of the state

The Water Quality Control Division distinguishes between reporting requirements for incidents that occur at entities operating under a Colorado Discharge Permit System (CDPS) permit and those resulting from non-permitted activities.

Permitted activities - Reporting and management of non-compliance incidents and spills that occur as a result of permitted activities should be performed in accordance with the specific requirements in the notifications section of your permit. You may use this form to submit the information requested in the permit.

Non-permitted activities - In the case of an activity where a permit does not address reporting of, or response to, a given spill please submit a written summary of the event, your response, and clean up efforts to the division within five working days of the date of the event. This form is provided for your convenience. If you have any questions please contact the division's field services staff person assigned to your spill case.

Prior to the five working day deadline you may request an extension to submit the report if needed for sampling analysis or other reasons. To request an extension please send an email to the division's field services staff person assigned to your spill case or to the spill administrator. The field services contact list is available at: www.colorado.gov/cdphe/wq-inspection-services-contact-us.

Please send the completed form or report with signature to the division's field services spill administrator:

Michelle Thiebaud
222 S. Sixth Street, 232
Grand Junction, CO 81501

Telephone: 970-248-7150
Fax: 970-248-7198
Email: michelle.thiebaud@state.co.us

1. Incident background information					
Incident/spill number (division provided)	2024-394	Date of event	5/6/2024	County	El Paso

Type of incident / spill / SSO (check one)		
☐ Sanitary sewer overflow	☐ Potable water/reuse water/ reclaimed water	☐ Biosolids
☐ Wastewater treatment plant bypass or upset (authorized outfall point)	☐ Petroleum product	☐ Oil or gas field production spill
☐ Wastewater treatment plant spill or overflow (other than outfall)	☐ Chemical	☒ Other Biocide from Porta Potties

Estimated volume released	Approximately 40 gallons
Size and depth of area affected	100 feet X 5 Feet

Contact information			
Potentially responsible party contact name	Barry Schatz 10CES/CEIE		
Potentially responsible party company/agency name	US Air Force Academy		
CDPHE Permit number and facility name (if applicable)	CO0020974 WWTP NPDES Permit		
Email address	barry.schatz.2@us.af.mil	Phone	(719) 333-6716

2. Incident information: Please provide the following information.

A. Describe incident including source, cause, and location (e.g. address, latitude/longitude).

During the morning of May 6, 2023, high winds (40 -90 miles per hour) blew over Porta-potties at the US Air Force Academy Athletic Fields. Four Porta-potties were blown into Deadman's Creek. Approximately 40 gallons of biocide were spilled into the Creek. The creek had flowing water at the time of the spill. The area of the flowing water in the channel was approximately two feet wide. A map an photographs of the spill area are attached.

B. Material released, e.g. untreated wastewater, specific chemical or product, biosolids. Please attach the OSHA Material Safety Data Sheets for any and all chemicals or products in spill or release.

The material release was a biocide used in the porta potties. It also contained a small amount of sewage. Product name is Truex Elite Series Liquid. A SDS of the biocide is attached.

C. Actual or estimated duration of the event and time spill was fully controlled/stopped. If release is still occurring, the date and time the release is expected to be stopped.

The spill was cleaned up the next day.

D. Describe measures taken or planned to contain, reduce, and clean up spill or release.

The contractor who is responsible for the porta potties cleaned up as much of the spill as he could. Approximately 10- 15 gallons were recovered. The material is biodegradable. See attached SDS.

E. Describe steps taken or planned to prevent reoccurrence.

In the future Porta-potties will be staked down with additional anchors.

3. Incident impact to state waters (As defined in § 25-8-103(19), C.R.S.).
Examples of state waters include: stormwater conveyances (when they discharge to surface water), perennial streams, intermittent or ephemeral gulches, ditches, ponds, lakes, reservoirs, irrigation canals, wetlands and groundwater.

A. Did flow or materials reach surface water of the state? If so, identify the water body or bodies and describe the path of flow. What quantity of material reached the surface waters and what was the resulting impact?

Yes. Deadman's Creek it is a small intermittent creek the flows to the east. Approximately 30 gallons of the biocide were lost to the creek. There was no visible impact to the creek.

B. Did flow or materials reach groundwater of the state? If so, identify the water body or bodies and describe the path of flow. If yes, what quantity of material reached the ground or groundwater and what was the resulting impact?

No

C. Did the incident include any of the following? If so, please include additional details below.

☒ Chemical release	☐ Fish kill	☐ Sheen on water

The material released was a biocide. The material is a mixture of Dipropylene Glycol, fragrance and three trade secrets.

D. Were any water quality samples or other samples taken? If so, please describe sampling process, sampling location(s) in relationship to the incident, i.e. up/down stream and attach results.

No

4. Incident impact to areas or water users

A. Describe the potential impact of the incident/spill/SSO to public use areas or downstream water users. This includes parks and swim beaches or public water system sources and irrigation diversions.

None

B. Were the impacted area users and downstream water users notified and describe the method of notification, e.g. signs posted, via phone.

No

C. List any downstream users who were notified.

None

I hereby certify that the information presented above is accurate and complete.

Signature	Name and title	Company, organization	Date
Barry Schatz	Barry Schatz, Environmental Chief	ASAF, 10 CES/CEIE	5/13/2024

COLORADO
Department of Public Health & Environment

Five day reporting form

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Use this form to report incidents impacting waters of the state

The Water Quality Control Division distinguishes between reporting requirements for incidents that occur at entities operating under a Colorado Discharge Permit System (CDPS) permit and those resulting from non-permitted activities.

Permitted activities - Reporting and management of non-compliance incidents that occur as a result of permitted activities should be performed in accordance with the notification requirements in your permit. You may use this form to submit the information requested in the permit.

Non-permitted activities - In the case of an incident where you do not have a CDPS permit, please use this form to submit a written summary of the event **within five working days** of the date of the event. If you have any questions, please contact the division's field services staff person assigned to your spill case or the Field Services Spill Administrator.

For extensions to the five working day deadline (for sampling analysis or other reasons) please send a detailed email with the reason for the request to the Field Services Spill Administrator at michelle.thiebaud@state.co.us . Please send the completed form or report with signature to the division's field services spill administrator at michelle.thiebaud@state.co.us (970-248-7150).

1. :Incident background information					
Incident/spill number (division provided)	2024-678	Date of event	7/16/2024	County	El Paso

Type of incident / spill / SSO (check one)		
☐ Sanitary sewer overflow	☐ Potable water/reuse water/ reclaimed water	☐ Permit Exceedance
☐ Wastewater treatment plant bypass or upset (authorized outfall point)	☒ Petroleum product	☐ Oil or gas field production spill
☐ Wastewater treatment plant spill or overflow (other than outfall)	☐ Chemical	☐ Other

Estimated volume released	29 gallons
Size and depth of area affected	1000 ft2 area, 1/2 inch depth

Contact information			
Potentially responsible party contact name	Amy Balek		
Potentially responsible party company/agency name	US Air Force Academy, 10CES/CEIE		
CDPHE Permit number and facility name (if applicable)	COR-042007		
Email address	amy.balek@us.af.mil	Phone	312-333-2937

2. Incident information: Please provide the following information.

A. Describe incident including source, cause, and location (e.g. address, latitude/longitude).

Loose storm drain ring flipped when a trash truck drove over it and pierced the fuel tank and transmission. 20 gallons diesel spilled and up to 9 gallons of transmission fluid spilled. Of this mixture, it is estimated 1-5 gallons reached the storm drain per statements of individuals at the scene and 15-19 gallons of mixture was recovered. Spill contained on pavement, except for where it entered the storm drain. At the stormwater outfall, there was no visible sheen, but strong odor present. Mixture of water, diesel fuel, transmission oil at the outfall is estimated at 50 gallons.

B. Material released, e.g. untreated wastewater, petroleum product, specific chemical or product. Please attach the OSHA Material Safety Data Sheets for any and all chemicals or products in spill or release.

Diesel fuel
Transmission fluid

C. Actual or estimated duration of the event and time spill was fully controlled/stopped. If release is still occurring, the date and time the release is expected to be stopped.

Total duration of spill and cleanup – 72 hours.
July 16, 2024, 1145 – spill occurred. July 16, 2024, 1900 – source spill cleanup completed.
July 17, 2024, 0800 to 1500 – stormwater outfall identified from maps and visually observed; cleanup contractors contacted.
July 18, 2024, 0900 to 1100 – initial cleanup of stormwater outfall conducted; trash and petroleum product removed.
July 19, 2024, 1100 – stormwater outfall cleanup completed; absorbant pads used to remove remaining product, i.e., sheen.

D. Describe measures taken or planned to contain, reduce, and clean up spill or release.

Petroleum products at the site of the spill were cleaned up within 8 hours of the spill occurrence. Absorbant pads were placed at the outfall overflow to prevent petroleum product from entering the dry gulch within 24 hours of the spill occurrence. The stormwater outfall was completely cleaned up within 72 hours of the spill.

E. Describe steps taken or planned to prevent reoccurrence.

The storm drain ring is being repaired to prevent future occurrence.

3. Incident impact to state waters (As defined in § 25-8-103(19), C.R.S.).
Examples of state waters include: stormwater conveyances (when they discharge to surface water), perennial streams, intermittent or ephemeral gulches, ditches, ponds, lakes, reservoirs, irrigation canals, wetlands and groundwater.

A. Did flow or materials reach surface water of the state? If so, identify the water body or bodies and describe the path of flow. What quantity of material reached the surface waters and what was the resulting impact?

No. Stormwater collects in the rectangular concrete outfall structure. Collected water overflows to an unnamed dry gulch that flows into Deadman's Creek. Deadman's Creek flows into Monument Creek. The spill did not reach Deadman's Creek.

B. Did flow or materials reach groundwater of the state? If so, identify the water body or bodies and describe the path of flow. If yes, what quantity of material reached the ground or groundwater and what was the resulting impact?

No.

C. Did the incident include any of the following? If so, please include additional details below.

☐ Chemical release	☐ Fish kill	☒ Sheen on water

Petroleum product was observed in the outfall collection structure and sheen was observed during the cleanup process. No sheen was observed after cleanup was completed.

D. Were any water quality samples or other samples taken? If so, please describe sampling process, sampling location(s) in relationship to the incident, i.e. up/down stream and attach results.

No samples taken.

4. Incident impact to areas or water users

A. Describe the potential impact of the incident/spill/SSO to public use areas or downstream water users. This includes parks and swim beaches or public water system sources and irrigation diversions.

No impact.

B. Were the impacted area users and downstream water users notified and describe the method of notification, e.g. signs posted, via phone.

Not applicable.

C. List any downstream users who were notified.

Not applicable.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment."

Signature	Name and title	Company, organization	Date
Typed Signature	Amy Balek, 10 CES/CEIE Environmental Compliance	USAFA, 10 CES/CEIE	7/22/2024