Fort A.P. Hill Integrated Wildland Fire Management Plan

January 2021

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DOCUMENTATION CONTROL PAGE

Fort A.P. Hill – Environmental Management System

Environmental and Natural Resources
Division Directorate of Public Works
Fort A.P. Hill

Originating Office: DPW-ENRD	**Review Frequency:** Annually

Document Title:

Fort A.P. Hill Integrated Wildland Fire Management Plan (IWFMP)

The IWFMP is prepared IAW AR 420-1, *Army Facilities Management,* (12 February 2008) - Ch. 25 Fire and Emergency Services, AR 200-1 *Environmental Quality – Environmental Protection and Enhancement* (December 2007), and the Army Memorandum on *Army Wildland Fire Policy Guidance* (September 2002).

The IWFMP was developed to provide direction, continuity, and operational procedures in relation to the wildland fire management activities on Fort A.P. Hill. This plan provides for programmatic safety and effectiveness, establishes roles and responsibilities for integration of directorates and reflects the policies established in the Installation Emergency Management Plan (IEMP). The IWFMP addresses fire use for land management and assists in mitigating interruptions to training operations caused by fire. The plan identifies resources, safety considerations and responsibilities for both wildfire incident response and prescribed burning operations.

This plan is to be reviewed annually and updated to capture procedural or supporting document changes. A thorough review and revision will occur every five years.

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Fort A.P. Hill

Integrated Wildland Fire Management Plan

Directorate of Public Works
Environmental and Natural Resources Division

January 2021

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Integrated Wildland Fire Management Plan
U.S. Army Garrison Fort A.P. Hill

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January 2021

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EXECUTIVE SUMMARY

INTRODUCTION

This Integrated Wildland Fire Management Plan (IWFMP) is prepared in accordance with Army Regulation (AR) 420-1, *Fire and Emergency Services* (12 February 2008), AR 200-1, *Environmental Quality – Environmental Protection and Enhancement* (13 December 2007), and the Army Memorandum on *Army Wildland Fire Policy Guidance* (04 September 2002). Implementation of these regulations and guidelines are necessary to address safety, land management, and environmental compliance of the wildland fire management program on Fort A.P. Hill.

PURPOSE AND NEED

Wildland fires occur as a matter of routine on most Department of Defense (DoD) lands, including Fort A.P. Hill, where live-fire weapons training or training exercises using pyrotechnics frequently occur. Consequently, prescribed burning and wildfire suppression are two activities that occur routinely on Fort A.P. Hill for land management and resource protection purposes. These operations are conducted jointly with personnel from the Directorate of Public Works (DPW) Environmental and Natural Resources Division (ENRD) Forestry Branch and Fish and Wildlife Branch, DPW Roads and Grounds, the Directorate of Emergency Services (DES) Fire Department and the Directorate of Plans, Training, Mobilization, and Security (DPTMS) Range Control and Emergency Management personnel.

Coordination of efforts in the application of fire as a land management tool and the control of fire unintentionally ignited on the installation is required to ensure safety, efficiency, and resource protection. The IWFMP was developed to provide direction and continuity and to establish operational procedures to guide all wildfire management activities on Fort A.P. Hill for programmatic safety and effectiveness. The IWFMP presents the actions that will assist in the mitigation of interruptions to training operations caused by fire and will integrate wildland fire management within Fort A.P. Hill's natural resource management. The responsibilities and procedures outlined in this plan are intended to streamline management activities and incident response by establishing agreement and understanding between multiple directorates and other stakeholders.

SCOPE AND AUTHORITY

This plan applies to all personnel who work, live, and train at Fort A.P. Hill and are directly involved with wildland fire management on the installation.

The Garrison Commander has overall authority for implementation of the IWFMP per AR 200-1. Fort A.P. Hill wildland fire program management is a shared responsibility between DES and DPW. Both DES, Fire Department's Fire Chief and DPW, Forestry Branch's Installation Forester will have authority and leadership positions related to wildfire response and prescribed burning. The Installation Forester will be designated the Wildland Fire Program Manager. As a general rule, the Fire Chief and Wildland Fire Program Manager will operate a Unified Command in relation to wildfire response,

suppression activities, and related decisions. Likewise, the Wildland Fire Program Manager will make all operational decisions regarding the planning and implementation of prescribed fires and operate as, or designate, the on-site Prescribed Burn Boss. These responsibilities include prescribed fire plan development, prescription approval, and the completion and updating of this plan. Decisions on strategy, personnel and resource placement and use, and fire impacts may be made cooperatively on any wildland fire incident as needed.

This plan requires annual updates to capture changes in procedures, qualified personnel, and available wildland fire equipment and other resources. This plan will require a five-year revision in 2025 to update the overall installation wildland fire management program intent and approach.

WILDLAND FIRE MANAGEMENT - GENERAL

This portion of the IWFMP addresses areas of wildland fire management that are applicable to wildfire response and prescribed burn programs and procedures.

The *Army Wildland Fire Policy Guidance*, AR 200-1 and other federal and Army regulations guide installations to consider the environmental and military mission impacts of all wildland fire activities, wild or prescribed. The IWFMP addresses ecosystem disturbances, both beneficial and detrimental, smoke management techniques and air quality impacts, cultural resource awareness, threatened and endangered species requirements, and the managed training setting. Environmental considerations also incorporate real property considerations when conducting prescribed burns or suppressing wildfires near facilities. Guidelines that focus on the use and suppression of wildland fire in relation to each of these features are addressed in the IWFMP. Mission considerations including management of the training landscape (missionscape), scheduling, the use of munitions and incendiary devices, unexploded ordnance, and the presence of tenant units are also addressed.

Extensive notification procedures are in place to inform, educate, and alert Fort A.P. Hill personnel and the public of impending or active wildland fire activities. These include press releases, social media announcements, Caroline Alert System, the Alert! system, and phone calls or electronic mail communication. The procedure and expectations for the use of public notification in relation to wildland fire and smoke are outlined in this plan.

Due to the complexity of fire behavior and the unpredictability of influence from weather, firefighters need both classroom and experiential training to perform their duties knowledgably and safely. The basic components of fire fighter training will be acquired and maintained by fire response personnel at Fort A.P. Hill. The purpose of this section is to present all required and recommended training to levels exceeding minimum requirements as established by the U. S. Army, National Wildfire Coordinating Group, or Fort A.P. Hill Command. This section addresses certification types, training opportunities and physical fitness standards.

When severe wildland fire situations occur as a result of extreme fire weather, wildfires can cause extensive risk and loss of life, property, and resources. Wildfire prevention is focused on reducing or eliminating the unintentional ignition of wildfires and on the reduction of risks that would contribute to a severe wildland fire situation. Prevention efforts require an analysis of risks, hazards, and values, and require education, awareness and preparedness.

Wildland fire prevention requires action to be taken to reduce the potential impact of identified risks and hazards. The first step in wildfire prevention is identifying the risks and hazards. Live-fire range utilization, a forested or grassland setting, and training resources and structures are identified as risks. The fuel loading located in the natural setting of the installation is identified as a hazard based on accepted definitions. A Fire Danger Rating (FDR) system is used to raise awareness within and modify training activities to reduce risk. In addition, prescribed burning is used to reduce fire hazards on the installation. This section of the IWFMP outlines these mitigation actions that increase awareness and manage identified hazards on Fort A.P. Hill. The acceptable processes, procedures, and guidelines associated with these actions are also described and this section includes a thorough description of prescribed burning on Fort A.P. Hill.

The communications plan, installation firebreak system and smoke management plan are all specifically addressed in this section of the IWFMP.

WILDFIRE RESPONSE AND MANAGEMENT

The locally high fire frequency resulting from the routine use of pyrotechnics and incendiary devices on Fort A.P. Hill requires wildland fire control preparedness. Depending upon weather and fuel loading conditions, the wildfire activity could have serious and long-term effects on Fort A.P. Hill, the training mission, and the surrounding communities.

To help limit and alleviate the potential for serious fire related damages and lost training hours, a comprehensive fire reporting, personnel notification, and control plan has been developed and implemented. This portion of the IWFMP describes this control plan and outlines the appropriate response procedures, suppression strategies, and wildland firefighter safety to apply in suppression activities. The potential for multi-directorate or multi-agency response requires a high-level of preparation and integration with the Fort A.P. Hill Installation Emergency Management Plan (IEMP) and the Incident Command System (ICS) Plan for Fort A.P. Hill.

PRESCRIBED BURNING

Fort A.P. Hill conducts large-scale (5,000-15,000+ acres) prescribed burning on an annual basis to decrease the fuel hazards in order to reduce fire risk. Reduction of wildfire occurrence results in decreased range shut-down and optimizes live-fire training availability on the installation. Prescribed fire also creates more open understory conditions improving forest setting accessibility and maneuverability of military units during training operations. The Forestry Branch also conducts prescribed burning in conjunction with silvicultural activities such as site preparation following a timber harvest,

to control hardwood encroachment in pine stands, or to foster oak regeneration in hardwood stands. Additional ecological benefits of prescribed burning include nutrient recycling, herbaceous vegetation re-growth and establishment, and a reduction in understory density to benefit wildlife habitat. However, military training needs and land use requirements constitute the driving force behind the application of wildland fire management on this landscape and the need for this plan.

The Wildland Fire Program Manager is responsible for overseeing all aspects of the prescribed fire program to include planning, decision-making, coordination, implementation, and monitoring. This portion of the plan describes the procedures required for planning, prescribing, preparing, executing, and evaluating prescribed fires.

IMPLEMENTATION

Implementation involves the process and procedures for carrying out wildland fire management activities to meet the military mission and the stewardship requirements defined by federal regulations. IWFMP implementation requires the integration of programmatic responsibilities, resources, and skill sets. The identified action items will move this wildland fire management program towards meeting the goals in this plan and result in a more effective, sustainable, adaptive program.

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TABLE OF CONTENTS

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1. INTRODUCTION

The intent of this chapter is to provide general background information to serve as a foundation for the following chapters.

1.1. INTRODUCTION, NEED, AND PURPOSE

The purpose of this Integrated Wildland Fire Management Plan (IWFMP) is to provide the reader with comprehensive information regarding the different components, processes, Standard Operating Procedures (SOP), risk management strategies, and Office of Primary Responsibility (OPR) for the installation's wildland fire management program.

A wildland fire is defined as any non-structure fire that occurs in vegetation or natural fuels including:

- Wildfires – Unplanned fires including those started by lightning, missions, arson, carelessness, escaped prescribed fire projects, etc.
- Prescribed Fire – Any fire purposely ignited to meet specific land management objectives.

The importance of wildland fire management to DOD is evidenced by DODI 6055.06, which mandates that any installation with burnable vegetation have an IWFMP. In order to facilitate interagency cooperation and standardization, this plan is written following the general guidance of the Interagency Wildland Fire Management Plan template, with modifications to streamline and to address mission-specific aspects of wildland fire management not encountered by other wildland agencies. The IWFMP is written as a supporting document for implementation of the Integrated Natural Resources Management Plan (INRMP). It also supports a coordinated approach to wildfire response and risk mitigation that includes Fire and Emergency Services (FES), installation Natural Resources personnel and the Army. This plan addresses the specific fire related supporting goals and objectives identified in the INRMP as well as existing SOPs for wildfire response. Implementation of this IWFMP will support achievement of fire related resource management and mission support objectives.

1.2. INSTALLATION LOCATION, SIGNIFICANT RESOURCES, AND MISSION

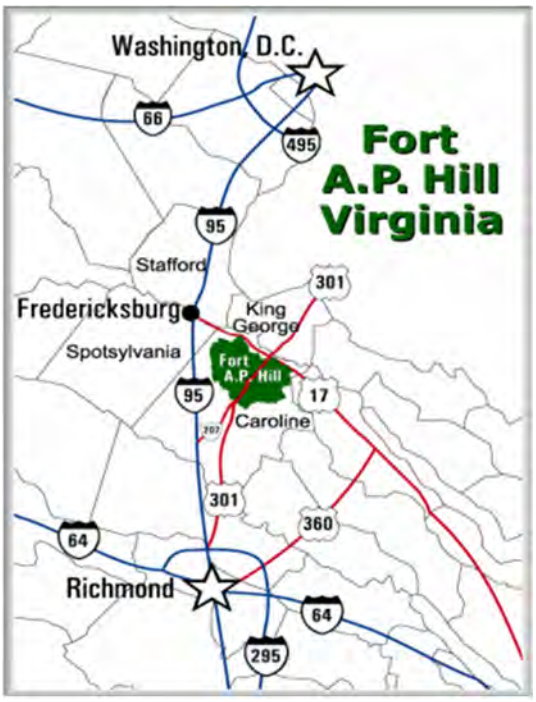

Figure 1.2-A: Fort A.P. Hill, Virginia Location Map

Fort A.P. Hill is a 75,794-acre (30,686-ha) United States Army installation locate in Caroline county, Virginia, situated between the metropolitan areas of Richmond and Washington, DC (Figure 1.2-A). Fort A.P. Hill is the sixth largest Army installation east of the Mississippi River consisting of a 27,000-acre live fire Range Complex and approximately 49,000 acres of non-live fire maneuver training areas (MTA). The installation serves as a year-round training facility for active and reserve Army components, other Department of Defense (DoD) service branches and federal law enforcement to meet its mission of providing realistic joint and combined arms training, logistics and support, enabling America's defense forces to win on the twenty-first-century operational environment. US route 301 bisects the installation into north and south areas. Situated within the southeastern coastal plain, the terrain varies from 9 feet (2.7 m) to 223 feet (68m) above mean sea level, resulting in flat or rolling areas across much of the installation. Wildland fires occur as a matter of routine on most DoD lands where live-fire weapons training or training exercises using pyrotechnics occur. Consequently, many DoD lands rely on prescribed burning programs to manage their lands as the primary tool for wildland fuel reduction. Prescribed burning and wildfire suppression are two activities that occur routinely on Fort A.P. Hill for land management and resource protection purposes. These operations are conducted jointly with personnel from the Directorate of Public Works (DPW) Environmental and Natural Resources Division (ENRD), DPW Roads and Grounds, Directorate of Emergency Services (DES) Fire Department, and the Directorate of Plans, Training, Mobilization, and Security (DPTMS) Integrated Training Area Management (ITAM) program, and DPTMS Range Operations.

Coordination of efforts in the application or control of fire is a fundamental requirement to ensure safety, efficiency, resource protection, and successful accomplishment of land management goals. The Integrated Wildland Fire Management Plan (IWFMP) was developed to establish operational procedures to guide all wildfire management activities on Fort A.P. Hill. This plan also directs the application of wildland fire for proper natural resources management under the requirements of Army Regulation (AR) 200-1, installation Integrated Natural Resources Management Plan (INRMP), and the Fort A.P. Hill Forest

Management Plan. The responsibilities and procedures outlined in this plan are intended to streamline management activities and incident response by establishing agreement and understanding regarding roles, responsibilities, and procedures between involved directorates.

This plan requires annual updates to capture changes in procedures, qualified personnel, and available wildland fire equipment and other resources. This plan will require a five-year revision in 2025 to update the overall installation wildland fire management program intent and approach. Versions of this plan will be tracked through the installation Environmental Management System (eMs) document control process.

1.3. ROLES AND RESPONSIBILITIES

1.3.1 Garrison/Installation Commander –

- Designate the garrison Wildland Fire Program Manager.
- Approve the Integrated Wildland Fire Management Plan.
- Establish a method for commercial procurement of meals and supplies in emergency situations.
- Review annual prescribed fire plan.
- Serve as approving agency administrator on all prescribed fires with a “Moderate” deliberate risk assessment rating or lower.

1.3.2 Wildland Fire Program Manager -

- Provide for Wildland Fire Program Management as the Wildland Fire Program Manager in all matters related to wildland fire management activities and strategies
- Develop, review, update and implement the IWFMP
- Develop appropriate NEPA analyses and documents in relation to the prescribed burn program
- Ensure all personnel involved with wildland fire management meet all certification and physical requirements as established by guiding policies, regulations and related standards
- Assess wildland fire risks related to installation and tenant facilities
- Determine and maintain appropriate resourcing of wildland fire related equipment, PPE and specialized vehicles
- Monitor wildland fire results to determine objectives met or impacts to the ecosystem as through photo point monitoring, or composite burn index, other surveys
- Track all wildland fire occurrences that occur on the installation, wild or prescribed, in the geographic information system (GIS) and provide updates

- Provide for evaluation of wildfire suppression areas to determine site rehabilitation requirements
- Provide wildfire response as a subject matter expert, or in the form of personnel and/or equipment

1.3.3 Chief, Fire and Emergency Services –

- Review and implement approved IWFMP
- Assess wildland fire risks related to installation and tenant facilities
- Report wildfire location and extent to Forestry Branch for burned acreage tracking and reporting purposes
- Review annual prescribed burn plans
- Provide prescribed burn support when resources are available
- Ensure all personnel involved with wildland fire meet all certification and physical requirements as established by guiding policies, regulations, departmental SOPs, and related standards
- Determine and maintain appropriate resourcing of wildland fire related equipment, personal protective equipment (PPE), and specialized vehicles

1.3.4 Director, Emergency Services –

- Review and implement the approved IWFMP.
- Review annual prescribed burn plan.
- Provide police support as needed for wildland fire events.
- Provide dispatch services as needed for wildland fire events.
- Ensure personnel associated with wildland fire are appropriately trained and equipped

1.3.5 Director, Public Works –

- Review and implement approved IWFMP.
- Review annual prescribed fire plan.
- As agency administrator, approve daily prescribed fire plan.
- Ensure personnel associated with wildland fire are appropriately trained and equipped.
- As agency administrator, initiate Positon Task Books (PTBs).

1.3.6 Chief, Environmental and Natural Resources Division –

- Review and implement approved IWFMP
- Ensure appropriate application of National Environmental Policy Act (NEPA) requirements in relation to wildland fire
- Review annual prescribed burn plans
- Provide for evaluation of wildfire suppression areas to determine site rehabilitation requirements

1.3.7 Supervisor, Directorate of Public Works, Roads and Grounds Branch –

- Review and implement approved IWFMP
- Review annual prescribed burn plans
- Ensure all personnel with wildland fire duties have appropriate PPE and that equipment is operational and on-call during fire and prescribed burn season
- Provide for site rehabilitation as needed

1.3.8 Director, Plans, Training, Mobilization, and Security –

- Review and implement approved IWFMP.
- Review annual prescribed burn plans.
- Maintain the installation Emergency Management Plan and coordinate related items and update requirements

1.3.9 Range Operations Officer, Directorate of Plans, Training, Mobilization, and Security –

- Review and implement approved IWFMP
- Provide five-year prescribed burn request estimates for long-term planning and NEPA documentation
- Provide prescribed burning request inputs for annual work plan development
- Review annual prescribed burn plans
- Ensure all personnel with wildland fire duties have appropriate PPE and that equipment is operational and on-call during fire and prescribed burn season
- Coordinate scheduling of all requested prescribed burns
- Assist with site preparation and resource protections needs prior to prescribed burn implementation within the Range Complex
- Ensure all fires occurring in the Range Complex or Training Areas are reported to Fort A.P. Hill dispatch

- Report wildfire extents to Forestry Branch for GIS documentation and reporting

1.3.10 Coordinator, Directorate of Plans, Trainings, Mobilization, and Security, Integrated Training Area Management –

- Review and implement approved IWFMP
- Review annual prescribed burn plans
- Utilize the Sustainable Range Awareness program as a venue for creating and disseminating educational materials.

1.3.11 Emergency Operations Center, Directorate of Plans, Training, Mobilization, and Security –

- Review and implement approved IWFMP
- Review annual prescribed burn plans

1.3.12 Public Affairs Officer –

- Review and implement approved IWFMP.
- Administer public notification procedures for prescribed burning and emergency notifications.
- Provide for public education in relation to the benefit and risks associated with wildland fire.

1.4. GOALS AND OBJECTIVES

Goal: PROTECTION

G1) Implement wildfire prevention and suppression measures to protect human life, property, installation mission completion, natural resource assets, and special ecological environments on Fort A.P. Hill from unwanted fire damage.

Objectives:

G1 – O1) Incur no injuries, deaths, property losses/damages, road closures, or undesired ecological damage resulting from wildland fire or smoke.

G1 – O2) Cause no off-post damage to private lands resulting from escaped prescribed burns or wildfires along the installation boundary.

G1 – O3) Conduct annual prescribed burns on the Range Complex during the dormant season to reduce the loss of training time due to wildfire-related range shutdowns.

G1 – O4) Ensure Range Control, Fort A.P. Hill tenant organizations and training units are aware of the daily Fire Danger Rating and resulting munitions utilization guidelines.

G1 – O5) Protect all natural and cultural resources, to the extent feasible, through a program of resource awareness, fire prevention, low-impact suppression, and post-action restoration.

G1 – O6) Identify fuel loading risks by developing a comprehensive fuel loading risk assessment map with a process for updating fuel loading assessments every five years.

G1 – O7) Implement established fuel management techniques to reduce risk of high- intensity wildfire in identified high-risk areas.

G1 – O8) Maintain an installation firebreak system that can be utilized to access and protect identified real property, natural and cultural resources, and adjoining private lands.

G1 – O9) Conduct an annual firebreak system evaluation to determine status, maintenance requirements (stabilization, seeding, etc.), and gaps.

G1 – O10) Ensure garrison leadership is well advised of the IWFMP requirements, potential annual wildland fire threats/risks, multi-day or multi-agency events logistics, or other wildland fire requirements for appropriate budgeting and program funding.

Goal: LANDSCAPE MANAGEMENT

G2) Use fire as a landscape management tool to support installation land management plans by enhancing military training mission flexibility and allowing fire, a recognized natural source of ecological balance, to fulfill its role and accomplish natural regeneration and vegetation management objectives.

Objectives:

G2 – O1) Reduce understory densities in forested areas to improve accessibility and the quality of training lands within the installation to allow tenant and visiting military units to maintain a high level of combat readiness.

G2 – O2) Conduct site preparation burns one to two years post-harvest to reduce logging debris, improve accessibility, maintain training landscape, and prepare the seed bed for regeneration.

G2 – O3) Utilized prescribed fire to help create and maintain training landscapes.

G2 – O4) Utilize prescribed fire to favor oak regeneration establishment and to manage fire-maintained, early-successional wildlife conservation planting areas.

G2 – O5) Use established methodologies to conduct annual burn program monitoring to document vegetative response to

wildland fire including native and non-native species. Summarize and report results annually.

G2 – O6) Conduct annual reviews of the installation land management plans, including, but not limited to the INRMP and Integrated Pest Management Plan to incorporate management goals into the wildland fire program.

G2 – O7) Coordinate with the installation Range Control Officer and ITAM personnel to determine areas on the installation to be fire-maintained and incorporate into the annual prescribed burn plan.

G2 – O8) Coordinate with Fish and Wildlife program managers to create a fire-maintained habitat regime encouraging native vegetation and improving rare wildlife habitats for ground-nesting birds.

Goal: INCIDENT MANAGEMENT

G3) Efficiently contain each wildfire occurring on the installation through effective cross-directorate/agency communication, operational-ready equipment, technology and personnel, and appropriate span of control for the incident commander and delegates.

Objectives:

G3 – O1) Establish a National Incident Management System (NIMS) - compliant Incident Command System (ICS) for each wildfire event meeting established criteria for ICS implementation.

G3 – O2) Conduct a thorough evaluation and integration of the IWFMP with the Installation Emergency Management Plan (IEMP).

G3 – O3) Ensure all handheld radio systems have at least one shared channel for cross-directorate communication on the fireline.

G3 – O4) Evaluate current weather station status, information retrieval process, information sharing potential and update potential.

G3 – O5) Perform and document required annual maintenance on all Fort A.P. Hill-owned weather stations.

G3 – O6) Evaluate the logistics required for mobile access to the Fort A.P. Hill GIS in order to leverage pertinent data and modeling capabilities.

G3 – O7) Evaluate fire modeling and enterprise incident management decision support systems or other tools for more effective incident management and fire and resource tracking abilities.

G3 – O8) Use geographic information systems and geographic positioning systems to record the boundaries of wildfires within 48 hours of the conclusion of the incident.

G3 – O9) Evaluate any resource impacts that may have occurred from

suppression activities, such as plow lines with erosion potential or cut fence lines, within 48 hours of the event, and mitigate identified damages as soon as feasible.

G3 – O10) Evaluate all wildland fire tools and equipment for operational readiness prior to the start of each annual burn season and inform the Wildland Fire Program Manager if significant equipment (e.g., dozers, graders, etc.) is not operational.

G3 – O11) Document each wildfire and prescribed burn event in the Wildland Fire Management Application.

G3 – O12) Investigate each reported wildfire to establish ignition location and source.

G3 – O13) Clarify the interaction of Fort A.P. Hill with the Virginia Department of Forestry (VDOF) for wildfire suppression on and off the installation.

Goal: SAFETY

G4) Above all else, provide for firefighter, military personnel, and public safety.

Objectives:

G4 – O1) Maintain fire management qualifications for all firefighters and fire managers and ensure all personnel assigned to those positions are trained to a level appropriate for their expected duties.

G4 – O2) Develop mechanism for continued firefighter education as through and VDOF to high-quality training to meet NWCG standards.

G4 – O3) Ensure wildland fire Job Hazard Analyses and Risk Assessments are reviewed and updated annually.

G4 – O4) Ensure personnel are issued appropriate wildland fire PPE and that all wildland fire vehicles and equipment are in proper working order.

G4 – O5) Engage Range Control and the Range Facility Management Support System (RFMSS) and the Fort A.P. Hill Fire Desk to ensure no personnel are within prescribed burn areas and that ranges go into cease-fire as needed for wildfire response personnel.

G4 – O6) Inform Virginia Department of Transportation (VDOT) if hazardous travel conditions exist or are expected to occur, as due to smoke, on surrounding public roadways.

G4 – O7) Post signs along highly-travelled installation roadways to warn travelers of potential smoke during prescribed burn operations.

G4 – O8) Utilize established smoke management techniques to minimize the number of prescribed burns generating smoke complaints.

G4 – O9) Evaluate the incorporation of complexity ratings of each prescribed burn plan site to determine appropriate staffing and qualifications of participating personnel.

G4 – O10) Maintain accountability of all personnel involved with each prescribed burning or wildfire response.
G4 – O11) Ensure each prescribed burn has a documented Hot-Work permit prior to implementation/ignition.
G4 – O12) Conduct safety briefings prior to each prescribed burn activity.
G4 – O13) Evaluate and assign a centralized wildland fire training and qualifications tracking entity for non-DES Fire Department personnel involved in wildland fire.

Goal: PUBLIC AWARENESS

G5) Enhance general public awareness and understanding of wildland fire occurring on the installation.

Objectives:

G5 – O1) Coordinate with the installation Public Affairs Office (PAO) prior to each annual burn season to produce an informational article summarizing the Fort A.P. Hill wildland fire program for publication in local periodicals.
G5 – O2) Distribute messages to the public through the Caroline Alert, social media, or reverse- 911 notification system to advise of prescribed burn or wildfire activities that may produce smoke impacts.
G5 – O3) Use the Alert! network-centric mass-notification system, internal electronic mail system to inform installation personnel, tenants, contractors, and training units of prescribed burn or wildfire activities.
G5 – O4) Leverage current social networking technologies to expand the educational and notification opportunities of the installation wildland fire management program.
G5 – O5) Participate in organized public outreach events as able, such as Army Earth Day, Career Day, installation Safety Day(s), or other outreach opportunities.

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2. POLICY, LAND MANAGEMENT PLANNING, AND PARTNERSHIPS

The intent of this chapter is to establish the linkage between higher level planning documents, legislation and policies and the actions described in the document. It also describes the various types of partnerships and partners engaged in installation wildland fire management activities.

2.1. APPLICABLE LAWS, REGULATIONS, AND GUIDANCE

The governing policy for wildland fire management can be found in DODI 6055.06 and Federal Wildland Fire Management Policy. The policies, directives, standards, and guidelines in the following paragraphs identify federal wildland fire management policy and accepted professional standards for wildland fire management on Fort A.P. Hill.

The *1995 Federal Wildland Fire Management Policy* (United States Departments of the Interior and Agriculture) affirmed the positive benefits of fire and discussed the need for landscape-level resource management, integration of fire into land management planning and implementation, and involvement of all affected landowners and stakeholders. The *Review and Update of the 1995 Federal Wildland Fire Policy and Program* (Interagency Federal Wildland Fire Policy Review Working Group, 2001) contains a number of recommendations to assist implementation of wildland fire policy established under the *1995 Federal Wildland Fire Management Policy and Program* (United States Department of Agriculture, 1995). The review working group included the five original federal agencies with additional representatives from the DOD, Department of Energy, Bureau of Reclamation, United States Environmental Protection Agency (U.S. EPA), Federal Emergency Management Agency, and Department of Commerce.

DOD and Army-specific guidance and instructions related to wildland fire include:

- DODI 6055.06, *DOD Fire and Emergency Services Program:* Establishes uniform professional qualification standards, standardized training, and certification procedures for all DoD Fire and Emergency Services personnel.
- DODI 4715.03, *Natural Resources Conservation Program*: Formalizes policies and procedures for the integrated management of natural resources on military lands.
- DODI 6055.17, *Installation Emergency Management (IEM):* Establishes policy, assigns responsibilities, and prescribes procedures for developing, implementing, and sustaining IEM programs at DoD installations worldwide for 'all hazards', establishes the goals of the DoD IEM Program and aligns DoD emergency management (EM) activities with the National Incident

Management System (NIMS), the National Preparedness Guidelines (NPG), and the National Response Framework (NRF).

- DODD 3025.18 *Defense Support to Civil Authorities (DSCA)*: Provides overarching guidance of how the United States military can be requested by a federal agency and the procedures that govern the actions of the military during employment.
- AR 420-1 *Army Facilities Management* (Ch. 25 Fire and Emergency Services)
- AR 200-1 *Environmental Protection and Enhancement*
- AR 385-10 *Army Safety Program*
- AR 525.57 *Army Emergency Management Program*
- 2002 *Army Wildland Policy*

Federal legal requirements that affect DOD wildland fire management include:

- Sikes Act (16 USC Chapter 5c, Subsection 670) – Mandates cooperation with other Federal and State agencies for natural resource management
- Gonzolas Amendment (10 USC 2465) – Allows no contract firefighting functions for DOD with exceptions
- Reciprocal Fire Protection Agreements (42 USC 1856, Chapter 15A) – sets the authority to enter into reciprocal agreements for fire protection, to include authorization to enter into contracts with State and local governmental entities, to include local fire districts for procurement of services in the presuppression, detection, and suppression of fires on any units within their jurisdiction.
- Endangered Species Act of 1973 (16 USC, Chapter 35) – Requires protection and management of listed species habitat which can include the use of prescribed fire to maintain habitats.
- National Environmental Policy Act of 1970 – Ensures planned federal actions comply with federal environmental law.
- Clean Air Act of 1970, Revised 1990 – Requires management of emissions.
- Fire Control and Prevention Act of 1974 – Requires Federal agencies to protect life, safety, property
- 2009 FLAME Act (CR-2014-2) **–** Requires interagency “Cohesive Strategy” for wildland fire management.

Applicable regulations, policies, qualifications and standards used for Army Wildland fire operations are as follows:

- The NWCG *Wildland Fire Qualification Subsystem Guide* (PMS 310-1) (NWCG, 2012) contains the training, experience, and physical requirements for various Incident Command System (ICS) positions. The DOD has accepted these standards for use in both wildfire suppression and prescribed fire operations on DOD component lands.
- National Fire Protection Association (NFPA) 295*, Standard for Wildfire*

Control, specifies procedures for the control of wildfires, including department management, fire ground organization, equipment, and apparatus.

- NFPA 299*, Standard for Protection of Life and Property from Wildfire,* provides criteria for fire safe development in areas that may be threatened by wildfire.
- NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications,* specifies the minimum requirements in terms of performance objectives and professional competence required for service as a fire apparatus driver operator as set forth for each level of responsibility.
- NFPA 1051, *Standard for Wildland Fire Fighter Professional Qualifications,* identifies the minimum job performance requirements for wildland fire duties and responsibilities.
- NFPA 1143, *Standard for Wildland Fire Management,* specifies management practices and policies necessary for a fire protection organization to develop a wildland fire management program.
- NFPA 1144, *Standard for Reducing Structure Ignition Hazards from Wildfire,* provides minimum planning, construction, maintenance, education, and management elements for the protection of life, property, and other values that could be threatened by wildland fire. It is designed to assist local, state, and federal fire agencies in dealing with the escalating challenges presented by the proliferation of wildland/urban interface communities and the monetary losses of structures in wildland/urban interface areas.
- NFPA 1906, *Standard for Wildland Fire Apparatus*, provides minimum requirements for the design, performance, and testing of new automotive fire apparatus that are designed primarily to support wildland fire suppression operations.
- NFPA 1977, *Standard on Protective Clothing and Equipment for Wildland Fire Fighting*, specifies the minimum design, performance, testing, and certification requirements for items of wildland fire fighting protective clothing and equipment.
- NFPA 1984, *Standard on Respirators for Wildland Fire Fighting Operations,* specifies the minimum design, performance, testing, and certification requirements for respirators to provide protection from inhalation hazards for personnel conducting wildland fire fighting operations.

The IWFMP incorporates and adheres to DOD and Army policy by giving full consideration to the use of wildland fire as a natural process and as a tool in the land management planning process and by providing for the following:

- Wildfires, whether on or adjacent to lands administered by the Army, which threaten life, or are determined to be a threat to installation mission/assets, natural and cultural resources or improvements under the Army's jurisdiction,

will be considered emergencies and their suppression given priority over other installation activities.
- Installations shall cooperate in the development of interagency preparedness plans to ensure timely recognition of approaching critical wildfire situations, to establish processes for analyzing situations and establishing priorities, and for implementing management responses to these situations.
- Installations will enforce rules and regulations concerning the unauthorized ignition of wildfires, and aggressively pursue violations.

This IWFMP affirms these key elements of Army policy:

- Firefighter and public safety is the first priority of the wildland fire management program and all associated activities.
- Only trained and qualified personnel will be responsible for, and conduct, wildland fire management duties and operations.
- Wildland fire management planning, preparedness, operations, monitoring, and research will be conducted on an interagency basis with involvement by all partners to the extent practicable.
- Fire, as an ecological process, has been integrated into the INRMP and related resource management plans and activities on a landscape scale, across agency boundaries, based upon the best available science.
- Wildfire is used to meet identified resource management objectives and benefits when appropriate.
- Prescribed fire and other treatment types will be employed whenever they are the appropriate tool to reduce hazardous fuels and the associated risk of wildfire to human life, property, and cultural and natural resources and to manage our lands for habitats as mandated by statute, treaty, and other authorities.
- Management response to wildfire will consider firefighter and public safety, cost effectiveness, values to protect, and natural and cultural resource objectives.
- Staff members will work with mission planners, local cooperators and the public to prevent unauthorized ignition of wildfires on Army lands.
- The military mission is supported by managing wildland fire fuels.
- INRMP and pertinent resource management plans set the objectives for the use and desired future condition of Army lands.
- Wildland fire management plans, programs, and activities support INRMP implementation and emergency wildfire response.
- Sound risk management is a foundation for all wildland fire management activities. Risks and uncertainties relating to wildland fire management activities must be understood, analyzed, communicated, and managed as they relate to the cost of either doing or not doing an activity.
- Standardization of policies and procedures for wildland fire management and resourcing among Army installations is an ongoing objective.
- Maximizing cost effectiveness of any fire operation is the responsibility of all involved, including those who authorize, direct, or implement operations.

- Cost effectiveness is the most economical use of resources necessary to accomplish project/incident objectives.
- Accomplishing the objectives safely and efficiently will not be sacrificed for the sole purpose of “cost-saving.”
- Appropriate oversight will ensure that expenditures are commensurate with values to be protected.

2.2. LAND MANAGEMENT PLANNING

2.2.1. Integration with Military Mission

See Appendix B – Integrated Natural Resource Management Plan – Chapter 6 – Section 6.3 - Integration with Military Mission Requirements (pg. 116)

2.2.2. Integration with installation INRMP

See Appendix B: Integrated Natural Resource Management Plan – Chapter 7 – Section 7.7.6 – Wildland Fire Management (pg. 116)

Fort A.P. Hill Forest Management Plan – FY 21-25 – (document on-hand with Forestry Branch)

See Figures 4.8.1.5.2-A-E (pg. 91-99) for the FY 21-25 prescribed fire annual work plans.

2.2.3. Integration with installation ICRMP

See Appendix C: Integrated Cultural Resource Management Plan – Chapter 6 – Section 6.12.4 – Procedures to Protect Cultural Resources during Prescribed Burns and Section 6.19 – Conducting Cultural Resource Surveys in Association with Forestry Activities (pg. 123)

2.3. NEPA COMPLIANCE

Environmental compliance for planned wildland fire-related actions on Army lands, including fire break establishment for prescribed fire, fire break maintenance and rehabilitation, use of water resources as for suppression, prescribed burning and non-fire fuel reduction, should be included in the National Environmental Policy Act (NEPA) environmental review process associated with the INRMP. The NEPA process assures that all environmental impacts are being considered and addressed. A well-executed NEPA process assures compliance with the following laws:

- Endangered Species Act of 1973 (ESA),
- National Historic Preservation Act of 1966 (NHPA),

- Archeological Resources Protection Act of 1979 (ARPA),
- Clean Water Act of 1963,
- Clean Air Act of 1972,
- Golden and Bald Eagle Protection Act
- Migratory Bird Treaty Act 1912

Regarding wildfires, NEPA analysis is not required because wildfires are unplanned events. Suppression activities are Categorically Excluded from NEPA. However, emergency Endangered Species Act (ESA) consultation should be conducted during or immediately following a wildfire if the wildfire or suppression actions could potentially impact a federally listed species. Additionally, some prescribed fires may be Categorically Excluded from NEPA. Consult with the Installation NEPA Coordinator for more details.

Site-specific Environmental Assessments (EA) are completed for activities resulting from the implementation of this plan. The EA for the INRMP addresses the intent and application of the wildland fire program and the Five-Year Forestry Management Activities EA identifies and describes site-specific prescribed fire implementation and remediation plans. The EAs that describe and assesses the impacts and use of wildland fire is available for review in the ENRD and Forestry Branch offices.

2.4. INTEGRATION WITH FEDERAL WILDLAND FIRE MANAGEMENT POLICY

This IWFMP meets Federal Wildland Fire Management Policy by implementing and following these guiding principles:

- Firefighter and public safety is the first priority in every fire management activity.
- The role of wildland fire as an essential ecological process and natural change agent has been incorporated into the planning process.
- Wildland fire management plans and activities are based upon the best available science.
- Federal, state, tribal, local and interagency coordination and cooperation are essential.
- Standardization of wildland fire policies and procedures to meet national standards is an ongoing objective.

The Federal Land Assistance, Management, and Enhancement (“FLAME”) Act of 2009 directs that an interagency cohesive wildland fire strategy be developed. This IWFMP meets the direction in The National Cohesive Wildland Fire Management Strategy, by emphasizing the following primary goals:

- Restore and maintain landscapes: Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.
- Fire-adapted communities: Human populations and infrastructure can withstand a wildfire without loss of life and property.
- Wildfire response: All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.

The National Strategy sets broad, strategic, and national-level direction as a foundation for implementation of actions across the Nation.

2.5. INTERAGENCY AND/OR MUTUAL AID AGREEMENTS.

The network of support personnel and various components, both from Fort A.P. Hill and external to the installation, are vital links in the response and control of wildfire activity. Each component that can be utilized has been identified within this and may be utilized, dependent upon the circumstances of the event. The IC will identify the need for assistance from external resources and the EOC will coordinate required assistance from external resources.

2.5.1. Municipal Support

In view of the potential loss that may accompany surrounding communities as a result of an uncontrolled fire at Fort A.P. Hill, MAAs with the communities for wildfire suppression were established. Fort A.P. Hill has mutual aid agreement with the Caroline County Fire-Rescue and Emergency Management (Appendix D – pg. 129). This mutual aid agreement provides for the involvement of personnel and equipment between the principals to the agreement. The most current signed copies are available for review at the DES Fire Department.

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3. WILDLAND FIRE AREA CHARACTERISTICS AND PRE-FIRE PLANNING

3.1. MILITARY LAND USE

The mission of Fort A.P. Hill, a Regional Collective Training Center, provides innovative, flexible, and relevant training enablers in order to support Army, Joint and Interagency readiness. On order, support contingency operations in the mid-Atlantic and National Capital regions.

Mission operations are potentially at risk from both wildfires and improperly conducted prescribed fires. Wildfires and/or fire suppression operations can interfere with missions and threaten military assets. Additionally, certain missions may require a smoke-free environment and can be impacted from smoke from wildfires or prescribed fires.

3.2. PHYSIOGRAPHIC DESCRIPTION

Fort A.P. Hill is located in the Coastal Plain physiographic province approximately 40 miles west of the Chesapeake Bay between the Rappahannock and Mattaponi Rivers. Fort A.P. Hill is at the northern boundary of the Virginia Coastal Plain within the inner coastal plain portion of the province. Since the installation lies just east of the fall line, it shares characteristic topographic features of both the Piedmont and Coastal Plain regions. Terrain at the installation includes level plains with rolling countryside interrupted by numerous shallow valleys that contain areas of sharp relief.

For general classification purposes, land is roughly categorized into four classes:

- Bottomland - Generally wetlands, streams, swamps, and the floodplains of streams.

- Cove - Cove forests are located at middle to low elevations in protected landscape positions. They often occupy concave landforms and protect stream headwaters. Site quality is very high and well adapted to production of yellow-poplar (*Lirodendron tulipifera*) and white oak (*Quercus alba*). Cove lands will often overlap with lands classed as slope. Coves are more typical of the piedmont region, but do occur in isolated portions on the installation.

- Slope - These areas are immediately adjacent to coves and bottomlands. They exhibit great variations in site quality and degree of slope, and consequently vary greatly in vegetation type.

- Upland - These lands extend from the higher elevations to the break of the adjacent slopes. The lands are usually dry and best suited to xeric-adapted tree species.

3.3. CLIMATE

Fort A.P. Hill lies in the transition zone between the northern and southern climates of the United States. The climate is classified as modified continental. Mountains to the west act as a partial barrier to the continental cold air in winter. The open waters of the Chesapeake Bay and the Atlantic Ocean moderate the ambient climate and contribute to the warm and humid summers and mild winters. Summers are warm and humid, with occasional hot and dry periods. Winters are moderately cold with precipitation mainly occurring as rain, although several short periods of snow occur each year.

The coldest weather normally occurs in late December through early February, when low temperatures average mid-30's (°Fahrenheit) and high temperatures average in the lower 40's. July is the hottest month, with an average temperature around 80. The average annual precipitation of 45.5 inches is fairly evenly distributed throughout the year.

Annual prevailing winds are from the south-southwest with occasional north-east-southeast winds throughout the year. Average surface wind speed is approximately 3 to 5 miles per hour. Severe weather conditions can result from tropical storms and hurricanes that, on occasion, produce strong winds and heavy rains with accompanying damage. Atmospheric thermal inversions can occur any time of the year, but are most frequent and intense during the late summer and early autumn.

3.4. AIR QUALITY

Fort A.P. Hill is located in the Northeastern Virginia Air Quality Control Region (AQCR), one of seven regions in the state used to monitor ambient air quality trends. There are no air quality monitoring stations in Caroline County; however, according to Virginia Department of Environmental Quality (VDEQ), Caroline County is classified as an attainment area based on the nearest air quality monitoring stations.

3.5. WILDLAND FIRE HISTORY

Virginia has a rich cultural history which includes accounts of wildland fire being used routinely by Native Americans. Historical evidence conveys that native populations utilized fire as a land management tool in relation to agriculture, hunting, and opening travel corridors (Brown 2000). It is theorized that the routine

use of fire in the region shaped “a changing mosaic of vegetation types that included fire-adapted species on some sites and fire-intolerant communities on others” and possibly contributed to the development of an oak and pine dominated forest type (Brown 2000).

Wildland fire has been a part of the installation history since the acquisition and initiation of military training in 1941. Initial wildland fire policy called for immediate suppression. Prescribed burning was initiated in the 1960’s in the dedicated impact areas and for forestry purposes following clearcut harvest operations in the training areas. During this time, the policy of aggressive fire suppression continued. In the 1990’s, prescribed burning continued in the impact area and forest harvest sites and the fire suppression strategy switched from immediate suppression to allowing the fire to burn out. As a result of fuel build-up surrounding the range complex, two fires escaped the impact area where they burned intensely in the surrounding controlled access areas, ultimately burning on to state and private lands.

To date, more extensive prescribed burns are implemented across the installation to address fuel loading and reduce the severity of the frequent wildfires occurring in the range complex. In order to minimize firebreak construction and maintenance requirements in the training areas, burn blocks have grown in acreage and cover many acres of previously unburned areas. These prescribed burns accomplish multiple ecosystem and training related land management goals.

Though some prescribed burning is accomplished during the fall months following leaf-fall (October 1st – November 15th), most prescribed burning is accomplished in the late winter months from February 1st – April 15th. This coincides with the recognized wildfire seasons in Virginia which occur from February 15th through April 30th and from October 15th to November 30th. Historical wildfire data and expected weather conditions identify these times as those most likely to be characterized by conditions ideal for wildfire ignition and spread. During the Virginia spring fire season (February 15th through April 30th), the state implements a 4:00 pm burn ban stipulating that no open burning will be permitted until after 4:00 pm when increasing relative humidity and decreasing temperature reduce the risk of fire escapes except for those fires set on federal lands. Due to the approved annual prescribed burn plan, response resources, and presence of certified prescribed burn managers, the installation continues to implement its prescribed burn program during the spring fire season.

Fire frequency can vary greatly by vegetative cover type, site-specific meteorology; stand age, aspect, and elevation. Most variation of frequency for Fort A.P. Hill and similar military installations derives from human ignition

sources. Military training is the primary source of wildfire ignition on the installation and contributes to a relatively high fire frequency. The use of devices such as pop-up illumination flares, smoke grenades, tracer rounds, light and heavy artillery rounds, and other types of military ordnance, during military training activities, will continue to be a potential source of year- round ignition for wildfires at the installation.

For the natural components of fire ignition, seven basic fire regime classifications for North American ecosystems have been established (Morgan et al. 2001). Two of these fire regime classifications can be applied to portions of the Fort A.P. Hill ecosystem. They include:

1. Frequent, low-intensity surface fires (1-25 year fire return interval). Includes: ponderosa pine, Douglas fir and southeastern pine stands.

2. Infrequent, low-intensity surface fires (>25 year fire return interval). Includes: sub-alpine forest, most eastern deciduous forests, and sand pine scrub.

Figures 3.5-A (pg. 81) and 3.5-B (pg. 83) depict wildland fire occurrence (wildfire and prescribed fire) across the installation.

3.6. WILDLAND FIRE BEHAVIOR

Fort A.P. Hill exhibits physiographic and vegetative characteristics of both the Piedmont Plateau and the Coastal Plains physiographic regions. Topography, weather, fuels, and the degree of mechanization of fire suppression forces are four major factors that affect strategy and tactics in these regions.

The flat woods of the Coastal Plains and the gently rolling topography characterizing the Piedmont are a minor concern in fire behavior as compared to weather and fuels. Except in local situations, such as river bluffs, slope will not have as significant an effect on fire behavior as weather and fuels. Mechanized suppression efforts in these areas are most effective. Due to the regional climate, fires in the Piedmont and Costal Plains burn most acreage during the day and die down nightly. Fire intensity and rate-of-spread will predominantly be determined by the wind speed and the type and continuity of fuels and may be extreme with the right combination of contributing factors.

3.7. WILDLAND FUEL MODELS AND DISTRIBUTION

There are 13 Fire Behavior Prediction System (FBPS) fuel models that are used to describe fuel complexes with which to make fire behavior predictions

(Anderson 1982). Fort A.P. Hill can be classified with ten of these fuel models, indicated below by an asterisk:

1 - 3 Grass model – grass carries fire
- 1 – Short grass* (1 foot)
- 2 – Timber grass and understory*
- 3 – Tall grass* (2.5 feet)

4 -7 Shrub models – shrub layer carries fire
- 4 – Chaparral (6 feet)
- 5 – Brush* (2 feet)
- 6 – Dormant brush, hardwood slash*
- 7 – Southern rough

8-10 Timber models – litter carries fire)
- 8 – Closed timber litter*
- 9 – Hardwood litter*
- 10 – Timber (litter and understory)*

11-13 Logging slash models – logging debris carries fire
- 11 – Light logging slash*
- 12 – Medium logging slash*
- 13 – Heavy logging slash

These fuel models are helpful when predicting fire behavior, though one area can be characterized by multiple fuel models. Fuel models one and nine are most suited to fuel and forest cover structures found on Fort A.P. Hill; however, choosing the appropriate model requires experience and personal judgment. Predicted behavior and spread can be compared to actual behavior and spread observations to adjust model choices for the area.

3.8. WILDFIRE RISK SUMMARY

A statewide Wildfire Risk Assessment model was created by the Virginia Department of Forestry (VDOF). Figure 3.8-A: Fort A.P. Hill Wildfire Risk Assessment (pg. 85) depicts the wildfire risk on Fort A.P. Hill based on the VDOF Wildfire Risk Assessment.

3.9. IDENTIFIED WILDLAND MANAGEMENT CONSTRAINTS

3.9.1. Mission Assumption and Constraints

Military mission activity and associated safety footprints can limit access for prescribed burning, and for wildfire suppression. Areas with potential UXO,

or other contamination can affect the ability to carry out prescribed fires and fight wildfires due to safety considerations. Airspace restrictions from military mission activity can preclude the use of aircraft for fire suppression activities. Close coordination between wildland fire crews and mission planners is required in order to assure safety and avoid conflicts.

3.9.2. Firefighting Constraints

- Wildland management program funding
- Training opportunities
- Integration between Forestry Branch and DES-Fire Department
- Maintaining proper work to rest ratios

3.9.3. Natural Resources Constraints

Wildland fire has significant impacts on ecosystem functions, wildlife habitat, forest growth and health conditions, species composition, and the training environment. The impacts can be beneficial of detrimental depending on the severity, location, and extent of the fire.

3.9.3.1. Forest Resources

- Forests cover approximately 65,000 acres of the installation land area
- 3 forest cover types
    - Southern yellow pines
    - Mixed hardwoods
    - Mixed pine-hardwood
- 20 distinct vegetation communities (3 classifications)
    - Pine
    - Hardwood
    - Pine-hardwood mixed

3.9.3.2. Fish and Wildlife Resources

- Wide variety of fish and wildlife species due to the diversity of habitats
    - 40 mammals
    - 145 birds
    - 40 fish
    - 60 reptile and amphibian species

- Migratory Bird Restrictions

No burning after 15 April unless prior consultation and approval has been received from the USFWS and Installation Wildlife Biologist.

- Eagle Nest Protection

  For known eagle nests that occur within prescribed burn blocks, prescribed burning shall be undertaken outside the breeding season (15 Dec – 15 Jul). Precautions such as raking leaves and woody debris from around the nest tree will be taken to prevent crown fire or a fire climbing the nest tree. If it is determined that a burn during the breeding season would be beneficial, then, to ensure that no take or disturbance will occur, these activities shall only be conducted only when neither adult eagles nor young are present at the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is active or after the young have fledged from that nest).

3.9.3.3. Endangered Species

- 15 species of flora and fauna occur on Fort A.P. Hill that are listed as either threatened or endangered at the federal and/or state level, and/or recognized as a DOD/Army SAR. The four federally listed species that require periodic consultation with the USFWS are:
  - Indiana Bat
  - Northern Long-eared Bat
  - Swamp Pink
  - Small Whorled Pagonia

- Indiana Bat and Northern Long-eared Bat

  No burning after 15 April unless prior consultation and approval has been received from the USFWS, Installation Wildlife Biologist, and Endangered Species Program Manager.

- Swamp Pink

  Keep fire plows and concentrated foot traffic out of the colonies. ENRD recognizes, accepts, and does not prohibit fire within these colonies.

- Small Whorled Pagonia

Keep fire plows and concentrated foot traffic out of the plant buffer. Fire should be avoided within the buffer and should be suppressed if threatening to impact the buffer.

- American Ginseng

  Keep fire plows and concentrated foot traffic out of the colonies. Avoid staging vehicles and equipment with the colonies. Fire should be avoided within the colonies and should be suppressed if threatening to impact the colonies.

- New Jersey Rush

  Keep fire plows and concentrated foot traffic out of the colonies. ENRD recognizes, accepts, and does not prohibit fire within these colonies.

- Kenk's Amphipod

  Though not federally or state-listed, the protection of habitat for this species is required to preclude its listing under the Endangered Species Act. Protect designated buffers along steep slopes that could cause erosion after fire implementation. ENRD-TES will provide guidance for protection.

3.9.4. Cultural Constraints

- Responsible for the stewardship of the cultural and historic resources
  - As of 25 July, 2018:
    - 585 archaeological sites
      - 44 Native American Sites
      - 513 historic period sites
      - 28 prehistoric and historic component sites

- Avoid ground disturbing and fire activities at sites designated by the Installation Cultural Resource Manager.

3.9.5. Fire Weather Considerations

The following weather parameters are utilized to determine go/no-go when implementing a prescribed fire or back-burn operations for wildfire suppression.

Table 3.9.5-A: Prescribed Fire Prescription Parameters

	Maximum	Minimum
Temperature (°deg)	90	32
Relative Humidity (%)	65	20
Wind Speed @ 20ft (mph)	16	5
Wind Gusts (mph)	20	NA
Mixing Height	NA	500m/1,640ft
Ventilation Rate	NA	2000ft
KBDI	600	NA
Fire Danger Rating	Very High	Low

*Prescribed burning and wildfire suppression done while exceeding these conditions is possible, although it may cause risks to health and safety. Permission from the Garrison Commander may be required.

3.10. WILDLAND PERSONNEL

3.10.1. Organizational Structure

The majority of wildfire responses on Fort A.P. Hill are of moderate frequency, low complexity, and short (single operational period) duration. To adequately respond to this level of occurrence the Fort A.P. Hill FES and DPW-ENRD will maintain, at a minimum, the following number

Table 3.10.1-A: Minimum Qualification Requirements Specific to FES

NWCG Mnemonic	***FD Wildfire Suppression Position Title***	***Number Needed per shift***
ICT4	*Assistant Fire Chief*	*1*
*SRB or ENOP**	*Single Resource Boss/Captain*	*1*
FFT1/ENOP	*Firefighter Type 1/Driver/Operator*	*1*
FFT2/ENOP	*Firefighter*	*2*

Notes:
**Personnel may hold more than one qualification.*
**FD position titles are derived from SOP 219.16.*
**FD is actively working towards implementing NWCG standards and Army WF Guidance once approved.*
**ENOP Position is available for on installation response only. If mutual aid responses are common, utilize fully qualified ENGB position.*

Table 3.10.1-B: Minimum NWCG Qualification Requirements Specific to DPW-ENRD

Mnemonic	***Wildfire Suppression Position Title***	***Number Needed per shift***
ICT4	*Incident Commander Type 4*	*1*
ICT5	*Incident Commander Type 5*	*1*
*SRB or ENOP**	*Single Resource Boss/ Engine Operator*	*1*
FFT1	*Firefighter Type 1*	*1*
Notes: **Personnel may hold more than one qualification.* **ENOP Position is available for on installation response only. If mutual aid responses are common, utilize fully qualified ENGB position.*		

3.10.2. Personnel Training

Army applies the NWCG standards for wildland position qualifications for all personnel with a direct role in wildland fire management activities. The single training standard facilitates integration and communication with state and federal partners, between the Directorate of Emergency Services (DES) – Fire and Emergency Services (FES) and Directorate of Public Works (DPW)-Natural Resources program areas, and between Army installations. Wildland fire management is often highly integrated across directorates at the garrisons and a single training standard creates a common language and operational understanding between the programs.

*Based on current operations, the FAPH Fire Department is implementing NWCG Standards with the goal of implementing the Army WF Guidance once approved. Prior to guidance approval, FAPH Fire Department will operate based on departmental SOPs, specifically SOP 219.16

3.10.3. Position Qualification Standards

Per Army 2002 Wildland Fire Policy Guidance, *"All civilian, contractor, and emergency services personnel involved in wildland fire management must possess certifications appropriate for their expected level of involvement in the wildland fire organization. All Army personnel must meet the NFPA or NWCG Standards for certification or be certified by the State in which the installation is located as a Prescribed Burn Manager. This certification does not apply to military personnel deployed by orders from the Director of Military Support."*

Specifically, where NWCG qualifications are required, standards for fire job position certification, required training and experience, physical fitness

testing and medical examinations will follow the guidelines of the Interagency Standards for Fire and Aviation Operations (Red Book), the National Wildfire Coordinating Group (NWCG) 310-1, Federal Wildland Fire Qualifications Supplement and additional guidance as may be provided in an Army or command-level training transition plan.

Army personnel civilian, contractors, and/or cooperative agreements, who participate in wildland fire activities will also be certified, as a minimum requirement, in Cardio-Pulmonary Resuscitation and Standard First Aid by the American Red Cross or comparable certification authority.

*Based on current operations, the FAPH Fire Department is implementing NWCG Standards with the goal of implementing the Army WF Guidance once approved. Prior to guidance approval, FAPH FD will operate based on departmental SOPs, specifically SOP 219.16.

3.10.4. Physical Fitness Standards

All military, civilian, contractor, and emergency services personnel involved in wildland fire management (including equipment operators) must pass a NWCG Work Capacity Test per position duties prior to starting wildland fire duties.

The Work Capacity Test was established by NWCG to create a standard to measure work capacity and endurance based on job-related tasks and expectations. The intent was to ensure safety of firefighters within normal work expectations and in response to emergency situations that may be encountered. Three levels of Work Capacity Tests were established for workers with arduous, moderate, or light duties as defined in PMS 310-1 (Table 3.10.4-A).

Table 3.10.4-A. Work Capacity Test Requirements for Arduous, Moderate, and Light Duties Work Category

Work Category	Test	Distance (Miles)	Pack (Pounds)	Time (Minutes)
Arduous	Pack	3	45	45
Moderate	Field	2	25	30
Light	Walk	1	None	16

Per NWCG PMS 310-1, personnel participating in wildland fire as type 1 and 2 firefighters (FFT1 and FFT2), crew or single resource bosses (CRWB, etc.), and Incident Commanders of types 3, 4, and 5 (ICT3, ICT4, ICT5) will meet arduous level physical fitness standards. Type 2 Prescribed Burn Boss (RXB3) and dozer or other equipment operators will meet a moderate level physical fitness standard.

The Work Capacity Test may be administered to Fort A.P. Hill personnel by qualified individuals. The test administrator will prepare a Job Hazard Analysis (JHA) to be reviewed by test participants. Participants will complete a personal Health Screening Questionnaire (HSQ) and an informed consent form prior to participating in the Work Capacity Test. Additional test administration guidelines can be found in the NWCG PMS307/NFES 1109 – Work Capacity Test Administrators Guide.

*FAPH FD SOP 219.06 and firefighter position descriptions currently mandates physical fitness training every shift as well as an annual physical to ensure mission readiness. Physical fitness standards IAW Army WF Guidance will be implemented once guidance is approved.

3.10.5. Training Records Administration

Training records administration will be coordinated through the Wildland Fire Program Manager (WFPM). All directorates with personnel involved with wildland fire will provide required training documentation to the WFPM as requested. The WFPM will coordinate with Federal partners (USFWS, USFS) to have these records uploaded in either the Incident Qualification System (IQS) or the Incident Qualification and Certification System (IQCS). The WFPM will maintain a record of all personnel involved with wildland fire and current training/certification status.

Personnel that respond and actively participate on all wildland fire events will fill out and submit the IMCOM IQCS Responder Update Sheet Incident Experience Record form (Form A) monthly to the WFPM. This form will be used to update responder records within their established IQCS/IQS profile.

* FAPH Fire Department manages training record administration through Emergency Report. FAPH Fire Department will provide training records via the Training Chief or Assistant Chiefs as requested by the WFPM.

3.11. SAFETY CONSIDERATIONS

3.11.1. UXO Safety

Unexploded ordnance (UXO) can be found in many areas within the Range Complex. The Fort A.P. Hill military installation map (MIM) identifies areas that are known to be contaminated with UXO and areas that are likely or potentially contaminated with UXO. Access to the controlled access areas may be granted by Range Control in coordination with the Fire Desk. In order to ensure the safety or prescribed burn and wildfire suppression personnel, the location of these areas in reference to the fire activities must be

made clear. Previously accessible roads now classified as “no-go” or “restricted” due to potential UXO contamination must also be clearly identified on site maps and in safety briefings. No heavy equipment firebreak or handline construction will occur in the dedicated impact areas for any reason. Heavy equipment or hand tools will not be used in the impact area buffers unless expressly cleared to do so by the Range Control Officer. UXO awareness training will be provided to all wildland fire personnel as UXO may be found in any area on the installation.

3.11.2. Firefighter Safety

3.11.2.1. Personal Protective Equipment (PPE)

- Wildland Fire Boots
- Fire Shelter (M-2002 or latest)
- Helmet with chinstrap
- Goggles/safety glasses (as identified by JHAs/RAs)
- Ear plugs/hearing protection
- National Fire Protection Association (NFPA) 1977 compliant long-sleeved flame resistant shirt (yellow recommended)
- NFPA 1977 compliant flame resistant trousers
- Leather of leather/flame resistant combination gloves. Flame resistant flight gloves or NFPA 1977 compliant driving gloves can be used by heavy equipment operators, drivers and fireline supervisors when not using fireline hand tools.
- Additional PPE as identified by local conditions or specialized equipment such as UTV/ATV.

3.11.2.2. LCES

LCES stands for “**L**ookouts, **C**ommunications, **E**scape routes and **S**afety Zones. The LCES system is taught to all wildland firefighters as a way to increase fireline safety. LCES represents a re-focusing on the essential elements of the FIRE ORDERS and was developed as a result of analyzing fatalities and near misses for over 20 years of active fireline suppression duties. The LCES system provides firefighters the most important focus areas to ensure safety during wildland fire incidents.

3.11.2.3. Standard Fire Orders (10 & 18)

These basic ten guidelines have been successfully taught and used by thousands of firefighters and leaders for more than forty years and represent foundational safety principles for all wildland firefighters.

1. Keep informed on fire weather conditions and forecasts.
2. Know what your fire is doing at all times.
3. Base all actions on current and expected behavior of the fire.
4. Identify escape routes and safety zones and make them known.
5. Post a lookout where there is possible danger.
6. Be alert. Keep calm. Think clearly. Act decisively.
7. Maintain prompt communications with you forces, your supervisor, and adjoining forces.
8. Give clear instructions and insure they are understood.
9. Maintain control of your forces at all times.
10. Fight fire aggressively, having provided for safety first.

18 Watch Out Situations

1. Fire not scouted and sized up.
2. In country, not seen in daylight.
3. Safety zones and escape routes not identified.
4. Unfamiliar with weather and local factors influencing fire behavior.
5. Uniformed regarding strategy, tactics, and hazards.
6. Instructions and assignments are not clear.
7. No communication with you company or supervisor.
8. Constructing line without a safe anchor point.
9. Building fireline downhill with fire below.
10. Attempting a frontal assault on the fire.
11. Unburned fuel between you and the fire.
12. Cannot see the main fire and not in communication with someone who can.
13. On a hillside where rolling material can ignite material below.
14. Weather is getting hotter and drier.
15. Wind increasing or changing direction.
16. Getting frequent spot fires across the fireline.
17. Terrain and fuels make escape to safety zone difficult.
18. Taking a nap near the fireline.

3.12. WILDLAND VEHICLES, EQUIPMENT, AND SUPPLIES

The following tables list the vehicles, equipment and supplies currently on-hand utilized by DPW-ENRD for wildland fire management:

Table 3.12-A: Wildland Fire Engines – DPW-ENRD

Make	Model	Year	Type	Water Capacity (gal)
Ford	F450	2015	6	250

Table 3.12-B: Wildland Fire Heavy Equipment – DPW-ENRD

Make	Model	Year	Attachment
Caterpillar	D3K2 LGP	2019	Fire Plow
John Deere	JD450J LGP	2009	Fire Plow
John Deere	JD450G LGP	1995	Fire Plow
Caterpillar	D8N		Drum Chop
Fecon	FTX128L	2016	Mulching Head

Table 3.12-C: Wildland Fire Tractors – DPW-ENRD

Make	Model	Year	Attachment
John Deere	5090M	2019	Loader
John Deere	5400		
John Deere	7510		Loader
John Deere	6320		

Table 3.12-D: Wildland Fire ATV/UTV – DPW-ENRD

Make	Model	Year	Type	Water Capacity (gal)
Polaris	Sportsman 570SP	2015		
Polaris	Sportsman 570SP	2015		
Polaris	Sportsman 850	2017		
Polaris	Ranger 800	2014	7	50
Polaris	Ranger 900 XP	2017	7	50

Table 3.12-E: Wildland Fire Skid Units – DPW-ENRD

Make	Model	Year	Water Capacity (gal)
Southern Rough		2014	50
Wildland Warehouse	L-Type	2017	50

Table 3.12-F: Wildland Fire Vehicles – DPW-ENRD

Make	Model	Year	Purpose
Ford	F250	2015	Terra Torch
Ford	Ranger	2004	Fuel Transport
Chevrolet	Silverado 1500	2016	Personnel/Equip Transport
Chevrolet	Silverado 2500	2016	Personnel/Equip Transport
International	Workstar 7600	2017	Equipment Transport
International	Workstar 7600	2017	Equipment Transport
Freightliner	M2	2011	Equipment Transport

Table 3.12-G: Wildland Fire Trailers – DPW-ENRD

Make	Model	Year	Purpose
Cargo Mate		2014	Fire Cache
PJ Trailer		2014	Equipment Transport
ATV Trailer			Equipment Transport

Table 3.12-H: Wildland Fire Equipment – DPW-ENRD

Make	Model	Quantity
Stihl Chainsaw	MS-362C	7
Stihl Chainsaw	MS-441C	2
Portable Pump	100-H	3
Stihl Leafblower	BH-600	3
ATV Torch	FireFox	3
Tractor Disc		3
Debris Blower	Buffalo	1

Table 3.12-I: Wildland Fire Radios – DPW-ENRD

Make	Model	Quantity
Harris	Unity XG-100P	11
Harris	XL-185	8
Harris	XG-75P	9
Motorola	XTS 5000	7
Motorola	APX 7000	5

A majority of equipment and supplies are purchased using Forestry funds (ARA) through the GPC process. In order to purchase vehicle and heavy equipment, these items need to be approved on the installations TDA and justified through the POM and VAM/VURB process. For heavy equipment that is on-hand and approved on the TDA, the Forestry Branch has been able to replace older equipment utilizing the Forestry Reserve Account through project submission and approval by Army Environmental Command.

See the following Appendices for equipment inventories specific DPW-ENRD vehicles and equipment:

Appendix E: Forestry 2 – Brush Truck Check List (pg. 133)

Appendix F: Fire Cache Inventory (pg. 136)

Appendix G: Polaris Ranger 1000 Equipment Inventory (pg. 138)

Appendix H: Polaris Range 900 XP Equipment Inventory (pg. 140)

Appendix I: Polaris Sportsman 570SP Equipment Inventory (pg. 142)

3.13. COMMUNICATIONS

The Fort A.P. Hill Land Mobile Radio (LMR) system enables installation personnel and training units to communicate using handheld radios. Motorola and Harris (formally M/A-COM) are two specific brands of radios used on the installation. The specifications that allow these radios to operate on the Fort A.P. Hill system include Project 25 (P25), ultra-high frequency (UHF) trunking, and 380-400 MHz frequency range capabilities. LMR radio system training will be conducted so that all personnel are aware of system capabilities that may be leveraged in emergency response situations.

External agency radio systems must be set up in advanced for seamless incorporation in the Fort A.P. Hill radio system in the event of large wildfire event. Currently, communications have been established with Caroline Fire/Police and Virginia State Fire/Police. The LMR system is also connected with other

installations in the National Capital Region (NCR). Communication with these agencies would require the creation of a common talkgroup or the DES dispatcher would need to patch the existing talk groups.

Proactively identifying additional agencies or DoD entities that may assist during large wildfire events and establishing an agency-specific communication plan may prove beneficial for the installation for timely response when needed. This would require identifying the desired agency(ies), attaining permission and frequency approval, and additional contract support for equipment and installation.

For wildfire response communication procedures, the Fort A.P. Hill IEMP (2011) Annex ESF-2 can be referenced for additional information related to emergency communications capabilities. Per the Fort A.P. Hill Incident Command System Plan, it is the role of the Communication Officer within the Directorate of Information Management (DOIM) to develop plans to meet the incident interoperable communication needs. Additionally, the Fort A.P. Hill Signal Operating Instructions (SOI) (2012) provides detailed information on call procedures, medical evacuation procedures, frequency allocation, and lists the call signs for all Command, DES, DPTMS, DPW, and DOL radio users.

For prescribed burn communication procedures, the Prescribed Burn Boss will designate the talkgroup to be used during the burn. Generally, FORESTRY will be used on prescribed burns implemented within the training areas and controlled access areas. The Prescribed Burn Boss will monitor DPTMS2 to ensure communication with fire desk personnel. The Prescribed Burn Boss will be responsible for scanning additional talkgroups and sharing information with burn crews as needed.

Cellular phones and landlines serve as a supplemental communication device on wildland fire events and can be used as a back-up in the event that LMR communication is unavailable due to “dead zones” or overloaded frequencies.

3.13.1. Radio Talkgroups

Table 3.13.1-A: Wildland Fire Talkgroups

Talkgroup	Talkgroup ID
Caroline Fire	1058
DES911	1054
DPTMS 2	1012
DPW	1022
Environmental	1042
Fire 2	1019
Fire 3	1016
Forestry	1034
Range Ops	1004
VA State Fire	1057

3.13.2. Notifications

See Appendix J: Prescribed Burn Notifications Roster (pg. 144) for complete list of individuals who are notified prior to prescribe burn implementation.

During wildfire events, the FAPH Fire Department notifies MPIO based on the current fire situation and expectations during suppression activities.

3.13.3. Public Relations

The public will be informed of the prescribed fire program through annual news releases prior to prescribe fire season, interpretive messages, and educational programs as opportunities arise.

Special notification should be made for neighbors with known physical ailments that could be adversely affected by smoke.

3.14. WILDLAND SUPPRESSION STRATEGY

Strategy is an overall plan of action for fighting a fire which gives regard to the safest, most cost- efficient use of personnel and equipment in consideration of the value of threatened resources, fire behavior, legal constraints, and objectives established for resource management. Tactics are the operational aspects of fire suppression. Tactics formulate exactly what suppression measures are

necessary to extinguish a fire and where and how to implement them. Tactics must be consistent with the strategy established for suppressing a fire.

Most wildland fires on Fort A.P. Hill are suppressed by initial attack (first-to-respond) forces and related suppression principles. The following sections identify Fort A.P. Hill's strategies, tactics, and related responsibilities in wildfire control and suppression efforts.

3.14.1. Suppression Responsibilities

The Fire Department will be the first resource to respond to all wildfire incidents. They will conduct the initial size-up of the fire and report that information to dispatch, who will subsequently notify Forestry. The Fire Department's primary responsibility will be to protect structures and targets. Overall suppression of wildland fires is a responsibility of DES-Fire Department in conjunction with DPW-ENRD-Forestry utilizing Unified Incident Command.

During duty hours, the Fire Department will be the first resource dispatched to the scene. If the fire is outside of the range proper firebreak burning in the forest, a grassland, or similar vegetation and not directly threatening targets, structures, or the installation boundary, ENRD Forestry Branch will be dispatched to the scene to implement a Unified Command with the Fire Department to suppress the fire.

During non-duty hours, the Fire Department will be the first resource dispatched to the scene. If the fire is outside of the range proper firebreak burning in the forest, a grassland, or similar vegetation and not directly threatening targets, structures, or the installation boundary, ENRD Forestry Branch will be notified and dispatched to the scene to implement a Unified Command with the Fire Department to suppress the fire. If ENRD Forestry Branch personnel are unable to report to the scene, they at least will be consulted before large back-burn operations are implemented.

ENRD will provide information related to natural resources that need to be protected to the extent feasible during wildfire containment and control operations. These areas will include endangered species sites, cultural resources, timber harvest sites, forest stands, or other resources and/or staged equipment that could be negatively impacted by a fire.

3.14.2. Suppression Priorities

Suppression strategy decisions will be weighed according to the resources at risk in relation to the relative risk to fire suppression personnel. Endangering personnel to battle a wildfire that poses a limited threat to

only the aesthetic quality of the installation must naturally receive a lower assessment for response than one that threatens both personnel and property (capital structures or equipment). All values-at-risk, including those less visible (e.g., sensitive natural resources), require consideration in planning protection strategies. The following list describes values-at-risk that will be considered in descending order of priority:

1. Personnel
   The areas where personnel are most likely to be endangered by wildfire activity will receive the highest priority response and a control strategy will be evaluated. This includes residences, business areas, active training areas, and areas in immediate proximity to main travel thoroughfares.

2. Property
   After personnel safety, the protection of DoD and private property will be prioritized in response efforts. A control strategy will be evaluated for the protection of identified resources. This includes areas containing structures, fixed or mobile equipment that cannot be moved in a timely manner and other capital property.

3. Training
   In support of the Fort A.P. Hill mission, areas for training that are threatened by wildfire receive additional prioritization based upon the activity for that area. A confinement, containment, or control strategy may be appropriate or required. This includes a strategy that minimizes range “downtime”; areas that experience year-round activity and areas of training significance where major and or minor capital investment has occurred will receive a higher priority than other training areas.

4. Sensitive Environmental Resources
   The local natural environment contains many unique areas of ecological importance. It is the goal of Fort A.P. Hill to provide superior training opportunities while also providing for sustainable ecosystem management. A containment strategy will generally be appropriate for the protection of these resources. This includes habitat areas for both federal and state threatened and endangered species, architectural or archeological cultural resource sites, and other unique ecosystem features.

5. Forest Resource
   The forest on Fort A.P. Hill not only provides a training landscape and habitat for wildlife, but the standing timber and regenerating forest has commercial value and is a monetary asset to the Army. The prioritization for fire activity response concerning forest regeneration or commercial timber value is lower priority, but still requires consideration. A containment strategy will generally be appropriate for the protection of these resources.

Figure 3.14.2-A: Sensitive Environmental Resources (pg. 87) identifies these resources across the installation. Resources at risk will be evaluated for appropriate suppression strategies. This includes considering appropriate application of large-acreage back-burns or the benefit gained by tying a control line in to a wetland. Physical resources and environmental resources will be protected when it can be done safely.

The sensitive environmental resources map is available and should be used to determine potential impacts before large scale back-burns are initiated or before tying a plow or dozer line into a wetland.

3.14.3. Suppression Tactics and Guidelines

Several suppression strategies are recognized for wildfire response. Depending on the resources at risk, a wildfire can be confined to an existing area, contained to a newly delineated area, or actively controlled with the intent of extinguishing the fire as quickly as possible. Table 3.14.3-A summarizes these three wildfire suppression strategies and the tactics that can be used to accomplish the selected method.

Table 3.14.3-A: Wildfire Suppression Strategies

Method	Purpose	Tactics
Confine Defensive (Fire Department)	To restrict the fire within determined, existing boundaries. No direct action will be taken to extinguish the fire.	• Backfires • Hose lays • Cold trails • Natural barriers
Contain Indirect (Fire Department)	To restrict fire to a defined area, using combination of natural and constructed barriers that will stop the spread of fire under the prevailing and forecasted weather conditions.	• Line construction • Backfires • Cold trails • Hose lays • Natural barrier extension
Control Direct (Fire Department)	To aggressively fight the fire through use of all personnel, equipment and aircraft, in order to extinguish the fire as quickly as possible.	• Direct attack methods • Pump trucks • Backpack pumps • Fire tools

3.14.4. UXO Guidelines

Reference Appendix P: UXO Briefing (pg. 188)

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4. WILDLAND FIRE OPERATIONAL GUIDANCE

4.1. WILDFIRE PREVENTION AND RISK MITIGATION

The objective of fire prevention activities is to prevent human-caused fires and encourage installation personnel to implement mitigation measures around at-risk assets.

This objective will be accomplished by:

- Making personnel aware of precautions to prevent an unwanted ignition.
- Informing visitors of fire danger through personal contact and posted signs.
- Implementing range and/or training area closures during periods of extreme fire danger.
- Altering or delaying scheduled training events during periods of extreme fire danger.
- Coordinating with internal and external partners during periods of extreme fire danger.

Prevention Program Goals are to:

- Reduce the likelihood and severity of wildfires.
- Decrease the frequency of human-caused wildfires.
- Reduce emergency suppression costs.
- Reduce fire size and intensity by developing programs such as fuels reduction/modification.
- Establish a cost-effective prevention program.
- Integrate and coordinate prevention program with local installation fire department, State foresters, nearby land management agencies, and wildfire protection organizations.
- Promote the creation of incentives for building and maintaining fire-safe structures and fire-safe communities to reduce the unwanted consequences of fire.
- Minimize damage from wildfires.
- Incorporate prevention programs into the wildland fire management outreach program.

Prevention priorities of the installation are:

- Prevent catastrophic fires and human-caused wildfires (highest priority).
- Minimize losses from wildfire while considering resource management objectives.
- Collaborate through an interagency approach among all Federal, State, county, and municipal agencies/entities.
- Investigate human-caused wildfires.

4.2. FIRE DANGER RATING SYSTEM (FDRS) AND NOTIFICATIONS

The National Fire Danger Rating System (NFDRS) was developed primarily by the U.S. Forest Service to give national uniformity to recording of fire weather and fire danger rating data and to provide fire managers the means of reliably evaluating the factors influencing fire danger in their area. The first version of the nation system was released in 1972 and was based on engineering and physics principles, rather than local observations, to make it applicable nationwide. Modifications to this system occurred in 1978 and 1988. NFDRS is a system that integrates the effects of existing and expected states of selected fire danger factors into one or more qualitative or numeric indices that reflect an area's protection needs.

On Fort A.P. Hill, Forestry Branch personnel compute and report the daily FDR classification. The FDR classification determination is reflective of the general conditions over the entire installation. Ratings are developed for current (observed) or future (predicted) weather based on the temperature, relative humidity, build-up index, vegetative stage/season, and fine fuel moisture. The FDR is an indicator of the expected rate of spread (feet per minute) in the identified fuel type under the given conditions and can indicate the difficulty in containing a fire that occurs under those conditions.

The FDR has been classified into five numeric and descriptive categories of fire risk: I – Low, II – Moderate, III – High, IV – Very High, and V – Extreme. These classifications are used for indicating the daily level of fire danger for the installation. The FDR classification of an area gives the land manager a tool for daily fire risk decisions and is intended to supplement the fire manager's knowledge of the local area and of consequences to decisions.

4.3. FIRE WEATHER DATA AND FORECASTING

4.3.1. Weather Stations

The Forestry branch currently manages five remote area weather stations across the installation. Four of these stations are in fixed locations with the fifth station being a quick-deploy unit.

These stations transmit hourly weather data via satellite to multiple weather reporting sources. These sources include MesoWest, RAWS USA Climate Archive, and National Weather Service Weather & Hazards Data Viewer. Having the capability to determine hourly weather conditions greatly increases our ability to manage wildland fire incidents and provide recommendations for current training operations.

Table 4.3.1-A: Fort A.P. Hill RAWS

Station Name	Type	Location	Transmit Time	Elevation (ft.)
FAPH DELOS	Fixed	Delos	00:33 minutes	196
FAPH EODTC	Fixed	TA 26B – EOD Complex	00:32 minutes	80
FAPH NORTH1	Fixed	TA 15B	00:26 minutes	201
FAPH SOUTH1	Fixed	CA 14B	00:33 minutes	206
FAPH QD1	Portable	Anderson Camp	00:33 minutes	116

For on-the-ground location, see Figure 4.3.1-A: Fort A.P. Hill RAWS Locations (pg. 89).

4.3.2. Weather Information Management System (WIMS)

Forestry Branch personnel utilize the WIMS application, in conjunction with a local Fire Spread Index, to generate the daily FDR for the installation. It provides a one-stop shop for weather observations, vegetation conditions, and weather data management that allows for better decision-making when implementing prescribed fire operations, suppressing wildfire events, or determining training restrictions.

4.3.3. Spot Forecast

A spot forecast is a product produced by the National Weather Service (NWS) that provides a detailed forecast of an area based on coordinate location, ignition time, fire weather parameters, size of the incident, and fuel type. Utilizing this localized weather forecast in conjunction with the regional weather forecast, allows the Prescribed Burn Boss to make accurate decisions related to prescribed fire implementation. A Spot Forecast is also a great resource to be utilized by Incident Commanders during wildfire response for up-to-date weather conditions. A spot forecast can be requested online at the following location:

https://www.weather.gov/spot/request/

4.3.4. NWS Red Flag Warning

A Red Flag Warning means warm temperatures, very low humidities, and stronger winds are expected to combine to produce an increased risk of fire danger. The Prescribed Burn Boss and Incident Commander(s) will check to see if the NWS has issued a Red Flag Warning for our area

when fire weather conditions are elevated. Restrictions to prescribed fire implementation and training will be implemented if a Red Flag Warning is issued.

4.4. MILITARY TRAINING / MUNITION LIMITATIONS

The possibility of destructive wildfire increases relative to the increase in the fire danger classification. As a result, DPTMS – Range Control may impose certain restrictions on training and operations at Fort A.P. Hill for the purpose of reducing the probability of severe wildfires. DPTMS – Range Control will utilize a decision matrix that considers the FDR, weapons systems and training type, training location, on-site fuel conditions, on-site fuel loading, and firebreak conditions to make decisions on training restrictions. Table 4.4-A contains the recommended precautions for operational and training personnel according to the FDR class. Deviations from Table 4.4 are permitted with the completion of a Deliberate Risk Assessment (DRA) form (Appendix K – pg.146) signed by the Garrison Commander.

Table 4.4-A: Recommended Precautions Based on Fire Danger Rating

Fire Danger Rating Class	Condition	Recommended Precautions
Class I – LOW	Fires are not likely to become serious and control is relatively easy.	Normal field activity is permitted. Firing of incendiaries and outdoor smoking permitted.
Class II – MODERATE	Fires are not likely to become serious and no serious impediments to control are expected.	Normal field activity, with a heightened awareness is permitted. Firing of incendiaries and outdoor smoking permitted.
Class III – HIGH	Fires may become serious and control could become difficult, unless extinguished when small.	Caution must be used when using incendiary devices (e.g., tracers, smoke grenades, pyrotechnics, or demolitions).
Class IV – VERY HIGH	Fires start easily, spread rapidly, and increase quickly in intensity. All fires are potentially serious.	Limit use of incendiary devices unless confined to a fire resistant perimeter. Outdoor smoking permitted only on areas of exposed earth. Contact Forestry Branch (x8475) for current fire situation.
Class V – EXTREME	Fires start quickly, spread furiously, and burn intensely. All fires are potentially dangerous.	Do not permit use of incendiary devices. Outdoor smoking is not permitted.

4.5. FIRE PREVENTION EDUCATION PROGRAMS

A key to wildfire prevention is education for increased public and Fort A.P. Hill user awareness. Successful education programs can help to reduce the incident of accidentally-ignited wildfires as well as encourage proper wildfire response procedures. ITAM's Sustainable Range Awareness program can play an active role on distributing appropriate educational materials to installation users.

Proper preparation and training will also create a knowledgeable and capable prescribed burning and wildfire response force and provide the basis for coordination in advance emergency situations regarding fire. This preparation

revolves around training that produces understanding and knowledge of wildland fire behavior in response to weather, fuel and topographic conditions, understanding and knowledge of firefighting equipment and readiness planning. Each of these components is equally important in the effort of preparation and prevention.

The Fire Prevention Program conducted through DES at Fort A.P. Hill includes training and public awareness for all military personnel, civilian employees, and interested dependents and visitors.
Within the scope of this training, the following information is presented:

- The majority of all wildfire activity on Fort A.P. Hill is caused by the use of incendiary devices in training of military personnel.
- All personnel operating, living, or working at Fort A.P. Hill will be informed of the criteria for fire prevention relative to the daily FDR.
- Primary concern for the control of wildfire activity is the protection of life and property.

The use of public information dissemination tools (e.g., posters, flyers, internal newsletters, and placards) is included in the effort to ensure awareness and sensitivity to the potential severity of wildfire activity. ITAM's Sustainable Range Awareness program can provide a venue for creating and disseminating educational materials. Additional measures taken to provide avenues for such education include:

- Establishing centralized dissemination points for fire prevention information at DPTMS, Provost Marshal, and Fire Department offices on the installation.
- Provide printed prevention material to all offices, tenants, and visiting training units to Fort A.P. Hill.
- Increase awareness during periods of extreme fire danger by posting conspicuous posters and placards at installation entrances and points-of-contact (e.g., training and range control offices).
- Initiate or optimize media involvement to establish the installation's commitment to fire prevention through the use of news articles, photo opportunities, and press releases.
- Participation by fire response personnel and equipment in local parades, fairs and other "outreach" programs, to promote fire prevention awareness.

*Fire Prevention and Education Programs will only be implemented based on resource availability, funding allocation, and mission requirements.

4.6. RESOURCE PROTECTION

4.6.1. Firebreak Development and Maintenance

There are approximately 202 miles of permanent firebreaks across the installation that require some level of maintenance prior to prescribed fire implementation. This does not include gravel roads surrounding designated burn blocks as these are typically maintained year-round for day-to-day operations and to meet the training mission.

Maintenance of the 202 miles of firebreaks is managed by the ENRD Forestry Branch. Once the annual fire plan is developed, a list of firebreaks to be maintained is developed and implemented. Most firebreak maintenance is completed by Forestry personnel and equipment but ENRD Fish and Wildlife Branch, DPW Roads & Grounds, and DPTMS ITAM personnel and equipment are utilized to maintain firebreaks associated with those programs.

A majority of the firebreaks used to keep fire within burn block boundaries are already identified and covered under the INRMP and FY21-25 Forest Management Activities – Environmental Assessment. However, new firebreaks will need to be created based on land condition changes, burn block layout, and other factors related to prescribed fire implementation. When a new firebreak is required, Forestry personnel determine the location, type of firebreak, and equipment needed to create and maintain the firebreak. This information is then included in the yearly NRSA review process and an associated Record of Environmental Consideration is created.

The following table breaks down the 202 miles of permanent firebreaks by equipment type across the installation:

Table 4.6.1-A: Miles of Firebreaks Maintained by Equipment Type

Equipment	Total Length (miles)
Dozer	63
Fire Plow	13
Grader	53
Tractor Disc	35
Shredder	1
Hand Tools	13
TBD	24
Total	*202*

4.7. WILDFIRE INCIDENT MANAGEMENT

4.7.1. Wildfire Response and Organization and Equipment

The IC is a single individual responsible to the installation for all incident activities, including the development of incident management strategies and tactics, and the ordering, deployment, and release of resources. IC responsibilities include:

- Provide a size-up to dispatch as soon as possible upon arrival on scene.
- Complete and file an incident report with the installation dispatch center.
- Assess potential management by suppression and/ or by wildfire for resource benefits as incident objective(s).
- Use guidance in this IWFMP. If from a cooperating agency, secure a Delegation of Authority to implement the selected suppression response and manage an organization to implement effective strategies and tactics. Minimize suppression impacts where possible without reducing the effectiveness of the actions being undertaken.
- Determine resource needs and order as needed through local dispatch.
- Ensure all resources assigned and those incoming receive a briefing. Document these briefings. Refer to the Briefing Checklist in the Incident Response Pocket Guide (IRPG).
- Continually re-assess incident complexity using the checklist in the IRPG. When a more qualified IC is needed, inform dispatch and delegated unit administrator and place the order for a higher level IC.
- Depending on incident complexity, additional responsibilities for the IC may apply. Utilize NWCG Fireline Handbook for more detailed description of IC responsibilities.
- All resources, including mutual aid resources, will report to the IC (in person or by radio) to receive an incident briefing prior to tactical assignment deployment.
- All wildfires must be investigated to determine fire cause. Document findings on ICS-214, determine if negligence or criminal intent were factors. If the IC suspects a fire cause is suspicious, a qualified

wildland fire investigator can be ordered. The point of origin should be protected for investigation purposes.

4.7.2. Size-Up

Size-up is defined as the evaluation of the fire to determine a course of action for suppression. The size-up checklist in the Interagency IRPG is used as the installation's standard and is included below:

- Incident Type (wildland fire, vehicle accident, hazmat spill, search and rescue, etc.)
- Location/Jurisdiction
- Incident Size
- Incident Status
- Establish IC and Fire Name
- Weather Conditions
- Radio Frequencies
- Best Access Routes
- Assets/Values at Risk
- Special Hazards or Concerns
- Additional Resource Needs

4.7.3. Initial Attack Strategies and Capabilities

The initial attack methodology will be determined by the IC once the scope and intensity of the fire activity has been identified. Use of each attack methodology (direct, indirect, or parallel) will be determined by various criteria prioritized by risk to personnel, property, training, environmental and forest resources. Either a direct, indirect, or parallel attack on the fire will be evaluated to determine whether the results meet the requirements of protection for the area involved. The IC will also evaluate resource availability, fire intensity, fire environment, rate of spread, and firefighter and public safety. The NWCG Fireline Handbook and Incident Response Pocket Guide provides information to consider in attack methodology decisions in relation to fire size, intensity, and estimated production rates of response resources.

Direct Attack:

Direct attack is a treatment that is directly applied to burning fuel on the fire's edge or perimeter. The flames may be knocked down by dirt, water, hand tools or chemical treatment. The fire edge is generally treated by a follow-up fireline. An alternative method for a direct attack is to construct a

fireline close to the fire's edge and the fuel between the fireline and the fire is burned out or the fire is allowed to burn to the fireline. The direct method utilizes fire plows, pump trucks, hydrants, backpacks, hand implements and other equipment, in an attempt to extinguish the blaze.

In the Piedmont and Coastal Plains geographic regions, the topography ranges from gently rolling hillsides to steep slopes. Tractor plow units along with hand crews are effectively used on most fires. The fuel types in this area range from pure upland hardwoods to extensive loblolly pine plantations. Heavier fuel loading compounded with the slope, make for hazardous conditions in the Piedmont. Vast areas of unbroken loblolly pine plantations add significantly to the safety hazards of the wildland firefighter in the Coastal Plains.

Flame length is an important fire behavior factor that indicates fire intensity and will be considered during the size-up of the incident. Generally, fires with flame lengths greater than four feet are too intense for direct attack by persons using hand tools. Refer to the NWCG Fireline Handbook for additional information and guidelines.

Indirect Attack:

This methodology is accomplished by building a fireline some distance from the fire edge and back- firing the unburned fuel between the fireline and the fire edge or allowing the fire to burn to the designated firebreak. Indirect attack takes advantage of using natural and constructed barriers as fireline and allows a choice of timing for backfiring. Indirect attack is generally used on hot fires with high rates of spread where direct attack is not possible, if an area is too dangerous to enter for direct attack methodology, or if a decision is made to permit the wildfire to continue to burn in a situation that can be controlled to meet management objectives.

These methods include back-burning, construction or use of existing firebreaks or natural fire retardant geographical features (rock outcrops, rivers, ponds, lakes, bare ground, etc.). This method is less costly and less dangerous to the response personnel than a direct attack. As such, indirect attack methodology will be utilized whenever possible.

Parallel Attack:

A parallel attack is made by constructing a fireline parallel to, but further from, the fire edge than in direct attack. This methodology may shorten fireline construction by cutting across unburned fingers. Generally, the fuel between the fireline and the fire edge is burned out in conjunction with fireline construction.

4.7.4. Extended Attack Strategies and Capabilities

A wildfire that has not been contained or controlled by initial attack forces and for which more firefighting resources are arriving, in route, or being ordered by the initial attack IC constitutes and extended attack. Extended attack implies that the complexity level of the incident has or may increase beyond the capabilities of initial attack IC.

Due to the topography and extensive existing firebreak system in place on the installation, extended attack methodologies are rarely required though extreme fire weather and fire intensity conditions can and do occur. This methodology could employ air, mechanical, hand crew, or firing crew support and dictates the initiation of the installation ICS if not already in place.

Extended attack requires significant logistical and resource considerations that can be addressed using the ICS. These may include, but is not limited to, personnel tracking for time on the fireline and related work/rest ratios, food, water, lodging, equipment refueling, equipment mechanical repairs, replacement radios and batteries, talkgroup sharing, tracking the arrival and departure of external resources, coordination of air operations, and Range Complex gate access. Regular training exercises will occur to incorporate extended attack and ICS methodologies, to help foresee and address challenges before an actual event, and to seamlessly integrate the EOC in wildfire response.

4.7.5. Mop-Up

Once a fire has been controlled, contained or confined, the IC will ensure that all smoldering embers, snags, stumps or other fuel sources will not cross firebreaks. Patrols of the perimeter of the fire activity will continue on a regular basis until assurance of complete control is achieved. Burning stumps, roots, or snags near the fireline will be extinguished with water or soil, or otherwise safely moved away from the fireline.

In the circumstances where fireplow lines were used to establish wildfire control lines, a post- suppression evaluation will be conducted by ENRD personnel to determine the need for remediation efforts. The Virginia Forestry Best Management Practices for Water Quality (2011) will be implemented. Direct impacts to waterways and wetlands will be mitigated immediately to reduce soil erosion impacts. Any fences or barriers that were damaged or moved for access will be replaced and any other remediable impacts due to suppression activities will be addressed. DPW – Roads and Grounds Branch and DPTMS – LRAM program will complete identified remediation requirements.

4.7.6. Post-Suppression Activities

Repairing the impacts of suppression activities is the responsibility of the Incident Commander. Such work should be completed by incident resources prior to final demobilization whenever practical. However, it may be more cost-effective and practical to delay repairs to improve the probability of success.

Repair of suppression damage will occur prior to crew release from the fire, including:

- Removing all trash from incident facilities, work areas and firelines
- Replace soil dug from firelines to refill them to level; add water bars as needed
- Fell and buck up hazardous trees and snags
- Flush cut all stumps as close to ground level as practicable
- Roll back and compact sod overturned by plowing (with a grader or by hand) to preserve native grass root stock
- Identify and Inventory potential invasive plant species in suppression areas.

4.7.7. Incident Investigation and Reporting

Wildfires should be investigated to determine cause, origin, and responsibility. The appropriate authority at the installation (DES-Fire Department) will investigate all human-caused wildfires at the earliest possible time it can be safely done. Investigations may range from a documented determination of cause by an initial response crew to a criminal investigation by a qualified arson investigator.

4.7.7.1. Wildland Fire Mapping Application (WFMAP)

See section 5.3.2. Wildland Fire Mapping Application.

4.8. PRESCRIBED FIRE

The NWCG Glossary of Fire Terms defines prescribed fire as: “Any fire intentionally ignited by management actions in accordance with applicable laws, policies, and regulations to meet specific objectives.” Public outreach campaigns are often encouraged to use the following definition: “Prescribed Fire… a safe way to apply a natural process, ensure ecosystem health, and reduce wildfire risk.” Both definitions are correct and should be used as appropriate depending on the audience when discussing prescribed fire.

4.8.1. Prescribed Fire Program Planning Procedures

Due to the innate complexity of using fire for land management and due to the potential resource loss and environmental impacts if fire is misused, a set of procedures has been established to direct planning and coordination efforts for safe, appropriate, and successful application of prescribed fire. The following activities will be performed for prescribed burns occurring on Fort A.P. Hill.

The implementation of prescribed fire requires knowledge of fire behavior, suppression techniques, and environmental effects of fire and will only be applied by those trained in its use. Proper prescription, detailed planning, and a high level of programmatic coordination are needed for every area where prescribed burning is contemplated.

Upfront analysis needs to be performed across the installation landscape to determine which areas require wildland fire to meet a given land management objective. Potential prescribed burn sites are selected based on identified need and prioritized based on a perceived risk and/or land use specifications.

Once prescribed burn sites have been identified and select, a proposed Annual Prescribed Fire Plan (Appendix L – pg. 151) is completed well in advanced of the prescribed burn season. This plan documents the types of burns to occur in the upcoming year with related objectives, timing, and the desired fire intensity as related to FDR classification. The plan is supplemented with maps showing the location and objectives of each planned prescribed burn site on the installation, the proposed burns in relation to identified environmental concern areas, and the proposed burns in relation to identified military training resource concerns. The plan with maps is staffed through, DPW, ENRD, DPTMS, DES (Fire Department), and final approval is reserved for the Garrison Commander.

Associated Job Hazard Analyses (JHAs) and a yearly Deliberate Risk Assessment (DRA) are updated and approved. The JHA outlines the potential health and safety hazards related to prescribed burning activities in either the TAs or in the CAs and impact areas. The assessments will determine initial risk levels and the residual risk levels after controls are implemented. Personnel from DPW, DPTMS or DES that are directly involved in prescribed burning activities are to review and sign the JHAs annually prior to the commencement of burning.

High-priority burn areas will be scheduled in advance within RFMSS to ensure access to the area and that training personnel and equipment are not at risk. DPTMS and DES will be notified of the intent to burn as far in

advanced as possible to the planned activity. It is recognized that prescribed burning is subject to variations in weather patterns making scheduling and advanced planning difficult.

AR 420-1 requires that a hot-work permit (DA Form 5383) be submitted to the DES Fire Department for any hot-work conducted by installation personnel or contractors while on the installation. The Operational Safety and Health Administration (OSHA) define hot-work as riveting, welding, flame cutting, or other fire or spark-producing operation. Forestry Branch completes and emails DA form 5383 to the Fire Department on the morning of planned prescribed burns. The form will indicate the date, location, and approximate time that each burn will take place. The signed form will be maintained on-site of the burn by Burn Boss and filed for record following the completion of the burn.

The daily Prescribed Burn Plan addresses site location, preferred and actual weather conditions, required personnel and equipment, smoke management considerations, fuel conditions and considerations, objectives and strategy for each prescribed burn, and planned mop-up activities. In addition, the plan will provide a post-burn success evaluation, map of the burn block with pre- identified safety zones and other safety considerations, a notification list, and the signature of the preparer.

A sample Daily Prescribed Fire Plan, JHA, and Hot-Work Permit can be reviewed in Appendix M (pg. 162).

To ensure that there is no unintended impact made on natural resources as a result of prescribed burning, a NRSA is performed for each prescribed burn block and related firebreaks. The NRSA provides all natural and cultural resource managers a review period to examine and survey each prescribed burn block. The assessment involves both desk-top and field surveys, including cultural resource surveys of all new firebreaks. This process allows for documentation of an appropriate environmental review and allows the Prescribed Burn Boss to adjust plans as needed to address resource considerations.

4.8.1.1 Prescribed Fire Constraints

Although firefighter and public safety are of utmost concern during prescribed burning operation, consideration must also be given to other resources located within or in proximity to the burn block. In the use of prescribed fire as a land management practice, it is appropriate to establish Best Management Practices that provide

consideration to and appropriate protection of natural, cultural, and real property resources. The following guideline will be applied in prescribe burn block selection, prescriptions, and burning techniques:

- Wetlands:
    - All VDOF and Fort A.P. Hill Best Management practices must be followed with regards to wetlands, intermittent, and perennial streams.
    - Back-burn away from streams and wetlands in prescribed burn blocks whenever possible to minimize soil exposure near water sources.

- Wildlife:
    - Observe all bald eagle protection protocols in effect during prescribed burning activities
    - If a bald eagle nest occurs within a selected prescribed burn block, burn the block prior to December 15th.
    - Burns that occur in proximity to stands with active nest sites will apply prescription standards for wind direction that will move smoke away from nest sites during the nesting season (December 15th – July 15th).

- Endangered Species:
    - Prohibit all machinery and limit foot traffic within endangered plant colonies and colony buffers.
    - Actively fight wildfires or escaped prescribed burns that threaten identified plant colonies using low-impact techniques such as handlines and wetlines.
    - Indicate colony and buffer locations of endangered plants on site maps provided to prescribed burn personnel.
    - Prohibit all machinery and avoid the use of prescribed fire with the known Indiana bat maternity colony.

- Late-Seral / Old-Growth Areas:
    - Do not include identified old-growth areas or buffers in prescribed burn plans unless specifically requested.

- Actively protect areas threatened by wildfire when needed with low-impact techniques such as handlines or wetlines.

- Cultural Resources:
  - Coordinate prescribed burning activities with the Cultural Resources Manager to identify known cultural resources that require protection from burn activities (e.g., buildings or other above-ground features).
  - Identify features requiring special action or protection on maps provided to prescribed burn personnel.
  - Establish appropriate protection method per feature with Cultural Resources Manager (e.g., blackline, wetline, or handline).
  - Complete a cultural resources survey on all newly proposed firebreaks.
  - Apply guidance outline in the ICRMP.

- Real Property:
  - Identify all structures or other features on maps provided to prescribed burn personnel.
    Use handline and blackline methods to protect structures from prescribed burning.

4.8.1.2. Coordination and Notifications

When the forecast fire weather parameters are within prescription and areas are available for prescribed burning, the Prescribed Burn Boss will begin the coordination and notification process.

The completed Daily Prescribed Fire Plan, site maps, NOAA fire weather forecast information, and signed yearly-DRA will be available and provided to installation personnel and directorates as requested. Additionally the annual prescribed fire plan, JHA, complete set of burn site maps, and wildland fire status map will be made available. This process maximizes burn program review and transparency and provides detailed site map in the even emergency response is required.

4.8.1.3 Scheduling

The RFMSS is a fundamental tool for prescribed burn planning and personnel accountability. Online RFMSS reservations may be made 30 days prior to required access and may be used to

reserve high- priority burn areas; however, due to the unpredictability in weather and favorable burn conditions, 30- day out planning is difficult to achieve. The Range Officer has approved week-prior and limited day-of requests as suitable with expected training loads and documented scheduling procedures. RFMSS can also be leveraged to determine if personnel are expected to be present in areas where a wildfire is occurring or likely to spread. Additionally, the Game Check Station, run by the ENRD Fish and Wildlife Branch will have accountability of hunter or other recreational users that may be occupying an area.

4.8.1.4 Smoke Management and Air Quality

The production and effect of smoke is a major consideration in wildland fire management. While there are extensive benefits to the application of wildland fire, the discharge of air pollutants and potential public health effects resulting from wildland fire smoke are well documented. The focus of smoke management on Fort A.P. Hill is to minimize the adverse effects of smoke on human health and welfare while maximizing the benefits of prescribed fire. Wildland fire management on the installation will comply with the provisions of the Clean Air Act and the Commonwealth of Virginia Air Pollution Regulations (9VAC130, Emission Standards for Open Burning of the State Air Pollution Control Board).

The objectives of smoke management are to identify and avoid smoke-sensitive areas, reduce emissions, disperse and dilute smoke in order to avoid smoke-sensitive areas and to mitigate visibility issues, particularly on travel corridors. These objectives are accomplished by combining favorable meteorological conditions with a variety of prescribed fire techniques designed to keep smoke emissions to a minimum. Additionally, signage, traffic control, communication with VDOT and public notifications can be used to address visibility issues.

Identified smoke sensitive areas in proximity to Fort A.P. Hill include the towns of Bowling Green and Port Royal, Virginia, the Fort A.P. Hill Headquarters and housing areas, Caroline Detention Facility on the installation, and residential dwellings situated on the perimeter of Fort A.P. Hill.

An understanding of smoke production and behavior factors is required to successfully implement management techniques. Acreage, fuel type and loading, phases of fuel combustion, ventilations rates, wind direction, and inversions all contribute to smoke production and behavior. By managing one or all of these

inputs, fire managers can work to mitigate negative impacts of wildland fire smoke.

Conditions that favor more complete fuel consumption, such as dry fuels and slow-moving back- burns, will reduce the amount of smoldering material and resulting smoke generation. Additionally, thorough post-fire mop-up actions will reduce the amount of material left to smolder and produce smoke. Utilizing wind direction that moves smoke away from sensitive area and avoiding inversions stable air masses will assist in favorable smoke dispersion.

4.8.1.4.1. Prescribed Fire Smoke Management Guide

Smoke generation and movement is a significant factor that guides prescribed burn planning and implementation. Smoke Management Guide for Prescribed and Wildland Fire (2001) produced by NWCG and the recommended smoke management parameters established by VDOF provide reference materials and metrics that can be applied in prescribed fire planning and daily implementation decisions.

The NWCG Smoke Management Guide provides techniques for emission reduction and redistribution. These include pre-burn fuel reduction techniques to reduce the amount of fuel available for combustion, rapid or mass burning techniques to shorten the smoldering phase of combustion, fuel moisture considerations, back-burning, and rapid mop-up are all recommendations provided. The focus is on creating conditions for efficient combustion and reducing the amount of fuel available for combustion.

The VDOF has outlined recommended weather parameters intended to optimize smoke dispersion and movement:

- Visibility exceeds 5 miles.
- Afternoon mixing heights are 500 meters or greater.
- Ventilation rates (mixing height in meters multiplied by transport wind speed in meters per second) is 2,000 or greater.

4.8.1.4.2. Smoke Hazard Monitoring

During the course of a prescribed burn, personnel will be instructed to remain aware of smoke conditions and notify the Prescribed Burn Boss of any observed smoke concerns or hazards, such as smoke on roadways. The Prescribed Burn Boss may assign a patrol to monitor road conditions within the vicinity of the prescribed burn and on local roads. Any smoke complaints or comments received by the PAO, DES, DPTMS, or DPW/ENRD during a prescribed burn should be relayed to the Prescribed Burn Boss and WFPM.

4.8.1.4.3. Smoke Hazard Response and Mitigation

If a smoke issue is likely to occur or has been identified, several actions can be taken to mitigate the situation a safely and quickly as possible. Signage warning of prescribed burn activities and smoky conditions on roadways can be posted prior to or during prescribed burn activity or wildfire event. DES support may be requested to provide traffic control on installation roads and the VDOT and/or Virginia State Police may be contacted for smoke impacting public roadways.

When and where smoke is creating and unacceptable hazard or nuisance, the Prescribed Burn Boss will consider whether implementing suppression actions or expediting the burn-out by varying the ignition pattern is reasonable and safe option. There will be times when suppression is not an option. Thorough mop-up will minimize the presence of smoldering materials that continue to produce smoke.

Awareness of sensitive areas, the effects of firing techniques on smoke emission production, and meteorological influences on smoke dispersion all factor in to a successful smoke management program. On prescribed fires that created a significant (e.g., atypical complaint volume, vehicle accident, etc.), inadvertent negative smoke impact, the Prescribed Burn Boss will perform an After- Action Review (AAR) to compare the predicted and observed weather conditions, factors that contributed to the undesired outcome, and effectiveness of response actions implemented. AARs are intended to

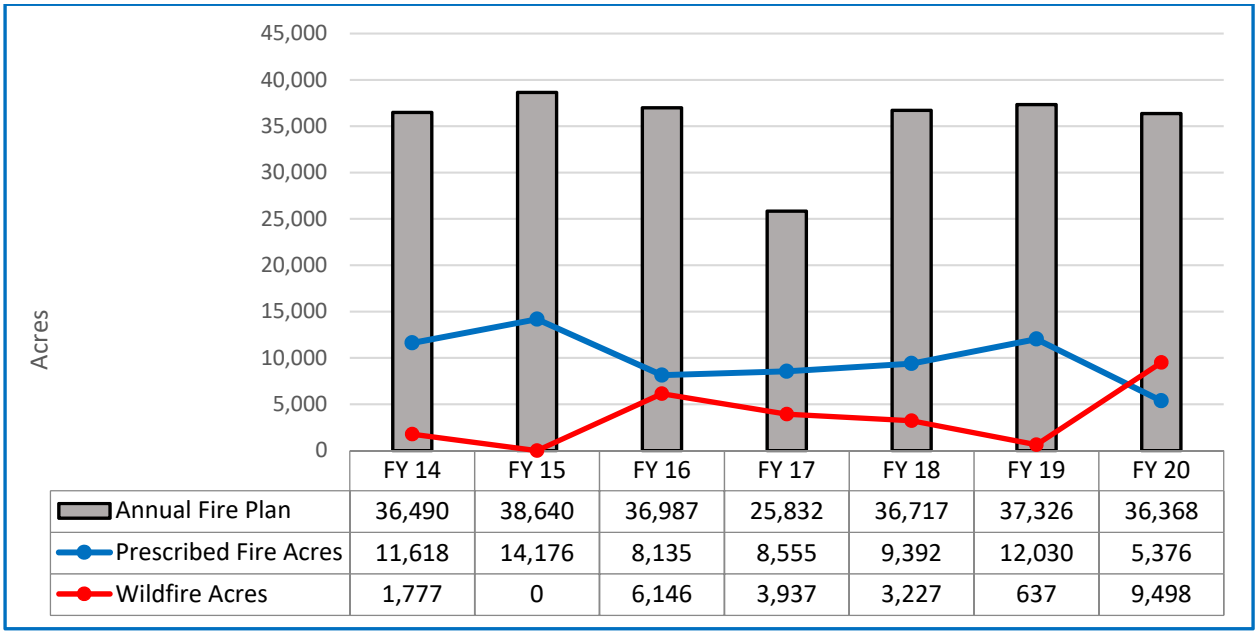
help improve planning and reduce impacts on future prescribed burn activities.

4.8.1.5. Prescribed Fire Plan

4.8.1.5.1. Annual Treatment Acres

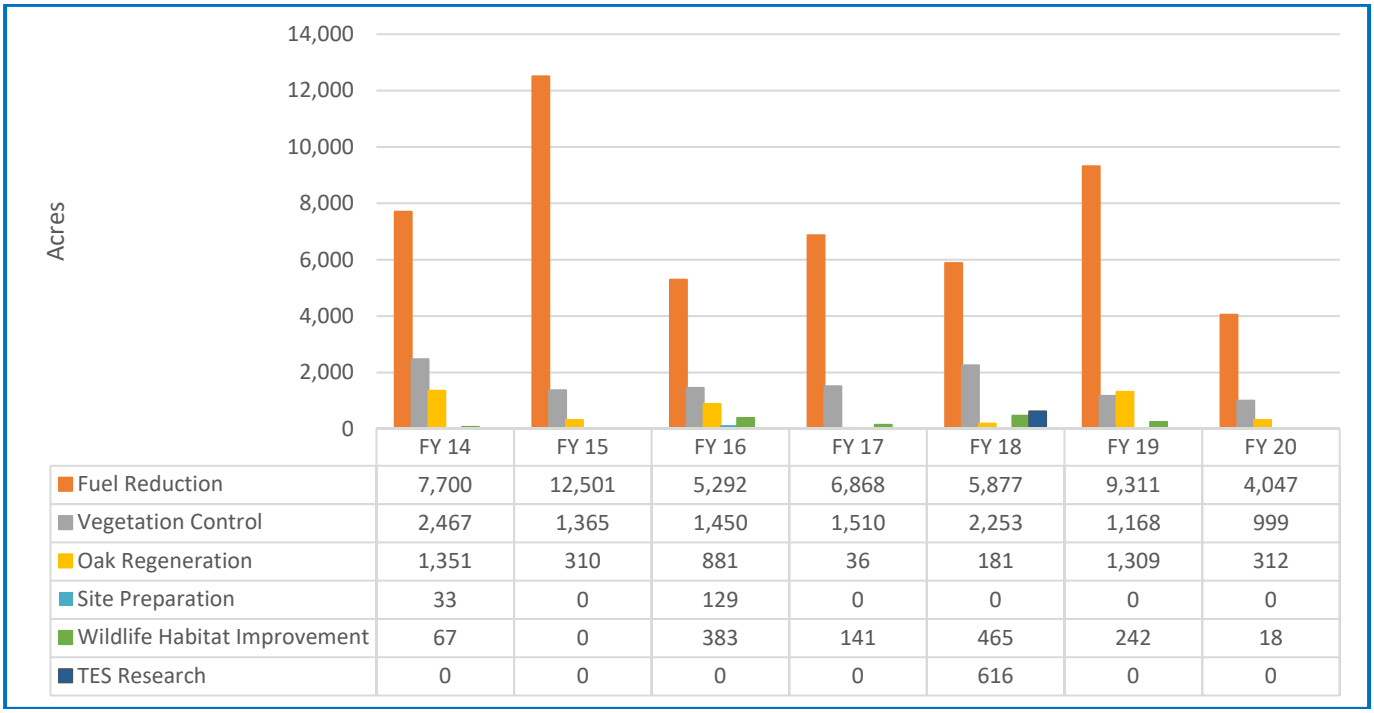
On average, FAPH Forestry plans to burn around 35,500 acres per year. Actual burned acreage per year averages around 10,000. These acreages are categorized into six burn types: fuel reduction, oak regeneration, site preparation, TES Research, vegetation control, and wildlife. Figure 4.8.1.5.1-A shows the annual fire plan acreages and the acreages burned due to prescribed fire and wildfire and Figure 4.8.1.5.1-B shows the breakdown of acres burned based on the six burn types since FY 14.

Figure 4.8.1.5.1-A: Annual Fire Plan Acreages – Planned, Prescribed Fire, and Wildfires



	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20
Annual Fire Plan	36,490	38,640	36,987	25,832	36,717	37,326	36,368
Prescribed Fire Acres	11,618	14,176	8,135	8,555	9,392	12,030	5,376
Wildfire Acres	1,777	0	6,146	3,937	3,227	637	9,498

Figure 4.8.1.5.1-B: Acres Burned by Prescribed Fire Type



	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20
Fuel Reduction	7,700	12,501	5,292	6,868	5,877	9,311	4,047
Vegetation Control	2,467	1,365	1,450	1,510	2,253	1,168	999
Oak Regeneration	1,351	310	881	36	181	1,309	312
Site Preparation	33	0	129	0	0	0	0
Wildlife Habitat Improvement	67	0	383	141	465	242	18
TES Research	0	0	0	0	616	0	0

4.8.1.5.2. Long-Term Planning (5-Year Plan)

A burn matrix was developed by the Forestry Branch to assist with the development of the annual fire plan. The matrix includes all of the burn blocks on FAPH, the ideal wind direction for each block, the fire return interval, and other attributes that make the decision-making process more concise and accurate. The fire return interval for each block is the biggest factor when initially determining which blocks will be burned in a given year. Figures 4.8.1.5.2-A-E (pg. 91-99) depict which blocks will receive prescribed fire over the next five years.

4.8.1.6. Prescribed Fire Training and Qualifications

A centralized wildland fire training and qualifications tracking system is currently being implemented for Natural Resource programs across the Army. Fort A.P. Hill ENRD personnel that have completed NWCG trainings and participated on wildland fire activities are being tracked in the IQCS/IQS system with help from the USFWS, USFS, CEMML, and Tall Timbers Research Station. Their assistance has provided a road-map to obtain required trainings and qualifications for wildland fire personnel.

Multiple training opportunities are offered in various regional wildfire training academies across CONUS. ENRD personnel are encouraged to attend these trainings as required by the position they hold on the fireline. Most ENRD personnel have obtained all the required classroom training and are now opening task books for final qualification. However, due to the high number of personnel that need to attend training, DES benefits logistically and financially by offering on-site training. VDOF, USFS, and private entities have personnel to provide NWCG training. The Annual Fireline Safety Refresher NWCG materials can be administered by appropriate installation personnel. All Fort A.P. Hill wildland fire personnel shall, at minimum, complete the following classes in order to participate in any wildland fire activities on the installation:

- S-130, Wildland Fire Fighting Class
- S-190, Introduction to Wildland Fire Behavior
- L-180, Human Factors in the Wildland Fire Service
- I-100, Introduction to Incident Command System
- IS-700, NIMS: An Introduction
- RT-130, Annual Fireline Safety Refresher
- CPR and Standard First Aid

Although these are the minimum requirements to be involved with wildland fire on Fort A.P. Hill, individual effort is encouraged to continue training efforts as required per NWCG position standards. This may include additional classroom and field training requirements and tracking experience within position task books, approved by an appropriate agency representative (i.e., Director of Public Works for ENRD personnel).

The Virginia Prescribed Burn Manager Certification is required for Forestry personnel involved in the prescribed fire program at Fort A.P. Hill. It is the responsibility of the Installation Forester to track the successful completion of this certification for personnel. Personnel participating in prescribed burning, who do not have this training, will work directly with a Certified Prescribed Burn Manager until they have received certification. Prescribed burn manager training is offered annually by VDOF. The following tables identify firefighter qualifications per position and expected level of involvement on the fireline.

*Based on current operations, the FAPH Fire Department is implementing NWCG Standards with the goal of implementing the

Army WF Guidance once approved. Prior to guidance approval, FAPH FD will operate based on departmental SOPs, specifically SOP 219.16.

Table 4.8.1.6-A: Firefighter Qualifications per Installation Position

Installation Position	RXB2	ICT4	SRB	FFT1	FFT2	WCT
Installation Forester	X	X				M
Foresters	X	X	X			A
Forestry Technicians			X	X	X	A
Wildlife Biologists					X	A
Wildlife Technicians					X	A
Natural Resource Specialist					X	A
Supervisor, Roads & Grounds					X	M
Equipment Operators, Roads & Grounds					X	M
Range Inspectors					X	M
Assistant Fire Chief		X				N/A
Captain			X			N/A
Driver/Operator				X		N/A
Firefighter					X	N/A

RXB2 = Prescribed Burn Boss Type 2
ICT4 = Incident Commander Type 4
SRB = Single Resource Boss (to include Firing Boss, Heavy Equip. Boss, Engine Boss, Felling Boss)
FFT1 = Firefighter Type 1
FFT2 = Firefighter Type 2
WCT = Work Capacity Test
A = Arduous
M = Moderate

Refer to the National Incident Management System: Wildland Fire Qualification System Guide (PMS 310-1) for more information related to training requirements and recommendations for wildland fire positions.

4.8.1.7. Contingencies for Escape

In order to be prepared for the possibility of the prescribed fire escaping established control lines, a contingency plan will be determined prior to prescribed fire execution and communicated to on-site personnel. In the event of an escape that cannot be quickly (15-20 minutes) extinguished by one brush truck crew, the Prescribed Burn Boss will cease prescribed firing operations and all available on-site personnel will perform initial attack. The Prescribed Burn Boss or highest qualified individual will serve as

the IC until relieved. If on-site resources are not adequate, contingency resources will be ordered from the Fire Department and/or Roads and Grounds as needed through the Fort A.P. Hill dispatch.

Range Control will be notified immediately of any escape that occurs in a training area not scheduled for prescribed burning. Prescribed fire personnel will communicate the anticipated control difficulty or timeline. Range Control will be updated upon successful containment of the fire in the adjoining training area. The Garrison Commander will be notified of the implementation of the contingency plan if a fireplow or other heavy equipment is being deployed for containment.

The Prescribed Burn Boss may decide to allow the escaped fire to burn in the adjoining area if the area is on Fort A.P. Hill property, has already been included on the approved annual prescribed burn plan, Range Control has confirmed that no one is occupying the area, and existing roads and trails are sufficient for containing the expanded area.

If a contingency plan has been implemented and available resources prove inadequate to contain the escape, the time since escape has surpassed a four hour period with minimal containment, or there is immediate threat to human life or real property then the prescribed fire will be officially declared a wildfire and the Fire Department will be officially dispatched, Range Control notified, Garrison Commander notified and the EOC will be established in accordance with the IEMP. The Prescribed Burn Boss will serve as Incident Commander until Fire Department arrives on-scene, at which point, a unified command will be implemented for containment and suppression.

4.8.2. Prescribed Fire Monitoring

Several types of evaluations will be performed following the implementation of a prescribed fire. An immediate post-burn evaluation will document the overall success of the fire in relation to the stated objectives. This includes fuel and vegetation consumption and acres burned. Additionally, any significant events that occurred such as escapes, spotting, smoke issues, injuries, or equipment damage are to be documented. The results from these monitoring efforts will then be incorporated in future planning iterations and applied as an adaptive management process.

Though there are many benefits to performing an AAR at the conclusion of each prescribed fire, this is not currently a requirement. The AAR provides the Prescribed Burn Boss and crew members an opportunity to reflect on the completed prescribed fire and provide feedback on communication and implementation for the purpose of documenting what went well and what could be improved on future prescribed fires. An AAR will be required in the event that a major escape occurred, a wildfire was declared, an injury occurred, major equipment or property loss occurred, or major smoke impacts occurred.

At the completion of the prescribed fire season, the Forestry Branch implements an AAR to identify accomplishments, equipment needs, and areas for improvement.

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5. MONITORING AND EVALUATION

5.1. TREATMENT EFFECTIVENESS, VEGETATIVE RESPONSE

Multiple surveys have been implemented over the years to track prescribed fire effectiveness and vegetation response:

Photo point monitoring and temperature sensitive paint application was applied to selected photo point trees before fire implementation. The combination of these two efforts provided a snapshot of prescribed fire effects before and after fire implementation. This survey method is implemented infrequently in specific areas across the installation, providing data on fire effects in relation to completed timber stand improvement actions.

A composite burn index survey has been implemented for the past five years. This survey collects photo points and measures the vegetative impacts within five different strata of the forest canopy. Each year at least 3 different prescribed fire burn blocks or burn objectives (oak management, vegetation control, fuel reduction, etc.) have been surveyed looking at the fire effects and vegetation response.

Every 10 years we complete survey requirements on Continuous Forest Monitoring plots. These plots were initially developed to quantify in-growth for merchantable and sub-merchantable stems across the installation. During the last iteration of data collection (2017) fire metrics were collected on a select sample of the plots. Results from this data collection will be analyzed in 2027 after re-survey.

Our most intensive and productive prescribed fire survey is the oak survey. Oaks are a significant component of the forest resource on Fort A.P. Hill. Their mast (acorns) is a significant forage component for various species of wildlife. Oaks have also adapted to fire on the landscape therefore oak regeneration and recruitment is a major priority of the Forestry Branch and plays a major role in landscape management decision making. This survey was developed to test the actual objective of the fire to see if the established goals were met. These plots are placed within the desired survey area (hardwood stands) within particular burn blocks. Sampling frequency depends on survey area size, but the preference is to establish at least 40 plots across the survey area. Multiple fire and vegetative effects data are collected. This data looks at seedling and forest canopy structure in relation to oak species vs. oak competition, which allows us to determine the intensity of subsequent fire applications or if we need to consider mechanical assistance to meet the objectives.

There are currently multiple surveys being conducted across the installation but we will continue to look at ways to improve our data collection efforts and deploy new ideas and technologies as time and budgets allow.

5.2. IWFMP REVIEW AND UPDATE

The IWFMP will be updated and approved every five years. The next update is scheduled for FY 2025. An annual review will be completed after each FY prescribed fire season to capture any changes to the current plan, which will then be reflected in the five-year update.

All stakeholders will be asked to provide comments during the FY prescribed fire season AAR and notified of any possible changes to the IWFMP. Documentation of the annual review will be provided for concurrence. Final update and approval will occur every five years and all stakeholders will be required to review and update the plan as necessary.

5.3. REPORTING REQUIREMENTS

5.3.1. Annual Environmental Quality Reporting (EQR)

Annual reporting requirement sourced from HQDA that includes wildland fire metrics and will be answered by the Wildland Fire Program Manager (WFPM). All directorates involved with wildland fire management will be responsible for providing data requested by the WFPM.

5.3.2. Wildland Fire Mapping Application (WFMAP)

WFMAP is a tool utilized by the installation to report all wildland fire activities to CEMML. This includes both prescribed fire metrics and wildfire response metrics. Typical metrics upload into WFMAP are:

- Fire Boundary
- Fire Size
- Fire Type (Prescribed or Wildfire)
- Cause/Method (Ground or Aerial)
- Fire Date and Time
- Personnel
- Equipment
- Burn Objective (CRFCP, VENQ, TATM, QMUN)

Coordination between the Forestry Branch and DES-Fire Department is necessary to capture all metrics related to wildfire response activities.

5.3.3. Command (AMC/IMCOM) Wildland Data Calls

Any additional data calls from commands may occur and, as received, will be answered by the Wildland Fire Program Manager. All directorates involved with wildland fire management will be responsible for providing data requested by the WFPM.

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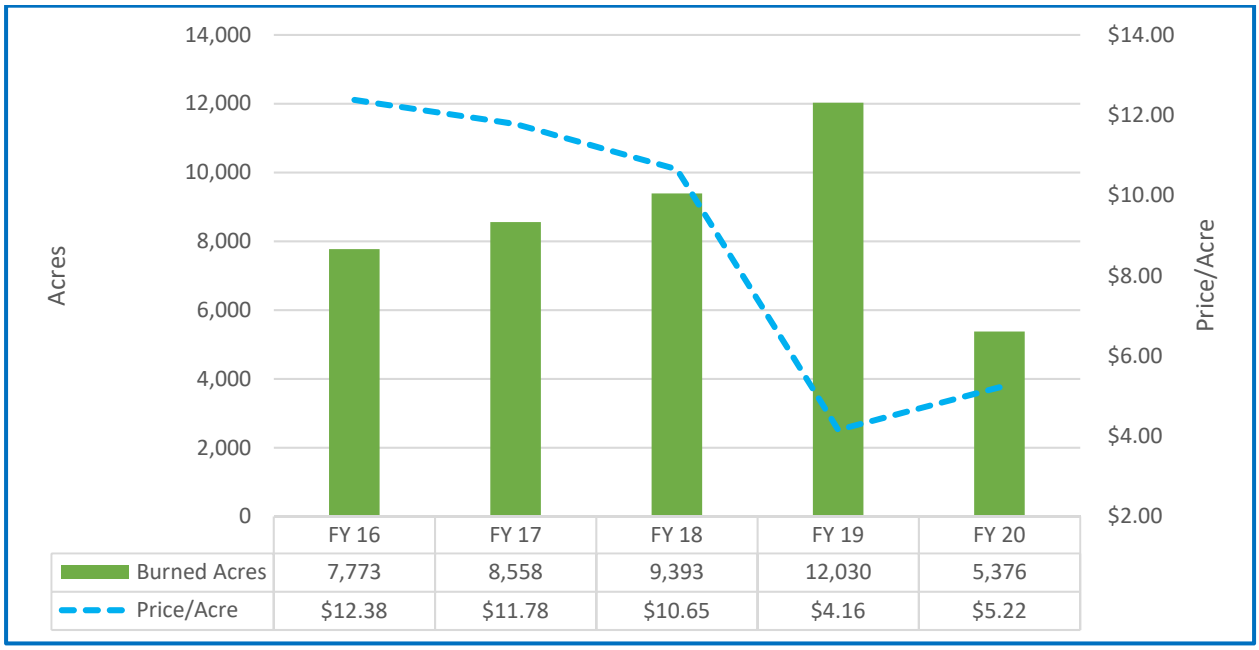
6. WILDLAND FIRE PROGRAM IMPLEMENTATION AND RESOURCING

6.1. FUNDING REQUIREMENTS

Wildland fire program implementation costs are highly variable and can be difficult to quantify across multiple directorates with multiple funding sources. The ENRD Forestry Branch has been tracking prescribed fire implementation costs for the past several years. The following charts and tables reflect labor, equipment operation, and fuel costs directly related to the ENRD Forestry Program:

*Figure 6.1-A: Annual Price/Acre for Prescribed Fire Implementation**



	FY 16	FY 17	FY 18	FY 19	FY 20
Burned Acres	7,773	8,558	9,393	12,030	5,376
Price/Acre	$12.38	$11.78	$10.65	$4.16	$5.22

*Figure 6.1-B: Annual Prescribed Fire Program Cost Estimate**

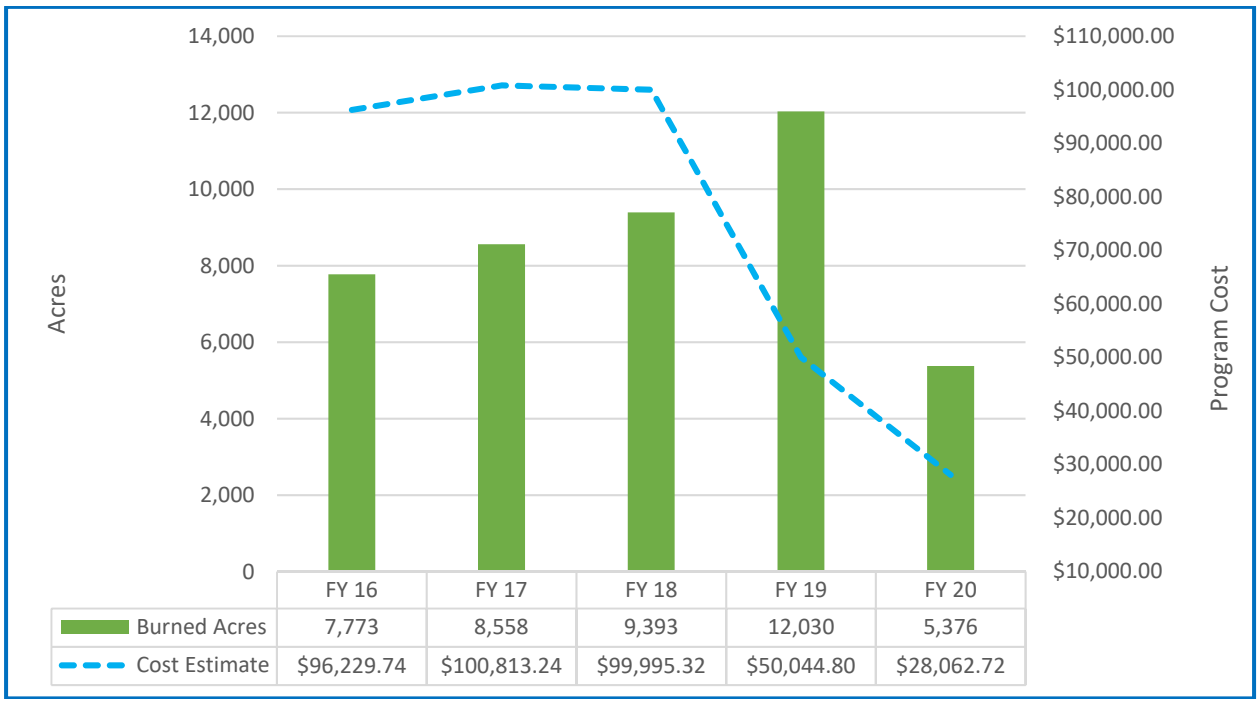


*Table 6.1-A: Equipment Operation Costs***

Equipment Type	Price/Hour	Price/Mile ($)
Dozer	$65.00	-----
Tractor	$65.00	-----
Brush Truck	$65.00	$0.54
Terra Torch	$65.00	$0.54
ATV	$10.00	-----
UTV	$10.00	-----
Transport Truck	-----	$1.50
Truck(s)	-----	$0.54
Fuel Truck	-----	$0.54

Table 6.1-B: Equipment Replacement Costs and Timeframe

Equipment Type	Replacement Cost	Replacement Timeframe
Dozer	$200,000	25 Years
Tractor	$65,000	25 Years
Brush Truck	$150,000	10 Years
ATV	$10,000	3 Years
UTV	$15,000	3 Years
Transport Truck	$200,000	10 Years
Truck(s)	$20,000 - $50,000	10 Years
Trailers	$1,000 - $20,000	10-15 Years
Skid Unit	$6,500 - $10,000	5-10 Years
Portable Water Tank	$7,000 - $9,000	10-15 Years

Table 6.1-C: Supply Costs and Timeframe

Supply Type	Cost	Replacement Timeframe
PPE	$17,000	1-5 Years
Portable Pumps	$6,000	5-10 Years
ATV Torches	$8,500	3-5 Years
Terra Torch Gel Fuel	$2,000	Annually
ATV Helmets	$1,500	5 Years
Radios	$60,000	5 Years
Miscellaneous Tools	$7,500	1-3 Years
Chainsaws	$6,000	1-5 Years

**Fuel costs are included in Figure 6.1-A and 6.1-B. and are estimates of current gas and diesel prices for the Mid-Atlantic region. Labor costs are also included in the figures at $35.00/hour. Costs associated with DES-Fire Department, DPW-Roads & Grounds, and DPTMS have not been tracked and are not represented.*

***Equipment operation costs are estimates based on the Virginia Department of Forestry costs associated with prescribed fire implementation and wildfire response. Mileage costs are based on GSA mileage rates.*

6.2. FUNDING SOURCES

Funding for wildland fire management activities comes from multiple sources based on the directorate's allocation for such activities. Multiple MDEPs have been established for wildland fire management activities but funding has not been allocated towards those MDEPs. There are five different MDEPS related to wildland fire management:

- QMUN – Reduce fuels for the purpose of fire mitigation.
- CRFCP – Managing timber, agricultural or grazing lands, or game species.
- VENQ – Ecosystem management or environmental regulatory requirements for listed species.
- QEMS – Wildfire Response
- TATM – Directly related to the mission need – maintaining training landscapes, clearing maneuver lanes, preserving line of sight, etc.

The Forestry Branch and DPW Roads & Grounds Branch have charged time to these MDEPS for future budget planning but this exercise has not been implemented for a couple of years and no funding was ever provided in these MDEPs.

Currently, all wildland fire management activities are funded through the directorate's operating budgets with no funds allocated for wildland fire management.

6.3. PROGRAM CHALLENGES AND PROPOSED MITIGATIONS

Table 6.3-A: Program Challenges and Proposed Mitigations

Challenge	Summary	Mitigation
Equipment Replacement	Wildland fire equipment needs to be replaced based upon life-cycle standards. However, the process for replacing equipment is convoluted and limited.	Request equipment be added to the TDA and ask for funds through the POM and VAM/VURB process.
Range Accessibility	Training on the installation is very active and limits prescribed fire opportunities.	Forestry is allowed to schedule up to three days prior to prescribed fire operations and can request day-of access on a limited basis through coordination with Range Operations.
Term/Temp Positions	Personnel that hold these positions are only guaranteed a certain amount of time in that position. They	Work with CPAC to add additional time to these positions – up to eight years. Communicate this

	are trained and qualified to different wildland fire positions and then move on when the position timeframe has expired.	issue through AEC up to IMCOM.
Training/Qualifications	There are different requirements throughout the Army for wildland fire training and qualification. This causes issues when determining who is properly trained and qualified to act in certain roles on a wildland fire event.	Start to transition all personnel that participate in wildland fire management to adopt NWCG training and qualification standards. Update PDs to reflect these training and qualification standards. Utilize IQCS/IQS for training and qualification tracking.
Weather Constraints	Weather in the Mid-Atlantic region is highly variable. This limits burn opportunities and can result in burning in unfavorable conditions.	Leverage accessibility and crew availability to complete prescribed fire activities. Re-evaluate prescribed fire parameters and adjust to meet goals and objectives.
Training Opportunities – ICT4	In order to be qualified as a RXB2, individuals need to have experience as an ICT4 on wildfire events.	Update the IWFMP to show this requirement and work with DES Fire Department to implement a Unified Command on all wildfire events.
Funding	Overall funding mechanisms are lacking and inefficient to meet the needs of the Wildland Fire Program.	Work with AEC, IMCOM, and other higher headquarters to determine proper funding levels for wildland fire management.

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FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

LIST OF FIGURES

LIST OF FIGURES

FORT A.P. HILL
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FIGURE 3.5-A: FORT A.P. HILL WILDFIRE OCCURRENCE FY11-20

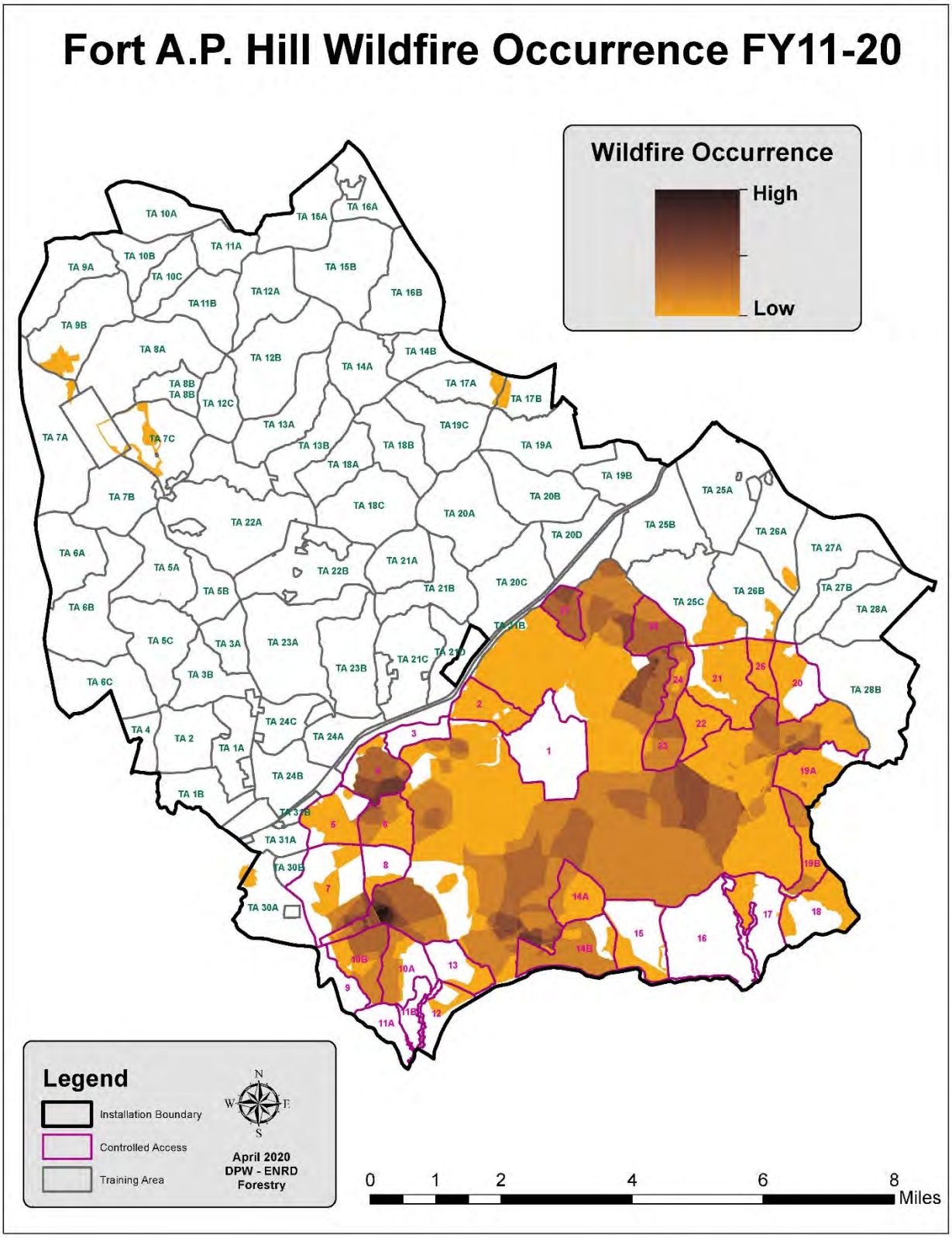
Fort A.P. Hill Wildfire Occurrence FY11-20
Wildfire Occurrence
High
Low
Legend
Installation Boundary
Controlled Access
Training Area
N
W
E
S
April 2020
DPW - ENRD
Forestry
0 1 2 4 6 8
Miles

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FIGURE 3.5-A: FORT A.P. HILL PRESCRIBED FIRE OCCURRENCE FY14-20

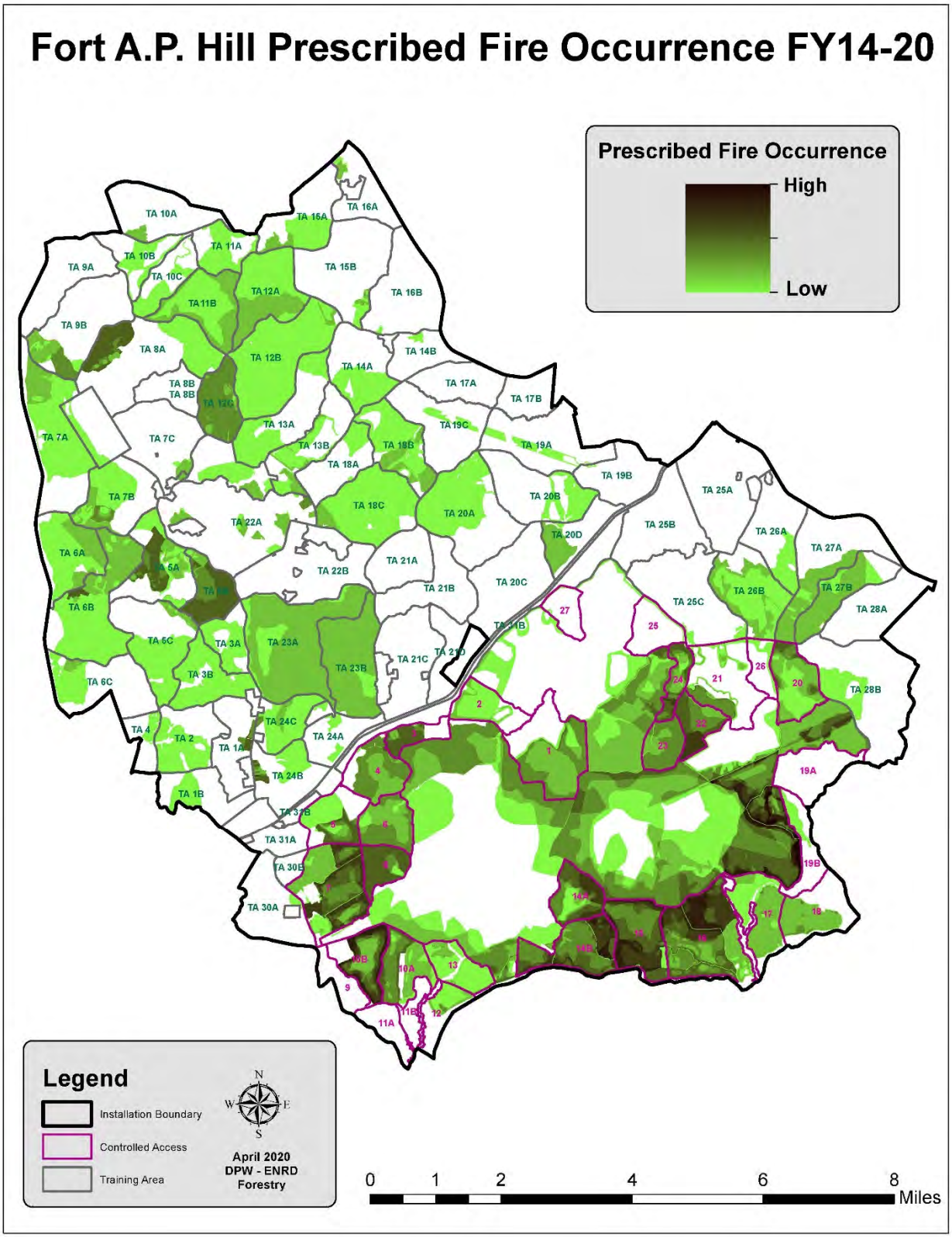
Fort A.P. Hill Prescribed Fire Occurrence FY14-20
Prescribed Fire Occurrence
High
Low
TA 10A
TA 16A
TA 15A
TA 11A
TA 10B
TA 9A
TA 10C
TA 15B
TA 12A
TA 16B
TA 11B
TA 9B
TA 8A
TA 12B
TA 14B
TA 14A
TA 17A
TA 8B
TA 8B
TA 12C
TA 17B
TA 13A
TA 19C
TA 7A
TA 7C
TA 13B
TA 19B
TA 19A
TA 18A
TA 19B
TA 25A
TA 7B
TA 18C
TA 20B
TA 20A
TA 25B
TA 22A
TA 20D
TA 26A
TA 27A
TA 6A
TA 5A
TA 22B
TA 21A
TA 21B
TA 20C
TA 26B
TA 27B
TA 6B
TA 25C
TA 28A
TA 6C
TA 3A
TA 23A
TA 21C
TA 21D
TA 3B
TA 23B
TA 28B
TA 6C
TA 4
TA 24C
TA 2
TA 24A
TA 1A
TA 24B
TA 1B
TA 31A
TA 30B
TA 30A
Legend
Installation Boundary
Controlled Access
Training Area
N
W
E
S
April 2020
DPW - ENRD
Forestry
0
1
2
4
6
8
Miles

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FIGURE 3.8-A: FORT A.P. HILL WILDFIRE RISK ASSESSMENT

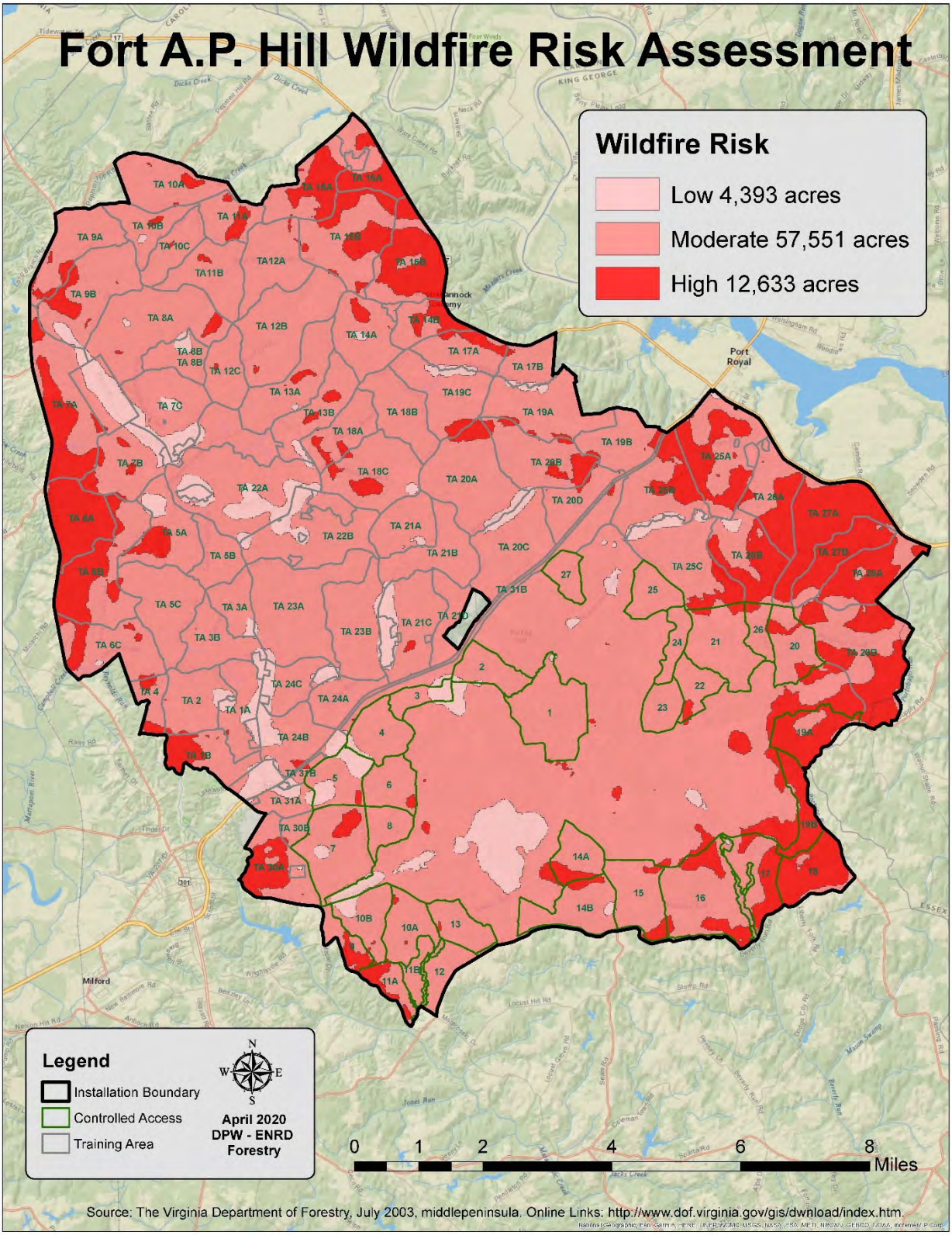
Fort A.P. Hill Wildfire Risk Assessment
Wildfire Risk
Low 4,393 acres
Moderate 57,551 acres
High 12,633 acres
Legend
Installation Boundary
Controlled Access
Training Area
April 2020
DPW - ENRD
Forestry
0 1 2 4 6 8
Miles
Source: The Virginia Department of Forestry, July 2003, middlepeninsula. Online Links: http://www.dof.virginia.gov/gis/dwnload/index.htm.

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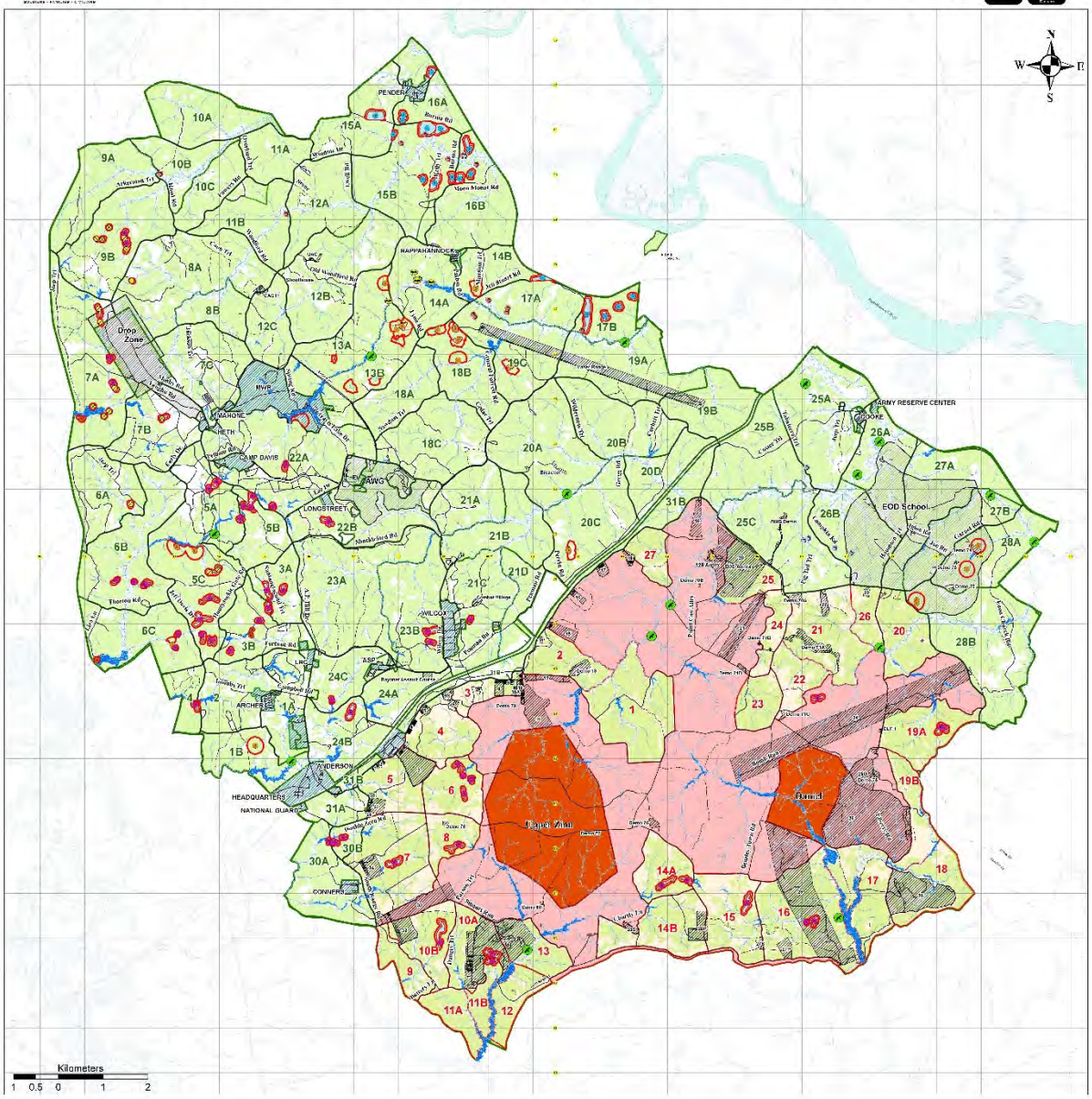
FIGURE 3.14.2-A: SENSITIVE ENVIRONMENTAL RESOURCES

Threatened & Endangered Species Installation Map



Legend

Plants
- Small Whorled Pogonia
- Swamp Pink
- Endangered Pitcher Plants
- New Jersey Rush
- American Ginseng

Atlantic Sturgeon Critical Habitat
- Rappahannock River

Amphipods
- Kenk's Amphipod
- Rappahannock Amphipod

Bats
- Indiana Bat Roost Trees
- 0.4 km (0.25 miles) = Forest Mngt Restrictions
- 1.2 km (0.75 miles) = Construction Restrictions

Bald Eagle
- Bald Eagle Nest Locations

- Not for General Distribution -

Fort A.P. Hill DPW-ENRD: 17-Dec-2018

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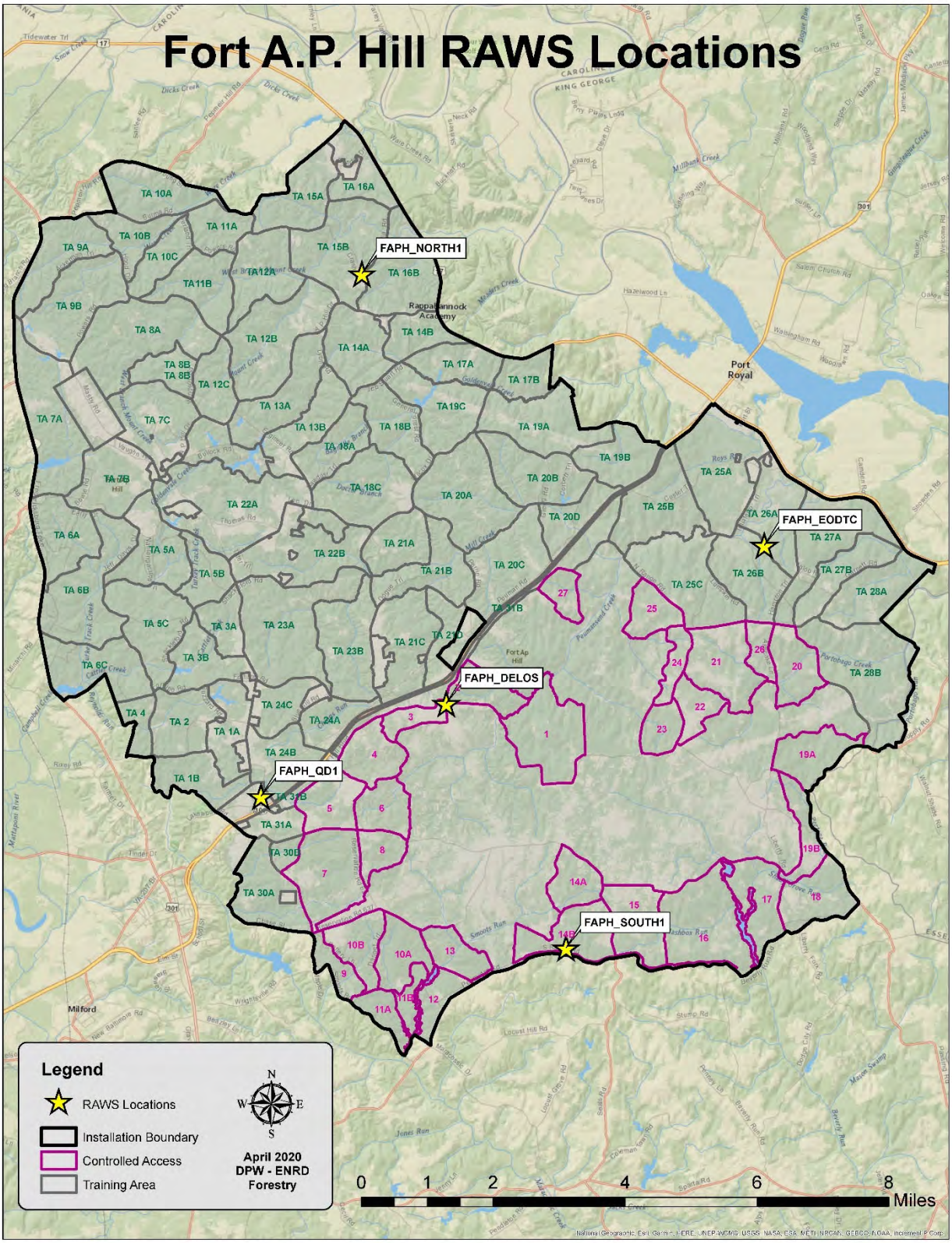
FIGURE 4.3.1-A: FORT A.P. HILL RAWS LOCATIONS


Fort A.P. Hill RAWS Locations
FAPH_NORTH1
FAPH_EODTC
FAPH_DELOS
FAPH_QD1
FAPH_SOUTH1
Legend
RAWS Locations
Installation Boundary
Controlled Access
Training Area
N
W
E
S
April 2020
DPW - ENRD
Forestry
0 1 2 4 6 8
Miles

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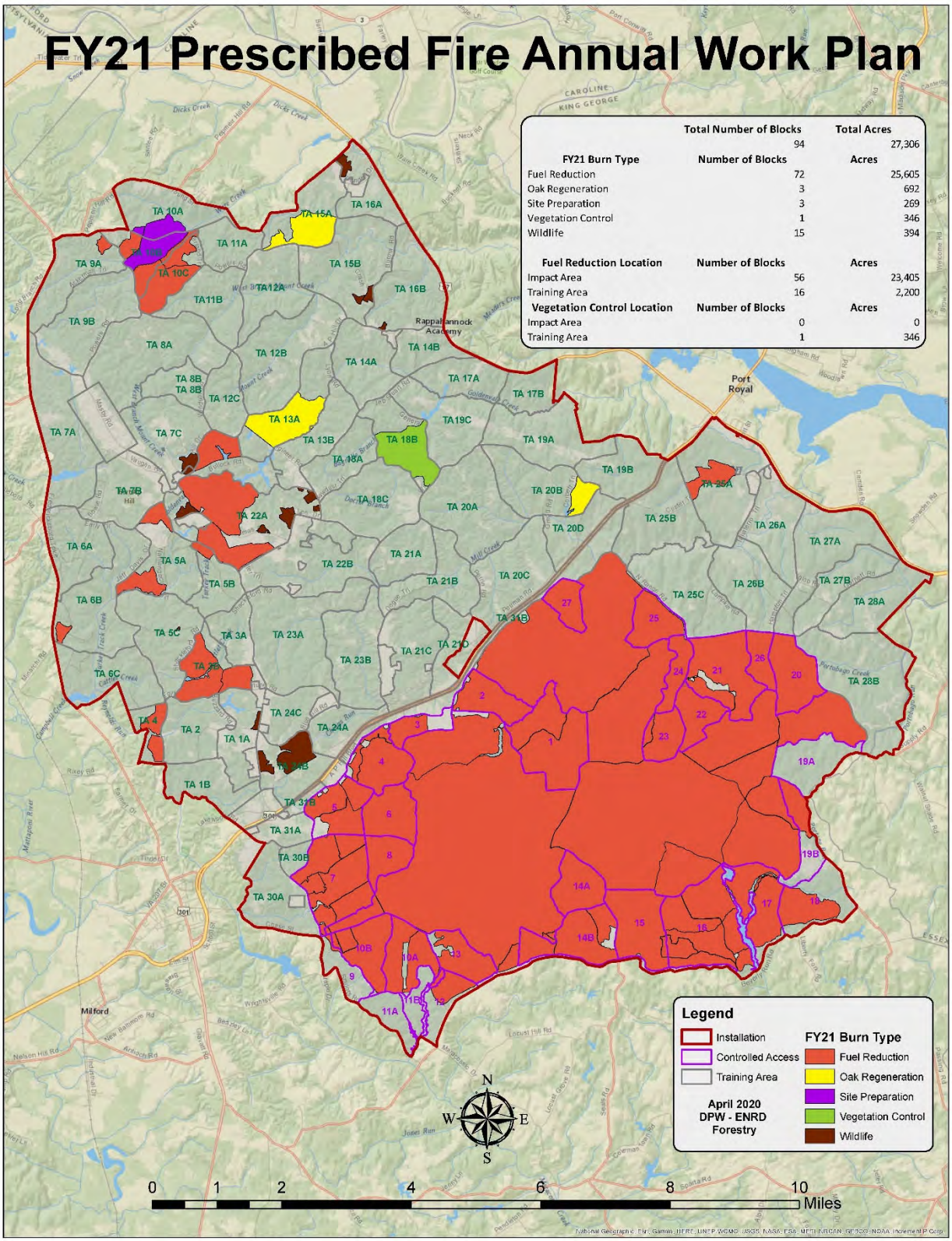
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

FIGURE 4.8.1.5.2-A: FY 21 PRESCRIBED FIRE ANNUAL WORK PLAN


FY21 Prescribed Fire Annual Work Plan
Total Number of Blocks
94
Total Acres
27,306
FY21 Burn Type
Number of Blocks
Acres
Fuel Reduction
72
25,605
Oak Regeneration
3
692
Site Preparation
3
269
Vegetation Control
1
346
Wildlife
15
394
Fuel Reduction Location
Number of Blocks
Acres
Impact Area
56
23,405
Training Area
16
2,200
Vegetation Control Location
Number of Blocks
Acres
Impact Area
0
0
Training Area
1
346
Legend
Installation
Controlled Access
Training Area
FY21 Burn Type
Fuel Reduction
Oak Regeneration
Site Preparation
Vegetation Control
Wildlife
April 2020
DPW - ENRD
Forestry
N
W
E
S
0
1
2
4
6
8
10
Miles
Milford
Port Royal
Rappahannock Academy

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INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

FIGURE 4.8.1.5.2-B: FY 22 PRESCRIBED FIRE ANNUAL WORK PLAN

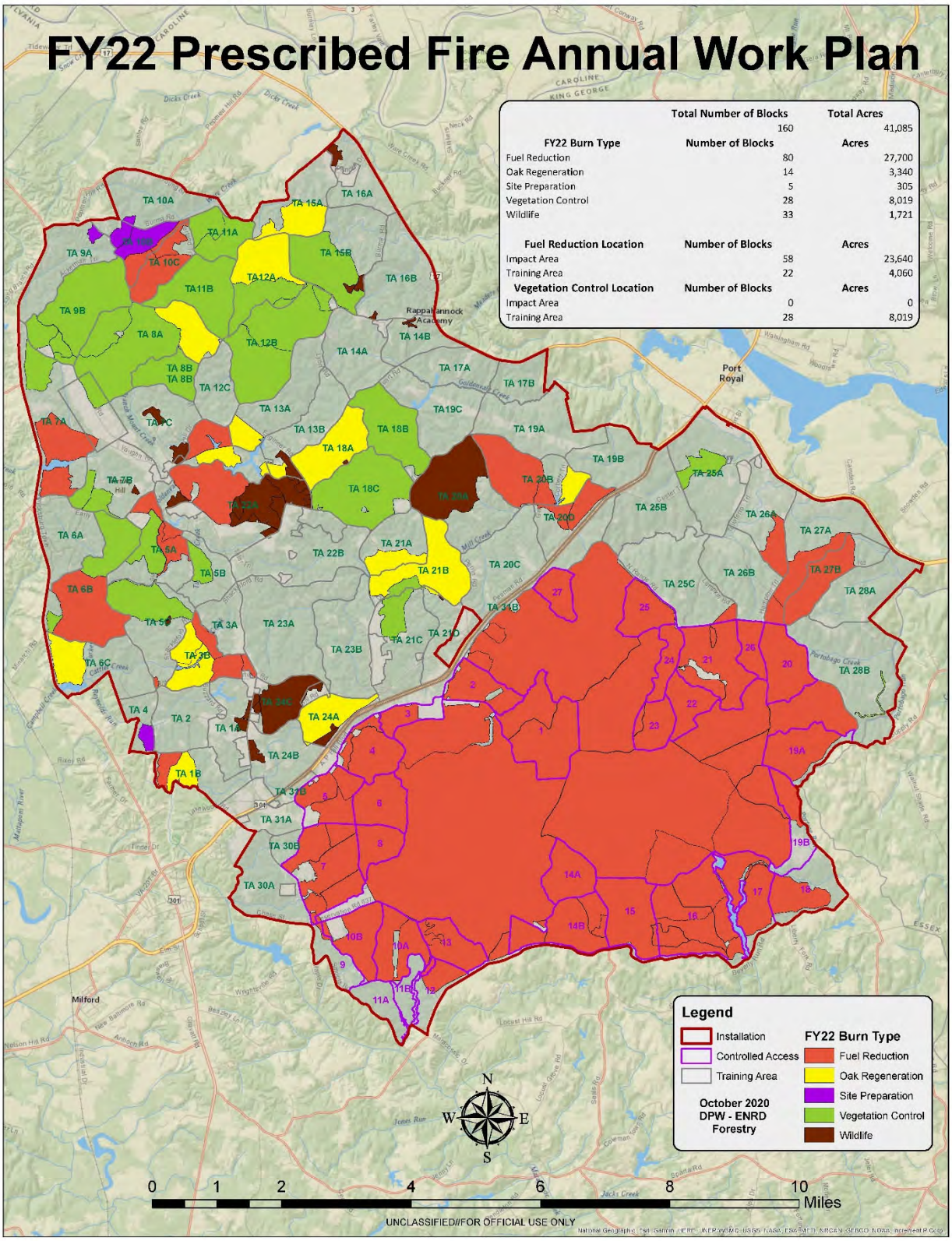
FY22 Prescribed Fire Annual Work Plan
Total Number of Blocks 160
Total Acres 41,085
FY22 Burn Type | Number of Blocks | Acres
Fuel Reduction | 80 | 27,700
Oak Regeneration | 14 | 3,340
Site Preparation | 5 | 305
Vegetation Control | 28 | 8,019
Wildlife | 33 | 1,721
Fuel Reduction Location | Number of Blocks | Acres
Impact Area | 58 | 23,640
Training Area | 22 | 4,060
Vegetation Control Location | Number of Blocks | Acres
Impact Area | 0 | 0
Training Area | 28 | 8,019
Legend
Installation
Controlled Access
Training Area
FY22 Burn Type
Fuel Reduction
Oak Regeneration
Site Preparation
Vegetation Control
Wildlife
October 2020
DPW - ENRD
Forestry
N
W
E
S
0 1 2 4 6 8 10 Miles
UNCLASSIFIED//FOR OFFICIAL USE ONLY
Port Royal
Milford
Rappahannock Academy

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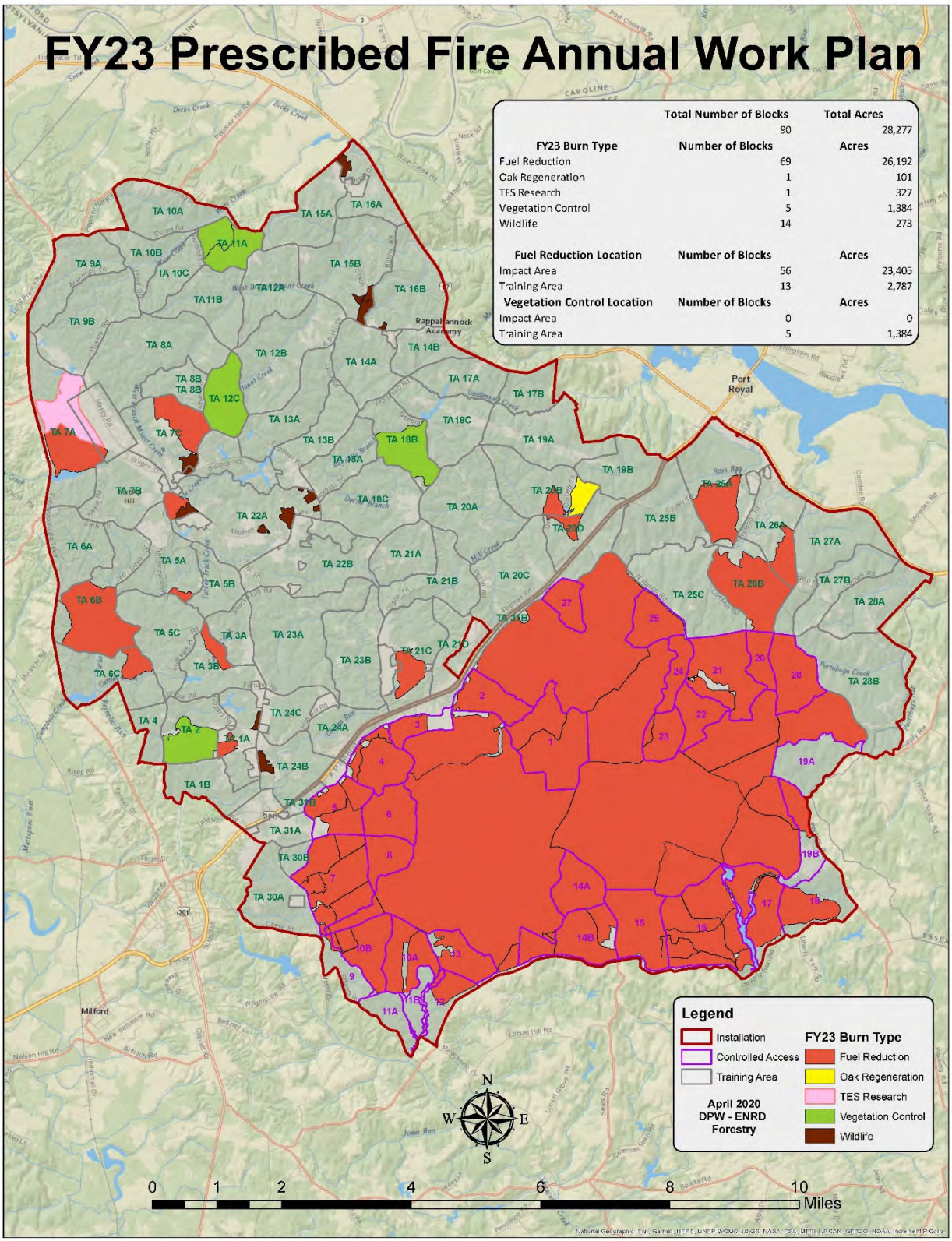
FIGURE 4.8.1.5.2-C: FY 23 PRESCRIBED FIRE ANNUAL WORK PLAN


FY23 Prescribed Fire Annual Work Plan
Total Number of Blocks
Total Acres
90
28,277
FY23 Burn Type
Number of Blocks
Acres
Fuel Reduction 69 26,192
Oak Regeneration 1 101
TES Research 1 327
Vegetation Control 5 1,384
Wildlife 14 273
Fuel Reduction Location
Number of Blocks
Acres
Impact Area 56 23,405
Training Area 13 2,787
Vegetation Control Location
Number of Blocks
Acres
Impact Area 0 0
Training Area 5 1,384
Legend
Installation
Controlled Access
Training Area
FY23 Burn Type
Fuel Reduction
Oak Regeneration
TES Research
Vegetation Control
Wildlife
April 2020
DPW - ENRD
Forestry
N
W
E
S
0 1 2 4 6 8 10 Miles
Milford
Port Royal
Rappahannock Academy

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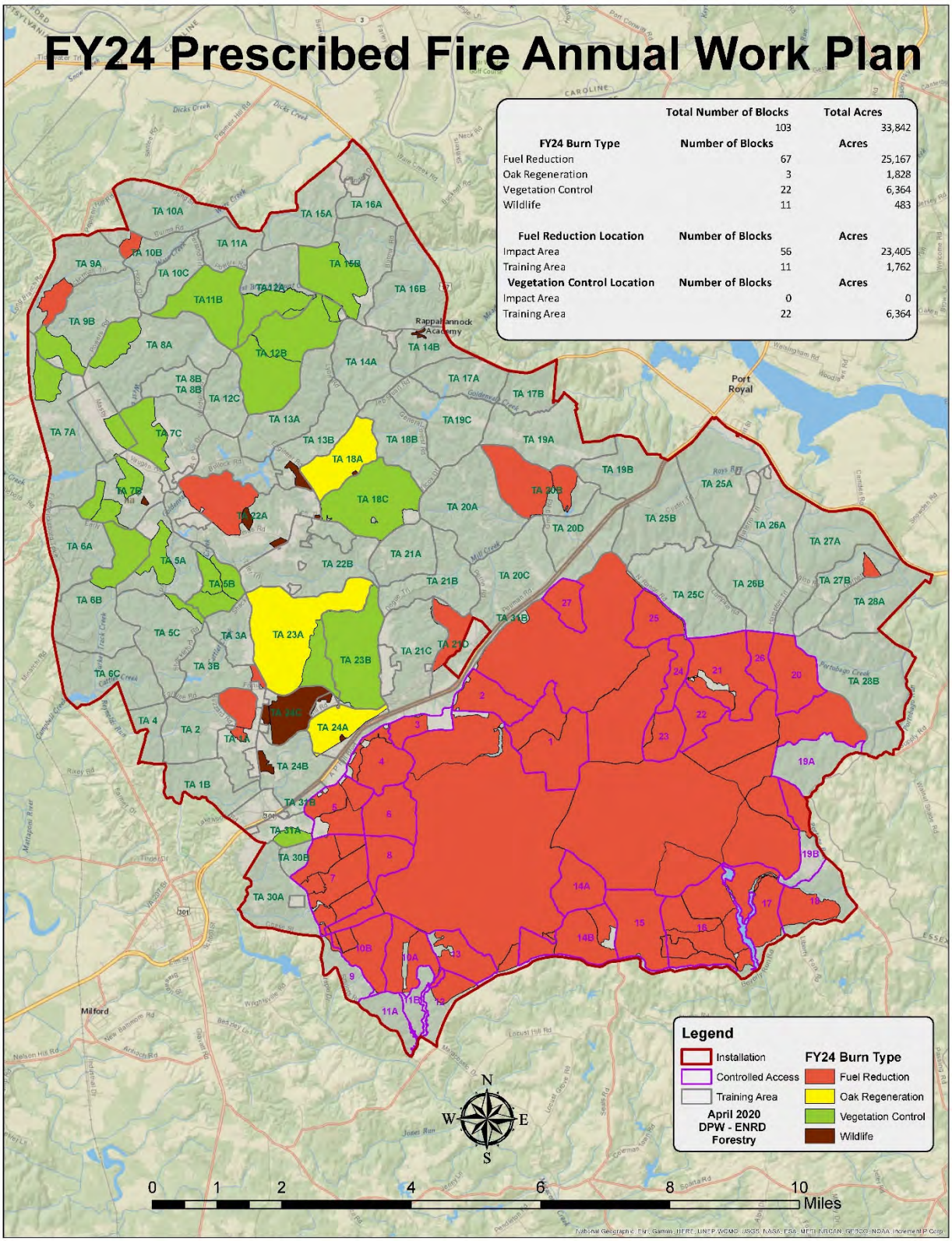
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

FIGURE 4.8.1.5.2-D: FY 24 PRESCRIBED FIRE ANNUAL WORK PLAN


FY24 Prescribed Fire Annual Work Plan
Total Number of Blocks 103
Total Acres 33,842
FY24 Burn Type | Number of Blocks | Acres
Fuel Reduction | 67 | 25,167
Oak Regeneration | 3 | 1,828
Vegetation Control | 22 | 6,364
Wildlife | 11 | 483
Fuel Reduction Location | Number of Blocks | Acres
Impact Area | 56 | 23,405
Training Area | 11 | 1,762
Vegetation Control Location | Number of Blocks | Acres
Impact Area | 0 | 0
Training Area | 22 | 6,364
Legend
Installation
Controlled Access
Training Area
April 2020
DPW - ENRD
Forestry
FY24 Burn Type
Fuel Reduction
Oak Regeneration
Vegetation Control
Wildlife
N
W
E
S
0 1 2 4 6 8 10 Miles
Rappahannock Academy
Port Royal
Milford

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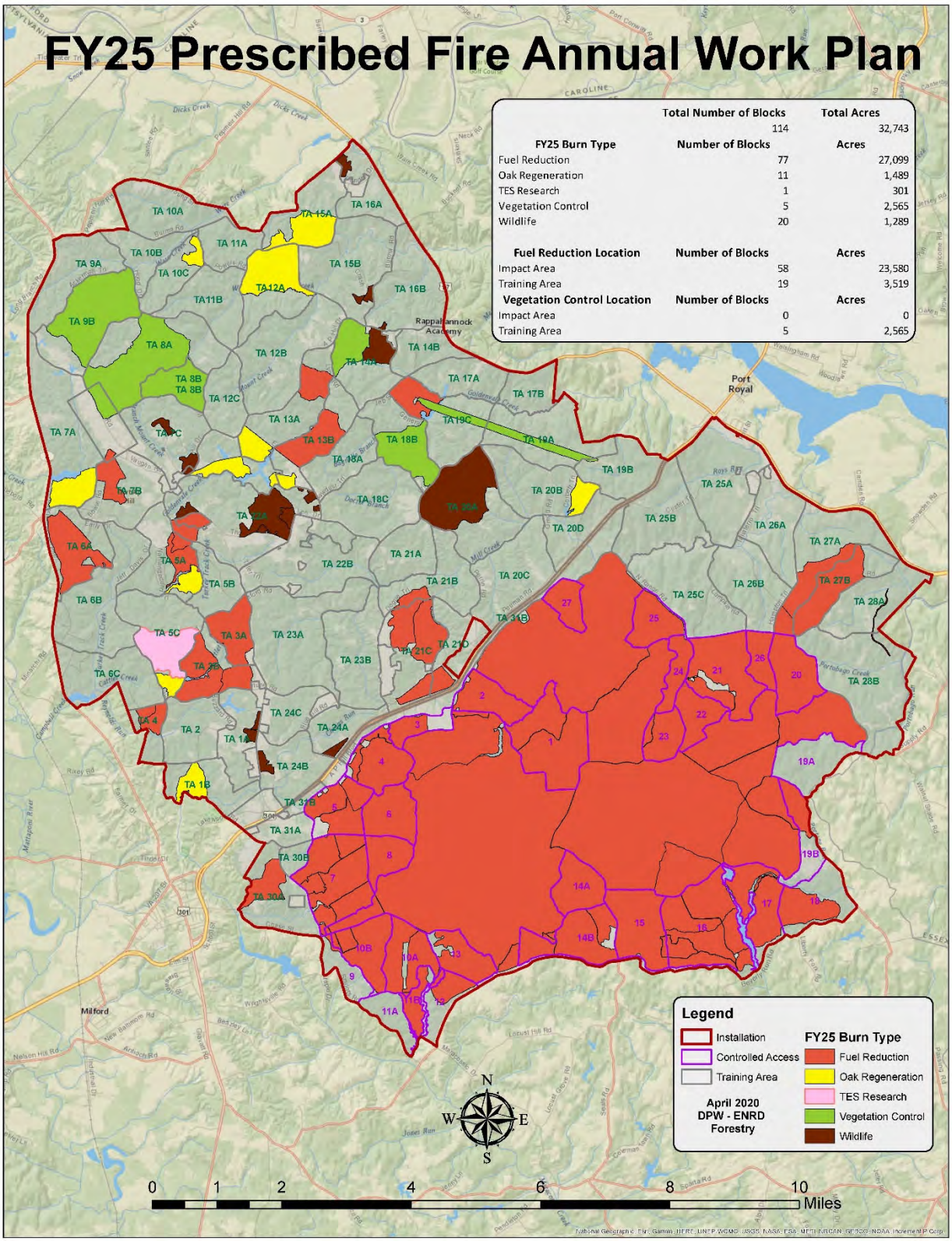
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

FIGURE 4.8.1.5.2-E: FY 25 PRESCRIBED FIRE ANNUAL WORK PLAN


FY25 Prescribed Fire Annual Work Plan
Total Number of Blocks 114
Total Acres 32,743
FY25 Burn Type | Number of Blocks | Acres
Fuel Reduction | 77 | 27,099
Oak Regeneration | 11 | 1,489
TES Research | 1 | 301
Vegetation Control | 5 | 2,565
Wildlife | 20 | 1,289
Fuel Reduction Location | Number of Blocks | Acres
Impact Area | 58 | 23,580
Training Area | 19 | 3,519
Vegetation Control Location | Number of Blocks | Acres
Impact Area | 0 | 0
Training Area | 5 | 2,565
Legend
Installation
Controlled Access
Training Area
April 2020
DPW - ENRD
Forestry
FY25 Burn Type
Fuel Reduction
Oak Regeneration
TES Research
Vegetation Control
Wildlife
N
W
E
S
0 1 2 4 6 8 10 Miles
Milford
Port Royal
Rappahannock Academy

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FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

LIST OF TABLES

LIST OF TABLES

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FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

LIST OF APPENDICES

LIST OF APPENDICES

FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

APPENDIX A: ACRONYM INDEX AND GLOSSARY OF TERMS

ACRONYM INDEX	
Acronym	**Reference**
AAR	**After Action Review**
AQCR	**Air Quality Control Region**
AR	**Army Regulation**
ARA	**Authorized Reimbursable Account**
ATV	**All-Terrain Vehicle**
CBI	**Composite Burn Index**
CPR	**Cardio-Pulmonary Resuscitation**
DES	**Directorate of Emergency Services**
DFC	**Desired Future Condition**
DoD	**Department of Defense**
DoDI	**Department of Defense Instruction**
DOIM	**Directorate of Information Management**
DOL	**Directorate of Logistics**
DPTMS	**Directorate of Plans, Training, Mobilization, and Security**
DPW	**Directorate of Public Works**
DRA	**Deliberate Risk Assessment**
EA	**Environmental Assessment**
eMs	**Environmental Management System**
ENRD	**Environmental and Natural Resources Division**
EOC	**Emergency Operations Center**
EOD	**Explosive Ordnance Disposal**
FAPH	**Fort A.P. Hill**
FBPS	**Fire Behavior Prediction System**
FDR	**Fire Danger Rating**
FRA	**Forestry Reserve Account**
GIS	**Geographic Information System**
GPS	**Global Positioning System**
HSQ	**Health Screening Questionnaire**
IAW	**In Accordance With**
IC	**Incident Commander**
ICRMP	**Integrated Cultural Resources Management Plan**
ICS	**Incident Command System**
IEMP	**Installation Emergency Management Plan**
IMCOM	**Installation Management Command**
INRMP	**Integrated Natural Resources Management Plan**
ITAM	**Integrated Training Area Management**
IWFMP	**Integrated Wildland Fire Management Plan**
JHA	**Job Hazard Analysis**
LMR	**Land Mobile Radio**
MAA	**Mutual Aid Agreement**
MIM	**Military Installation Map**
MOU	**Memorandum of Understanding**

MTA	**Maneuver Training Area**
NCR	**National Capital Region**
NEPA	**National Environmental Policy Act**
NFDRS	**National Fire Danger Rating System**
NFPA	**National Fire Protection Association**
NIMS	**National Incident Management System**
NOAA	**National Oceanic and Atmospheric Administration**
NRSA	**Natural Resource Site Assessment**
NWCG	**National Wildfire Coordinating Group**
NWS	**National Weather Service**
PAO	**Public Affairs Office**
PPE	**Personal Protective Equipment**
RFMSS	**Range Facility Management Support System**
SOI	**Signal Operating Instruction**
UHF	**Ultra-High Frequency**
USFS	**United States Forest Service**
UTV	**Utility Vehicle**
UXO	**Unexploded Ordnance**
VDEM	**Virginia Department of Emergency Management**
VDEQ	**Virginia Department of Environmental Quality**
VDOF	**Virginia Department of Forestry**
VDOT	**Virginia Department of Transportation**
VFD	**Volunteer Fire Department**

GLOSSARY OF TERMS

Term	Definition
Attainment Area	**A geographic area in which levels of a criteria air pollutant meet the health-based primary standard (national ambient air quality standard, or NAAQS) for the pollutant.**
Air Quality	**The relative concentration of airborne particles and gases that may affect the health and well-being of organisms or disrupt the functioning of the environment.**
Backfire	**A fire set along the inner edge of a fire control line to stop a spreading wildfire by reducing available fuel or a prescribed fire set to burn against the wind, resulting in a slow burn.**
Best Management Practices	**Environmental resource management practices that are designed to prevent or reduce undesirable side-effects of management actions.**
Blackline	**Preburning of fuels, either adjacent to a control line before igniting the main prescribed fire - blackline denotes a condition in which there is no unburned fine fuel.**
Buffer	**A vegetated zone or strip of land along the border of one area to protect another area. Buffer strips of standing trees may be used to shield an area from view or to filter sediment from surface water runoff before it enters a stream.**
Burn Boss	**Person responsible for managing a prescribed fire from ignition through mopup.**
Canopy	**The overhead branches and leaves in a forest stand consisting of one or several layers.**
Confinement (fire)	**To restrict a fire within determined boundaries.**
Conservation	**The protection, improvement, and wise use of natural resources to provide the greatest social and economic value for the present and future.**
Containment (fire)	**A fire management strategy used to keep a wildfire within a particular area.**
Control (a fire)	**Extinguish a fire by completing control lines, burning out unburned areas, and monitoring hotspots until fire threat under prevailing conditions has been eliminated.**

Control Line	**An inclusive term for all constructed or natural fire barriers; a treated (fire) edge used to control a prescribed fire or wildfire.**
Cultural Resources	**Historic properties as defined in the National Historic Preservation Act (NHPA); cultural items as defined in the Native American Graves Protection and Repatriation Act (NAGPRA); archeological resources as defined in the Archeological Resources Protection Act**
	(ARPA); and sacred sites as defined in Executive Order (EO) 13007 to which access is provided under the American Indian Religious Freedom Act (AIRFA).
Density	**The quantity of trees, basal area, volume, or some other measure, per unit of area. Some common measures are basal area per acre or stems per acre at a given age.**
Drip Torch	**A firing device consisting of a fuel tank and wick designed to allow flaming fuel droplets to ignite vegetative fuel for use in a prescribed fire or back-burn.**
Ecosystem	**A spatially explicit, relatively homogenous unit that includes all interacting organisms and components of the abiotic environment within its boundaries.**
Ecosystem Management	**An ecological approach to forest resource management; it attempts to maintain the complex processes, pathways, and interdependencies of forest ecosystems and keep them functioning in a sound state over long periods of time in order to provide resilience to short-term stress and adaptation to long-term change.**
Endangered Species	**Plant or animal species vulnerable to extinction throughout all or a significant portion of its range within the foreseeable future; identified in the federal register in accordance with the Endangered Species Act of 1976.**
Erosion	**The wearing away of land surface by rain, running water, wind, ice, gravity, or other natural or anthropogenic agents, e.g., road construction.**
Fire Behavior	**The manner in which a fire reacts to the variables of fuel, weather, and topography as in the shape, direction, and intensity of a fire.**

Fire Frequency	**The number of times that a fire occurs naturally within an ecosystem or the prescribed burning rotation applied to an area.**
Fire Hazard	**The ease of ignition and resistance to control of the fuel complex, determined by the volume, type, condition, arrangement, and location of fuels.**
Fire Plow	**Bulldozer designed and used for mechanized installation of control lines in wildfire suppression and/or prescribed burning.**
Fire Prevention	**Activities directed at reducing the number of fires that start, including public and military education and reduction in fuel hazards, i.e., prescribed burning.**
Fire Season	**The period(s) of the year during which fires are likely to occur, spread, and do sufficient damage to warrant organized fire control.**
Firebreaks	**Constructed roads designed to impede or stop forest fires by creating a discontinuity in potential fuels. Minimum firebreak width is 6 feet, the typical width of a dozer blade.**
Fireline	**The part of a wildfire control line that is scraped to mineral soil.**
Firing Technique	**Any of the multiple ignition patterns that may be used in a prescribed burn to attain desired fire characteristics to reach a specified resource management objective.**
Forest Cover	**A natural group or association of different species of trees, which commonly occur together over a large area (e.g., pine, hardwood, or mixed).**
Forest Management	**The practical application of biological, physical, quantitative, economic, social, and policy principles to the administration and working of a forest for specific objectives including maintaining forest health, vigor, production, and other values such as soil condition, water quality, wildlife preservation, and, specifically, to support the military training mission on Fort A.P. Hill.**
Fuel Loading	**The oven dry weight of fuels in a given area, usually expressed in tons per acre.**
Fuel Moisture	**The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212ºF.**

Fuel Type	**An identifiable association of fuel elements of distinctive species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.**
Fuels	**Plants and woody vegetation, both living and dead, that are capable of burning.**
Global Positioning System (GPS)	**A satellite-based navigational device that records X, Y, Z coordinates and other data allowing users to determine their location on the surface of the earth.**
Habitat	**The place or natural environment of a specific plant, animal, or fungus. An area containing all the necessary resources for the plant, animal, or fungus to live, grow, and reproduce. For wildlife, habitat is the combination of food, water, cover, and space.**
Handline	**Firebreak constructed by fireline personnel using fire rakes and other tools to expose bare mineral soil.**
Herbaceous Forage	**Vegetation dominated by non-woody plants that provide food to grazing animals.**
Impact Area	**Areas designated for military training involving live ordnance; the boundaries of these areas are designated with frequent signs and no forest management activities occur within the boundaries.**
Live-Fire Exercise	**Military training involving live ammunition and occurring on ranges and around impact areas.**
Mop-up	**Extinguishing or removing burning material, especially near control lines after an area has burned to reduce fire escape risks or to reduce residual smoke.**
NEPA (National Environmental Policy Act)	**A federal policy enacted in 1969 that established a national Council on Environmental Quality to oversee government activities that could affect the environment, and also required federal agencies to file environmental impact statements before taking any major action.**
Nomex Clothing	**Fire-protective garments made of synthetic, fire-resistant material to be worn during prescribed burning or wildfire suppression activities.**
Physiographic Class	**A classification describing the terrain or landform of a management unit as it relates to soil texture, soil structure, and water infiltration.**

Plow Line	**A control line that is mechanically cleared to mineral soil and used to contain wildfires or prescribed burns.**
Prescribed Burn	**The application of fire in a predetermined field, forest, or other area, usually under specific conditions of weather and fuel moisture, to control vegetation for military training, silvicultural purposes, or to reduce wildfire potential.**
Pyrotechnics	**Devices involved with igniting a rocket or producing an explosion and used in military training simulations.**
Relative Humidity	**The ratio of the amount of moisture in a given volume of space to the amount that volume would contain if it were saturated.**
Sensitive Species	**Plant or animal species which are susceptible to habitat changes or impacts from various kinds of disturbance.**
Silviculture	**The art of producing and tending forest stands by applying scientifically acquired knowledge to control or influence stand establishment, composition, and growth by applying different treatments to make forests more productive and useful, and integrating biologic and economic concepts to devise and carry out treatments to meet set objectives.**
Site Preparation	**An activity intended to make conditions favorable for planting, direct seeding, or for the establishment of natural regeneration by clearing, chemical vegetation control, burning, disking, chopping, bedding, windrowing, raking, or some combination thereof.**
Smoke Management	**Conducting a prescribed fire under suitable conditions with firing techniques that keep smoke impact within designated areas and below violations of air quality standards or within visibility protection guidelines.**
Snag	**A standing dead tree from which the leaves and most of the branches have fallen.**
Training Area	**A designation of area within Fort A.P. Hill for military training purposes.**
Understory	**The lower vegetation layers in a forest, found beneath the forest canopy (overstory), including shrubs, grasses and grass-like plants, and forbs.**

Unexploded Ordnance (UXO)	**Explosive devices that have been fired, projected, dropped, or placed in such a way that they could become armed or detonate and pose the risk of injury or death to personnel in the vicinity.**
Vegetation Management	**Treatments applied to control undesirable trees, shrubs, and grasses occurring in a natural setting. Techniques may be used to control invasive, exotic, or opportunistic plants for ecosystem protection and health, or, as in the case of prescribed burning, reduced vegetation densities and increased openness.**
Wetlands	**A transitional area between aquatic and terrestrial ecosystems that is inundated or saturated for periods long enough to produce hydric soils and support hydrophytic vegetation – *note*: *other agencies may have more specific definitions.***
Wildfire	**Any uncontrolled, non-structure fire, other than prescribed fire, occurring on lands covered wholly or in part by timber, brush, grass, or other flammable vegetation.**
Wildfire Suppression	**The act of aggressively restricting the growth or spread of a fire occurring on wildlands, as with fireline construction.**
Wildland Fire	**Any fire, controlled or uncontrolled, occurring on lands covered wholly or in part by timber, brush, grass, or other flammable vegetation. Wildland fire encompasses both prescribed fire and wildfire.**

FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

APPENDIX B: INTEGRATED NATURAL RESOURCE MANAGEMENT PLAN

CHAPTER 6 SECTION 6.3: NATURAL RESOURCES MANAGEMENT – INTEGRATION WITH MILITARY MISSION

CHAPTER 7 SECTION 7.7.6: FOREST RESOURCES MANAGEMENT – WILDLAND FIRE MANAGEMENT

6.3 INTEGRATION WITH MILITARY MISSION REQUIREMENTS

FAPH's largely undeveloped landscape provides Warfighters with a variety of maneuver space and range facilities, which support training under diverse terrain and vegetation conditions. This large landscape must, however, be actively managed to ensure that those training on FAPH have access to high quality training assets and that terrain (i.e. vegetation and landform) conditions meet all doctrinal training requirements. The vegetation, physical, and structural composition of the landscape has significant effects on a variety of training activities that an environment can support. The physiognomy of species assemblages and community types can (1) facilitate, enhance, or deter/inhibit military maneuvers depending upon the species, density, and vertical/ horizontal distribution of the vegetation, (2) decrease line of sight between stationary targets or between forward observers and their targets, and (3) increase the risk for wildfires in the presence of incendiary munitions.

One mechanism by which range and training lands are managed is through the Training Area Management Team (TAMT). This team is comprised of subject matter experts, key stakeholders and land management practitioners on FAPH. The Commanders Intent for the TAMT: "My end state is that Fort A.P. Hill provides the best possible training venue in the United States Army. This can only be realized through the integration of those key agencies on Fort A.P. Hill that directly impact the readiness of the maneuver training area and live fire facilities. These facilities prepare and challenge our Soldiers and Leaders to sustain their warfighting skills IOT deploy to austere expeditionary environments, fight, win and return safely to their Families. In many cases, the training provided by our team will be the Soldier's last opportunity to train and learn before deploying to a combat environment. The TAMT will facilitate the integration of Range Operations, ITAM, ENRD, DPW R&G and Safety IOT achieve my desired end state."

Topics that are addressed as part of the TAMT include, but are not limited to, the cyclic review and development of those projects and publications which directly contribute to the overall enhancement of training area capability. This is realized through the visioning and aligning of project phases throughout the course of the year such as the annual tree harvest plan, prescribed fire plan, open areas management, and maintenance of reclaimed maneuver areas. Examples of seasonal / time of year standard topics will include endangered species, required surveys, regulatory requirements, and game management dates. The cyclic review and refinement of the Integrated Natural Resources Management Plan, the ITAM Work Plan, and the status of Work Orders will also be addressed.

6.3.1 MANAGING FOR MANEUVER SPACE

Quantifying, assessing, and determining the extent terrain features impede or facilitate the successful completion of a mission is a key part of the Intelligence Preparation of the Battlefield Process that all units need to complete as part of their training mission. Terrain features can enhance or negatively affect the following factors relevant to military operations (U.S. Army 1994):

a. Observation and fields of fire

b. Concealment and cover

c. Obstacles

d. Key terrain

e. Avenues of approach

In forests and woodlands, the size and spacing of trees and the screening effects (i.e., concealment) of braches, stems, and foliage can significantly influence the accessibility and quality of the training environment. For mounted maneuvers (i.e., tactical vehicle-based training) in a wooded or forested environ, trees/clusters of trees must be avoided over the course of the training mission; the difficulty of avoidance, frequency of avoidance, and maximum sustained vehicle speed affect the overall quality of the training. The effect of tree spacing on tactical vehicle performance is largely influenced by the speed at which avoidance can be accomplished. Uncontrolled or unmanaged vegetation can significantly restrict the capabilities of units to conduct cross-country maneuvers. Vegetation encroachment along trails and dedicated open maneuver space limits the type, frequency, extent, and duration of training missions that can be completed as well as pose a safety risk due to limited visibility. If left unmanaged, encroachment has the potential for the long-term decline in the availability of training resources. Consequently, forests, woodlands, shrublands, and openlands are managed by installation land management programs to provide maneuver space for mounted and dismounted full spectrum training operations of the joint force (all service branches).

Figure 6-5. Forest Thinnings to Facilitate Cross-Country Maneuvers

Terrain features are an inherent element in the utilization of camouflage, concealment, and decoys as they can blur or conceal the signatures of military activity through recurring terrain patterns (e.g., agricultural, urban, wooded). Forests provide the best type of natural screen against optical reconnaissance especially if the tree crowns are wide enough apart to prevent aerial observation. Coniferous forests are more effective at concealment than deciduous forests as the crowns are green year-round. Specific land management practices used to manage maneuver space are addressed in Chapters 7 (Forest Management), Chapter 8 (Fish & Wildlife Management), Chapter 13 (Grounds Maintenance), and Chapter 14 (ITAM). Any application of herbicide to re-establish or maintain maneuver space shall be conducted in accordance with all applicable federal and state laws, DOD and Army guidance, and FAPH's Integrated Pest Management Plan (Appendix I).

6.3.2 MANAGING FOR LINE-OF-SIGHT

Uncontrolled or unmanaged vegetation can significantly restrict the visibility and capabilities of units conducting indirect fire (mortars and artillery) or even direct fire. This can be a significant detriment to the efficiency, effectiveness, and safety of units' training; in addition, there is unacceptable potential for the long-term decline in the availability of this training resource if left unmanaged. Limited line of sight during training can significantly limit the capabilities of a unit during weapons qualification and skill development. FAPH incorporates this consideration in its land management practices.

Managing vegetation to maintain or increase line-of-sight requires integration among the various functional elements within DPW and DPTMS and utilizes mechanical, chemical, and pyrological techniques, singly or in combination to achieve desired effects. Managing for line-of-sight is particularly challenging in the Range and Impact Areas due to the presence of unexploded ordnance thus requiring extensive planning and coordination among stakeholders. Any application of herbicide to re-establish or maintain maneuver space shall be conducted in accordance with all applicable federal

and state laws, DOD and Army guidance, and FAPH's Integrated Pest Management Plan (Appendix I).

6.3.3 MANAGING FOR OPTIMAL AVAILABLITLY OF FACILITIES

FAPH's 28,000-acre live fire Range Complex is heavily vegetated with forests and herbaceous open lands. Live-fire munitions have incendiary potential and consequently can ignite wildfires when weather and fuel conditions are amenable. To decrease the risks to human life and property from destructive wildfires, FAPH maintains an aggressive prescribed burn program aimed to reduce fuel loading under prescribed conditions. More information on prescribed burning can be found in Chapter 7 (Forest Management) of this INRMP and Appendix E (Integrated Wildland Fire Management Plan).

Figure 6-6. Obscured Line-of-Sight. The forest canopy (foreground) obscures lateral and forward observation from an Observation Tower (indirect fire) into Upper Zion Impact Area (center rear).

7.7.6 WILDLAND FIRE MANAGEMENT

Wildland fires occur as a matter of routine on most DOD lands, including FAPH, where live-fire weapons training or training exercises using pyrotechnics frequently occur. Consequently, prescribed burning and wildfire suppression are two activities that occur routinely on FAPH for land management and resource protection purposes. Wildland fire, has significant impacts on ecosystem functions, wildlife habitat, forest growth and health conditions, species composition, and the training environment. The impacts can be beneficial or detrimental depending on the severity, location, and extent of the fire. Wildland fire refers to both unintentional wildfires and prescribed (controlled) burns, both of which occur on and are applied to the installation landscape.

Wildland fire operations are conducted jointly with personnel from DPW-ENRD Forestry Branch, DPW Roads and Grounds, DES Fire Department, and DPTMS Range Control and Emergency Management personnel. Coordination of efforts in the application of fire as a land management tool and the control of fire unintentionally ignited on the installation is required to ensure safety, efficiency, and resource protection. This coordinated approach is described in detail within the Integrated Wildland Fire Management Plan (IWFMP) (Appendix E). The IWFMP presents the actions that will assist in the mitigation of interruptions to training operation caused by fire and that integrate wildland fire management within FAPH's natural resource management.

FAPH implements a wildland fire program that maximizes the use of prescribed fire to manage vegetation, to manage fuel loading and wildfire risk, and to contribute to ecosystem biodiversity through fire disturbance. The program also provides for rapid wildfire response and control with consideration given to installation and natural resource protection. Continuing a strong wildland fire program at the installation is imperative to reducing risk and managing vegetation and other natural resources to meet mission requirements and desired future condition of the landscape.

In accordance with the IWFMP, the Forestry Branch develops the IWFMP, manages the prescribed burn program, maintains installation weather stations and reports daily Fire Danger Ratings, coordinates resource utilization among DPW, DES, and DPTMS for program implementation and plans, coordinates, implements, and monitors wildland fire training requirement for non-DES personnel. DES Fire Department provides primary response to wildfire events, coordinates directly with Forestry Branch wildland fire personnel during response, and utilizes DPW personnel and equipment upon request. On events, where appropriate, a unified command will be established between Fire Department and Forestry personnel to best manage an event with given resources and knowledge sets. The IWFMP provides additional details on wildland fire procedures and protocols including personnel qualification requirements for fireline duties.

The Forestry Branch plans and implements prescribed burns within silvicultural systems to manage DFC and to control fuel loading, risks of wildfire, and threats to forest resources. Burn sites are planned an prioritized based on stated objectives including Range Complex fuel reduction, maneuver training area fuel reduction, wildlife habitat management, oak regeneration, post-harvest site improvement, and vegetation control. A prescribed burn plan is prepared for each site to document burn objectives, required

weather parameters, desired fire intensity, required resources, smoke management considerations, and contingency plan. The five-year prescribed burn plan developed to meet the stated objectives is included in this INRMP (Appendix F) and covered by the INRMP EA. For planning purposes, fall burn season runs 15 October through 15 December and spring burn season runs 15 February through 15 April. Prescribed burning may occur outside these times based upon objectives, fuel loading, and coordination/consultation with the USFWS regarding potential impacts to listed bats and migratory bird species.

The intensity of an uncontrolled wildfire can create significant damage in the forest setting. The trees in young, regenerating forest stands can be completely consumed, mature forest canopies can be destroyed, and the litter layer may be consumed leading to exposed soil and erosion concerns. Protected species and other natural resources may also be threatened by an uncontrolled wildfire. As a result, with the exception of the Range Complex, wildfires occurring in a forested condition will be directly controlled to minimize damage to the forest and installation resources. Fires occurring within the Range Complex will be controlled indirectly from established, cleared trails and roads.

FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

APPENDIX C: INTEGRATED CULTURAL RESOURCE MANAGEMENT PLAN

CHAPTER 6 SECTION 6.12.4: PROCEDURES TO PROTECT CULTURAL RESOURCES DURING PRESCRIBED BURNS

CHAPTER 6 SECTION 6.19: CONDUCTING CULTURAL RESOURCE SURVEYS IN ASSOCIATION WITH FORESTRY ACTIVITIES

6.12.4 PROCEDURES TO PROTECT CULTURAL RESOURCES DURING PRESCRIBED BURNS

As with timbering activities, proposed prescribed burns are subject to the survey and review requirements in SOP 19. Prescribed burns are generally conducted to remove unwanted vegetation or to eliminate forest matter that would supply fuel to an unwanted fire (e.g., wildfire). Although burns may have the potential to affect surficial cultural resources, properly conducted burns will not result in ground disturbance beyond the removal of surface combustibles. Owing to the limited amount of ground disturbance associated with prescribed burns, subsurface archaeological testing is rarely conducted for these types of activities.

Forestry procedures to protect cultural resources during prescribed burns include:

- No prescribed burn will be planned with a severity that is expected to result in the removal of the entire top layer of organic material.
- If the prescribed burn is expected to result in the removal of the organic layer or create erosion concerns, additional archaeological investigations should be completed prior to the burn in those areas identified by the CRM as having the potential to contain archaeological sites.
- When sites are present in an area of a proposed burn, the types of impacts that the burn will have on any significant and potentially significant sites should be established through coordination between the Forestry Branch and the CRM, and appropriate site protection procedures (such as buffering) should be implemented.
- For prescribed burns, buffering is conducted by the CRM and Forestry Branch in a manner similar to that used for timbering activities. However, during prescribed burns, the buffer boundary is established in the field by the Forestry Branch through the use of a firebreak. This firebreak may utilize an existing natural or manmade feature (e.g., a creek or a road) or it may require the removal of combustible materials along the perimeter of the site buffer. Additional archaeological investigations may be necessary if firebreaks will result in new ground disturbance.

However, some areas may be prone to erosion following a fire, and if this is the case, any significant or potentially significant sites could be impacted by erosion. For example, Civil War earthworks denuded of a significant amount of vegetation would be prone to erosion and structural damage if that erosion is left unchecked.

Based on forestry procedures used during prescribed burns, the majority of archaeological site types at Fort A.P. Hill will not be adversely affected by burning. For those sites where fire may result in site damage, site buffers are created through coordination between the Forestry Branch and CRM, with firebreaks established around cultural resources to protect sites from burning. Types of sites that may be adversely affected by burning, and protective measures, include:

RESOURCE TYPE	PROTECTIVE MEASURE
Historic sites with extant surficial remains that could be damaged by direct or indirect impacts of fire.	Threatened resources (e.g., fence posts or wood foundation/structure elements) are marked by the CRM for avoidance.
Historic military sites, such as Civil War earthworks, that may be damaged by erosion if denuded of vegetation during a burn.	Regular prescribed burns reduce the amount of fuel available to a fire, thereby reducing the potential that a burn (prescribed or natural) may destroy
Sites where radiometric dating or heat signature analysis may be a useful tool to investigate potential deposits, such as datable materials (e.g., wood or food remains) or heat signatures (e.g., burn patterns from domestic or industrial fires).	Known sensitive resources and areas with the potential for sensitive resources are marked by the CRM for avoidance.

6.19 SOP 19: CONDUCTING CULTURAL RESOURCE SURVEYS IN ASSOCIATION WITH FORESTRY ACTIVITIES

(TEXT AS FILED WITH THE VASPHO)

6.19.1 Natural Resource Site Assessment (NRSA) Process

The natural resource management team at Fort A.P. Hill has developed an internal review process to ensure that proposed undertakings are subject to comprehensive review prior to implementation. As Fort A.P. Hill policy stresses the avoidance of natural and cultural resources whenever possible, the Natural Resource Site Assessment (NRSA) process has been developed to identify significant resources that may be present in proposed project areas. The NRSA process requires that the proponent of an undertaking (e.g., the Forestry Branch) provide the natural resource management team with data so that potential resource management conflicts can be identified and undertakings can be modified early in the planning stages. These data include:

- project details and
- appropriate spatial data.

Core members of the natural resource management team include the Fort A.P. Hill Foresters, Environmental Specialists, Wildlife Biologist, Natural Resource Specialist, Range and Training Lands Assessment Coordinator, Aquatic Resources Manager, NEPA Coordinator, and CRM. The CRM meets the Secretary of the Interior's Professional Qualifications Standards for an archaeologist and is responsible for coordinating all necessary cultural resource reviews (e.g., Section 106 and NEPA review) with the NRSA process.

The natural resource management team documents the results of their field investigations and studies through Fort A.P. Hill's standardized NRSA forms and geographic information system mapping. Once the proponent of the undertaking has been advised of any potential resource management issues, project plans are finalized and the natural resource management team determines if the project will require any restrictions or mitigation(s) of effects. Based on this information, the natural resource management team determines other requirements including:

- environmental permits (e.g., stormwater, wetlands, threatened and endangered species, etc.) and
- the necessary level of environmental documentation (e.g., record of environmental consideration, environmental assessment, environmental impact statement, etc.).

The NHPA Section 106 process is coordinated with the NRSA process and any environmental review under the NEPA. Through the NEPA process, appropriate public and government entities are notified of, and asked to provide comments relative to, the proposed undertaking. For forestry undertakings, this notification process is coordinated with the United States Fish and Wildlife Service, Environmental Protection Agency, Caroline County, the Rappahannock Area Development Commission, and the Commonwealth of Virginia. NEPA coordination with the Commonwealth of Virginia is conducted through the Virginia Department of Environmental Quality (DEQ) and typically involves review by the Departments of Game and Inland Fisheries, Agriculture and Consumer Services, Conservation and Recreation, Transportation, and Historic Resources, as well as other interested state or local agencies identified by the DEQ.

6.19.2 Outreach Process

Section 106 consultation with Federal tribes, or other interested parties, relative to historic properties is coordinated by the CRM. To identify Federal tribes that have an interest in cultural resources at Fort A.P. Hill, correspondence has been initiated with 16 Federal tribes. Additionally, the Council on Virginia Indians and the Rappahannock Tribe have been consulted and have expressed interest in cultural resources related to Native Americans in the Fort A.P. Hill area. The general public is typically invited to comment on projects through the Fort A.P. Hill Public Affairs Office, which publishes public notices in local papers (e.g., The Free Lance Star, The Caroline Progress, etc.) and maintains project documentation for public review.

To increase public outreach and seek active public participation, Fort A.P. Hill has established a three part historical documentation program. This program includes:

- an oral history project that is intended to identify persons who lived on Fort A.P. Hill prior to Army acquisition and collect information and interviews regarding work and life in the area.

- detailed historical deed research for Fort A.P. Hill.

- the integration of the oral history documentation and the historical deed research to create a detailed historical context for Fort A.P. Hill.

6.19.3 Survey and Review Requirements

The CRM is responsible for determining the level of survey or other investigations required for a proposed undertaking and for insuring that such investigations meet the VDHR requirements for project review. The level of survey (i.e., pedestrian surface survey or subsurface testing) is determined in consultation with the proponent of the undertaking and Fort A.P. Hill Range Control staff. For example, if the undertaking will result in limited ground-disturbance or will be located in an active Impact Area, the CRM may choose to perform pedestrian surface survey with no subsurface testing. When an undertaking is located in an area that has been previously surveyed for cultural

resources, the level of effort employed during the previous survey will be taken into consideration during the new survey. For example, if the previous survey consisted of pedestrian surface survey and the proposed undertaking will result in significant ground disturbance (e.g., skid trail development), then the new survey may require subsurface testing in areas of proposed disturbance. NRSA cultural resource surveys generally require field inspection regardless of previous survey status, with exceptions due to safety issues.

In support of the installation's training mission, forestry activities are conducted to maintain suitable ground conditions in the ranges and training areas, and military facilities are constructed or modified as required for training purposes. Forestry activities are currently being coordinated on a fiscal-year basis, with future activities to be planned on a five-year basis. As the total amount of acreage involved in these activities can easily exceed 30,000 acres, it is necessary to conduct ongoing cultural resource surveys focusing on individually proposed forestry blocks according to proposed harvest/activity schedules. To simplify and expedite cultural resource review of these forestry blocks, the CRM may submit the results of a forestry block survey to the VDHR in the format of an executive summary that describes the project area, proposed activities, field methods, and results/recommendations of the survey. The executive summary will be considered to constitute all the necessary documentation for VDHR project review and the VDHR will provide a response to the summary within 30 days. However, the VDHR review process will not be considered complete until the CRM has submitted a detailed technical report that compiles the results of all cultural resource surveys that were conducted in association with forestry activities and for which executive summaries were submitted to the VDHR within the previous six months. The first such report was submitted to the VDHR by 31 July 2007, with subsequent reports submitted on a semiannual basis. If the CRM does not meet the Secretary of the Interior's qualifications for an archaeologist, or fails to submit required reports, the VDHR has no obligation to accept additional executive summaries as full documentation for project review.

FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

APPENDIX D: MUTUAL AID AGREEMENT(S)

MUTUAL AID AGREEMENT BETWEEN
THE COUNTY OF CAROLINE
DEPARTMENT OF FIRE-RESCUE & EMERGENCY MANAGEMENT
AND FORT A.P. HILL FIRE & EMERGENCY SERVICES

In the interest of providing the most rapid and effective fire and rescue service to the citizens of the County of Caroline, Virginia, and to the personnel working, residing, training on, and visiting Fort A. P. Hill, Virginia, this agreement, entered into this **10th day of November 2016** between the Garrison Commander, Fort A.P. Hill, Virginia acting according to the authority of section 1856a, Title 42, United States Code and the County of Caroline Department of Fire-Rescue & Emergency Management is to secure for each the benefits of mutual aid in fire prevention, the protection of life and property from fire, and the firefighting to include containment and confinement, and special rescue events involving vehicular and water mishaps, and trench, building, and confined space extractions. It is agreed that-

1. On request to a representative of the Fort A.P. Hill Fire & Emergency Services by a representative of the County of Caroline Department of Fire-Rescue & Emergency Management, firefighting equipment and personnel of the Fort A.P. Hill Fire & Emergency Services will be dispatched when available to any point within the area for which the County of Caroline Department of Fire-Rescue & Emergency Management normally provides fire protection as designated by the representative of the County of Caroline Department of Fire-Rescue & Emergency Management.

2. On request to a representative of the County of Caroline Department of Fire-Rescue & Emergency Management by a representative of the Fort A.P. Hill Fire & Emergency Services, firefighting equipment and personnel of the County of Caroline Department of Fire-Rescue & Emergency Management will be dispatched when available to any point within the firefighting jurisdiction of the Fort A.P. Hill Fire & Emergency Services.

3. The rendering of assistance under the terms of this agreement shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting department if, for any reason, assistance cannot be rendered.

4. Any dispatch of equipment and personnel pursuant to this agreement is subject to the following conditions:

a. Any request for aid under this agreement will specify the location to which the equipment and personnel are to be dispatched; however, a representative of the responding organization will determine the amount and type of equipment and number of personnel to be furnished.

b. The responding organization will report to the officer in charge of the requesting organization at the location to which the equipment is dispatched, and will be subject to the orders of that official.

c. A responding organization will be released by the requesting organization when the services of the responding organization are no longer required, or when the responding organization is needed within the area for which it normally provides fire protection.

d. If a crash of aircraft owned or operated by the United States or military aircraft of any foreign nation occurs within the area for which the County of Caroline Department of Fire-Rescue & Emergency Management normally provides fire protection, the Chief of the Fort A.P. Hill Fire & Emergency Services or his or her representative will participate in a unified command on arrival at the scene of the crash.

5. Each party hereby waives all claims against every other party for compensation for loss, damages, injury, or death occurring as a consequence of the performance of this agreement, except those claims authorized under 15 U.S.C. 2210.

6. The chief fire officers and personnel of the fire departments of both parties to this agreement are invited and encouraged, on a reciprocal basis, to frequently visit each other's activities for guided familiarization tours consistent with local security requirements and, as feasible, to jointly conduct pre-fire planning inspections and drills.

7. The technical heads of the fire departments of the parties to this MAA are authorized and directed to meet and draft any detailed plans and procedures of operation necessary to effectively implement this agreement. Such plans and procedures of operations shall become effective upon ratification by the signatory parties.

8. All equipment used by the County of Caroline Department of Fire-Rescue & Emergency Management in carrying out this agreement will be owned by the County of Caroline Department of Fire-Rescue & Emergency Management; and all personnel acting for the County of Caroline Department of Fire-Rescue & Emergency Management under this agreement will be an employee or volunteer member of the County of Caroline Department of Fire-Rescue & Emergency Management.

9. The parties agree that mutual aid will only be requested when the Incident Commander or Senior Fire Officer has made the determination that the available resources within their own jurisdiction will be unable to safely mitigate the incident within a reasonable amount of time.

This agreement shall become effective upon the date hereof and remain in full force and effect until cancelled by mutual agreement of the parties hereto or by written notice by one party to the other party, giving thirty (30) days' notice of said cancellation.

Jason R. Loftus
Fire and EMS Chief
County of Caroline Department of
Fire-Rescue & Emergency Management

Charles Culley
County of Caroline
Administrator

Thomas E. Acacia
Fire Chief
Fort A. P. Hill
Fire & Emergency Services

Andrew O. Jordan
LTC, SF
Commanding

FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

APPENDIX E: FORESTRY 2 – BRUSH TRUCK CHECK LIST

Forestry 2 – Brush Truck Check List

- Inspect truck for deficiencies
- Check tire pressure
- Check all fluid levels
- Inspect hoses and belts
- Check lights/turn signals/ wipers/horn
- Test the siren
- Check that water tank is at full capacity
- Start the pump and run water to both reel, spray bar, and water turret

Check the following equipment:

- Portable pump; run weekly and check oil
    - 50’ 1.5” NH Hose
    - 50’ 1” NH Hose
    - 1.5” NH Gated Wye
    - 1.5” NPT to NH
- Hydrant Hose
- 5 gallon water jug
- 1.25 gallon unmixed gasoline
- 3 ***full*** drip torches
- Hand tools
    - Rogue hoe (1)
    - Rogue hoe, triangle head (1)
    - Pulaski (1)
    - McLeod (1)
    - Fire swatters (2)
    - Fire rake (1)
- Spanner Wrench (4)
- Hydrant Wrench (1)
- Chainsaws; run weekly
    - MS-362C, 20”
    - MS-441C Magnum, 25”
- Chaps (2)
- Helmets (2)
- Bar oil
- Oil gas mix (3)
- Can of mixed fuel
- Chainsaw kit (2)
    - Scrench
    - At least 3 wedges
    - Quick clot kit

    - MSR bottles (2) per kit
    - Multitool
    - Sharpener
    - Flat file
- Leafblowers (2)
- Bladder bags (1)
- Hose fittings; Red Bags:

50’ GHT Hose	2	50’ GHT Hose	2
Hose Clamp 1-1.5”	1	Hose Clamp 1-1.5”	1
GHT Nozzle	3	GHT Nozzle	3
1” NH Nozzle	1	1” NH Nozzle	1
1” Gated Wye	2	1” Gated Wye	2
1.5”-1” Gated Wye (red)	1	1” Female NH to Male NPT	1
GHT Gated Wye	2	GHT Gated Wye	1
1” NPSH to GHT T-valve	3	1” NPSH to GHT T-valve	3
1” to 1.5” Expander NH	1	1” to 1.5” Expander NH	1
1.5 to 1” Reducer NH	1	1.5 to 1” Reducer NH	1
GHT Female to GHT Male	3	GHT Female to GHT Male	3
1” Male NPT to 1” Female NPT	1	1.5” Female to Female NH	1
1.5” Female to Female NH	1	1” Male to Male NH	1
1” Male to Male NH	1	1” Female to Female NH	1
1” Female to Female NH	1	1” Female NPT to 1” Male NH	1
1” Female NPT to 1” Male NH	1	GHT Gate	2
GHT Gate	1	Spanner Wrench	1
Spanner Wrench	1		

- Green Bags with 300’ of 1” NH Hose
- 300’ of 1.5” NH Hose on top of Tank

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APPENDIX F: FIRE CACHE INVENTORY

Fire Cache – Equipment Inventory

Gas Can (1 gallon)	5	Portable Air Compressor	2
Fuel/Oil Tags	36	ATV Googles	4
Accessory Adaptor (3.5 mm)	9	Radio Ear Mic	4
Water Cooler (5 gallon)	3	ATV Torch Wick	2
Fire Hose (1” x 100’)	6	Nomex Coveralls	6
Fire Hose (1.5” x 100’)	2	Facemask	23
Fire Hose (1” x 50’)	2	Bladder Bag	3
Garden Hose (50’)	8	Bungee Cord	21
Burn Kit	1	Safety Glasses	32
Carabiner	12	Nomex Jacket	1
Chainsaw Helmet	1	Nomex Pants	1
Sledgehammer	1	Nitrile Gloves	200
Chemistry Googles	21	Draft Hose	3
Ear Plugs - Box	9	Bottle Torch Wick	4
ATV Replacement Lenses	2	Fuel Hose	2
Fire Helmet	3	Fuses - Box	2
Fire Rake	1	Garden Hose Adaptor	1
Fire Shelter	15	Garden Hose Nozzle	8
Fire/Smoke Sign	11	Replacement Gas Nozzle	9
First Aid Kit	1	Leather Gloves	60
Flashlight	4	Helmet Sweatbands	22
Gear Bag	2	Hard Hat	2
Bottle Torch	5	Headlamps	2
Honda GXH Pump	1	Lighters	21
Hose Bands	15	McLeod Hand Tool	3
Hot Shield Facemask	2	Equipment Spark Plugs	12
IRPG	2	Equipment Filters (Oil/Air)	16
Kestrel Weather Station	2	NH Adaptors	10
Kestrel Tripod	2	ATV Taillights	2
Key Chain Reels	2	Tire Sealant	4
Stihl Leaf Blower	1	Pyro Shot w/Accessories	1
Light Sticks	24	Quick Clamps	23
Lighter Leash	26	Radio Harness	3
RALS	1	Spill Kit	1
Boot Laces	2	Fire Swatter Hand Tool	1
Rogue Hand Tool	3	Butane Fuel Bottle	1
Tool Mount Kit	1	Air Horn	4
Nomex Shroud	14	Felling Wedge	2
Fire/Smoke Sign Holder	6	Safety Vest	1
Snap Tank (1000 gallon)	1	ATV Battery	2
Spanner Wrench	3		

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APPENDIX G: POLARIS RANGER 1000 EQUIPMENT INVENTORY

Polaris Ranger 1000 – Equipment Inventory

1”-1.5” Gated Wye	1	Felling Mallet	1
GHT Spray Handle	1	ATV Googles	1
1” Nozzle	1	Chainsaw Files	2
Spanner Wrench	2	Scrench	1
1” GHT T-Valve	2	Felling Wedge	2
1” NPT Male to 1” NH Male	1	Fuel Can (1.25 gallon)	1
1” NPT Male to Female	1	Fire Extinguisher	1
1” NH Male to 1” NPT Female	2	Chainsaw Helmet	1
1” NH GHT	2	Chainsaw Chaps	1
1” NH Male to Male	1	Rogue Hand Tool	1
GHT Wye	1	Stihl Chainsaw	1
GHT Gated Wye	1	Skid Unit	1
1.5” NH Female to Female	1		
1.5” NH Male to Male	1		
1.5” NH Male to 1.5” Female Cam	1		
2” NPT to 1.5” NH to 2” Cam	1		
1.5” NH to 1.5” Cam	1		
Fire Hose – 1” x 100’	3		

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APPENDIX H: POLARIS RANGER 900 XP EQUIPMENT INVENTORY

Polaris Ranger 900XP – Equipment Inventory

1”-1.5” Gated Wye	1	Felling Mallet	1
GHT Spray Handle	1	ATV Googles	1
1” Nozzle	1	Chainsaw Files	2
Spanner Wrench	2	Scrench	1
1” GHT T-Valve	2	Felling Wedge	2
1” NPT Male to 1” NH Male	1	Fuel Can (1.25 gallon)	1
1” NPT Male to Female	1	Fire Extinguisher	1
1” NH Male to 1” NPT Female	2	Chainsaw Helmet	1
1” NH GHT	2	Chainsaw Chaps	1
1” NH Male to Male	1	Rogue Hand Tool	1
GHT Wye	1	Stihl Chainsaw	1
GHT Gated Wye	1	Skid Unit	1
1.5” NH Female to Female	1		
1.5” NH Male to Male	1		
1.5” NH Male to 1.5” Female Cam	1		
2” NPT to 1.5” NH to 2” Cam	1		
1.5” NH to 1.5” Cam	1		
Fire Hose – 1” x 100’	3		

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APPENDIX I: POLARIS SPORTSMAN 570SP EQUIPMENT INVENTORY

Polaris Sportsman 570SP (2) – Equipment Inventory

Fire Extinguisher	1
Rogue Hand Tool	1
Mounted Torch	1

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APPENDIX J: PRESCRIBED BURN NOTIFICATIONS ROSTER

INCIDENT: Prescribed Burn			INITIAL TIME	UPDATED TIME	NOTIFIED BY:	WHO:	
Post Headquaters	**FAPH EXT**	**EMAIL**	Alert				
Garrison Commander	8206	michael.e.gates2.mil@mail.mi					
Command Sgt Major	8747	joseph.e.reilly.mil@mail.mil					
Deputy to Garrison Commander	8206	stephen.p.bickel.civ@mail.mi				Forestry	
DPTMS			Alert				
Director		james.r.salyers.civ@mail.mil					
Director (Acting)	8323	scott.t.kittle.civ@mail.mil					
Chief, Operations, Plans, Security	8156	richard.t.white30.civ@mail.mil					
Security Specialist	8982	brian.s.glusing.civ@mail.mil					
Range Scheduler Manager	8748	ashley.b.gray.civ@mail.mil					
Range Safety Specialist	8200	david.l.faunteroy.civ@mail.mil					
Supervisory Range Specialist	8224	timothy.p.casey6.civ@mail.mil					
Fire Desk	8224	shawn.d.brooks18.ctr@mail.mil					
PAIO							
Director	8842	henry.v.mcnair.civ@mail.mil					
Management Analyst	8824	johnathan.b.taylor.civ@mail.mil				Prescribed burn	
Management Analyst	8828	dianne.v.smith2.civ@mail.mil					
DES			Alert				
Director	8425	david.n.carey.civ@mail.mil					
Fire Chief	8148	thomas.e.acacia.civ@mail.mil					
Deputy Fire Chief	8361	patrick.j.wilson.civ@mail.mil					
Police Chief	8299	steven.j.clement.civ@mail.mil					
Safety Office			Alert				
Safety Officer	8269	lynda.t.rice.civ@mail.mil					
Safety Asst	8269	phillip.r.bowling.civ@mail.mil				**WHEN:**	
DPW - Environmental Div	8255		Alert				
Director	8215	benjamin.h.mcbride.civ@mail.mil					
Division Chief	8223	terry.l.banks14.civ@mail.mil					
Public Affairs Office			Alert				
PA Officer	8324	robert.h.mcelroy.civ@mail.mil					
Caroline Alert Message	8120	michael.c.meisberger.civ@mail.mil					
VA Dept of Forestry			Email				
Matt Coleman (Caroline)	OFFICE	633-6992					
	EMAIL	matthew.coleman@dof.virginia.gov					
Heather Tuck	EMAIL	heather.tuck@dof.virginia.gov					
Tom Snoddy (Spotsylavania)	EMAIL	thomas.snoddy@dof.virginia.gov					
Cindy Bronner -Prog Technician ER		cindy.bronner@dof.virginia.gov				**WHERE:**	
Lisa Burke - Dispatch		lisa.burke@dof.virginia.gov					
David Houttekier	EMAIL	david.houttekier@dof.virginia.gov					
Kevin Dodson	EMAIL	kevin.dodson@dof.virginia.gov					
John Hisghman - Deputy Forester	EMAIL	john.hisghman@dof.virginia.gov					
Bryant Bays - Regioinal Forester	EMAIL	bryant.bays@dof.virginia.gov					
VA Dept of Envir Quality	OFFICE	703-583-3895	Email				
Dave Hartshorn	EMAIL	r.david.hartshorn@deq.virginia.gov	M. Fisher				
Caroline Co Dispatch	OFFICE	633-4357	Phone				
King George Co Dispatch	OFFICE	540-775-8589	Phone				
Spotsylvania Co Dispatch	OFFICE	540-582-7115	Phone				
	CELL					**DETAILS:**	
Bowling Green Mayor	OFFICE	633-6212	Phone				
David Storke	CELL						
Port Royal Mayor	CELL	540-226-4487	Email				
Jim Heimbach (Mayor)	EMAIL	jh@jheimbach.com					
Nancy Long	EMAIL	long5nancy@aol.com			PAO		
TENANT ORGANIZATIONS - NOTIFY IF POTENTIALLY IMPACTED							
AWG Compound/Ranges	OFFICE	301-833-5296	Phone				
Bill Mizell	EMAIL	william.m.mizell.civ@mail.mil					
McMahon EODTC	OFFICE	804-633-8439	Alert			**NOTES:**	
Robert Hood	EMAIL	robert.e.hood8.civ@mail.mil					
	EMAIL						
Camp Connors	OFFICE	8456	Alert				
Bill Knode	EMAIL	william.knode@navsoc.socom.mil					
Night Vision / Laser Range	OFFICE	8963 / 8926 / 8555					
Alt POC (temp) James Tignor	EMAIL	james.m.tignor4.ctr@mail.mil					
Pender Camp	OFFICE	2216					
Jaime Cotter		Mike Earl - 804-840-7197					
Finnegan's Field	OFFICE						
	EMAIL						
Cooke Camp	OFFICE	8246					
ARNG Reserve Center	OFFICE	8259					
	CELL	443-293-2696					
LT Gregory Bucci - 310th En Co	EMAIL	gregory.r.bucci.mil@mail.mil					
Demo Site 71A	OFFICE	8275	Alert				
Mel Soult	EMAIL	melvin.l.soult.civ@mail.mil					

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APPENDIX K: DELIBERATE RISK ASSESSMENT FORM

DELIBERATE RISK ASSESSMENT WORKSHEET

1. MISSION/TASK DESCRIPTION	2. DATE *(DD/MM/YYYY)*

3. PREPARED BY

a. Name (Last, First Middle Initial)	b. Rank/Grade	c. Duty Title/Position

d. Unit	e. Work Email	f. Telephone *(DSN/Commercial (Include Area Code))*

g. UIC/CIN *(as required)*	h. Training Support/Lesson Plan or OPORD *(as required)*	i. Signature of Preparer

Five steps of Risk Management: (1) Identify the hazards (2) Assess the hazards (3) Develop controls & make decisions (4) Implement controls (5) Supervise and evaluate *(Step numbers not equal to numbered items on form)*

	4. SUBTASK/SUBSTEP OF MISSION/TASK	5. HAZARD	6. INITIAL RISK LEVEL	7. CONTROL	8. HOW TO IMPLEMENT/ WHO WILL IMPLEMENT	9. RESIDUAL RISK LEVEL
+ -					How: Who:	
+ -					How: Who:	
+ -					How: Who:	

DD FORM 2977, SEP 2014

Page 1 of 5

	4. SUBTASK/SUBSTEP OF MISSION/TASK	5. HAZARD	6. INITIAL RISK LEVEL	7. CONTROL	8. HOW TO IMPLEMENT/ WHO WILL IMPLEMENT	9. RESIDUAL RISK LEVEL
+ -					How: Who:	
+ -					How: Who:	
+ -					How: Who:	

10. OVERALL RESIDUAL RISK LEVEL *(All controls implemented)*:

EXTREMELY HIGH HIGH MEDIUM LOW

11. OVERALL SUPERVISION PLAN AND RECOMMENDED COURSE OF ACTION

12. APPROVAL OR DISAPPROVAL OF MISSION OR TASK Approve Disapprove

a. Name (Last, First, Middle Initial)	b. Rank/Grade	c. Duty Title/Position	d. Signature of Approval Authority

e. Additional Guidance:

Risk Assessment Matrix		Probability *(expected frequency)*				
		Frequent: Continuous, regular, or inevitable occurrences	**Likely:** Several or numerous occurrences	**Occasional:** Sporadic or intermittent occurrences	**Seldom:** Infrequent occurrences	**Unlikely:** Possible occurrences but improbable
Severity *(expected consequence)*		A	B	C	D	E
Catastrophic: *Mission failure, unit readiness eliminated; death, unacceptable loss or damage*	I	EH	EH	H	H	M
Critical: *Significantly degraded unit readiness or mission capability; severe injury, illness, loss or damage*	II	EH	H	H	M	L
Moderate: *Somewhat degraded unit readiness or mission capability; minor injury, illness, loss, or damage*	III	H	M	M	L	L
Negligible: *Little or no impact to unit readiness or mission capability; minimal injury, loss, or damage*	IV	M	L	L	L	L

Legend: **EH** - Extremely High Risk **H** - High Risk **M** - Medium Risk **L** - Low Risk

13. RISK ASSESSMENT REVIEW *(Required when assessment applies to ongoing operations or activities)*

a. Date	b. Last Name	c. Rank/Grade	d. Duty Title/Position	e. Signature of Reviewer

14. FEEDBACK AND LESSONS LEARNED

15. ADDITIONAL COMMENTS OR REMARKS

Instructions for Completing DD Form 2977, "Deliberate Risk Assessment Worksheet"	
1. Mission/Task Description: Briefly describe the overall Mission or Task for which the deliberate risk assessment is being conducted. **2. Date** *(DD/MM/YYY)*: Self Explanatory. **3. Prepared By:** Information provided by the individual conducting the deliberate risk assessment for the operation or training. **Legend: UIC** = Unit Identification Code; **CIN** = Course ID Number; **OPORD** = operation order; **DSN** = defense switched network; **COMM** = commercial **4. Sub-task/Sub-Step of Mission/Task:** Briefly describe all subtasks or substeps that warrant risk management. **5. Hazard:** Specify hazards related to the subtask in block 4. **6. Initial Risk Level:** Determine probability and severity. Using the risk assessment matrix (page 3), determine level of risk for each hazard specified. probability, severity and associated Risk Level; enter level into column. **7. Control:** Enter risk mitigation resources/ controls identified to abate or reduce risk relevant to the hazard identified in block 5. **8. How to Implement / Who Will Implement:** Briefly describe the means of employment for each control (i.e., OPORD, briefing, rehearsal) and the name of the individual unit or office that has primary responsibility for control implementation. **9. Residual Risk Level:** After controls are implemented, determine resulting probability, severity, and residual risk level. **10. Overall Risk After Controls are Implemented:** Assign an overall residual risk level. This is equal to or greater than the highest residual risk level (from block 9).	**11. Supervision Plan and Recommended Course of Action:** Completed by preparer. Identify specific tasks and levels of responsibility for supervisory personnel and provide the decision authority with a recommend course of action for approval or disapproval based upon the overall risk assessment. **12. Approval/Disapproval of Mission/Task:** Risk approval authority approves or disapproves the mission or task based on the overall risk assessment, including controls, residual risk level, and supervision plan. **13. Risk Assessment Review:** Should be conducted on a regular basis. Reviewers should have sufficient oversight of the mission or activity and controls to provide valid input on changes or adjustments needed. If the residual risk rises above the level already approved, operations should cease until the appropriate approval authority is contacted and approves continued operations. **14. Feedback and Lessons Learned:** Provide specific input on the effectiveness of risk controls and their contribution to mission success or failure. Include recommendations for new or revised controls, practicable solutions, or alternate actions. Submit and brief valid lessons learned as necessary to persons affected. **15. Additional Comments or Remarks:** Preparer or approval authority provides any additional comments, remarks, or information to support the integration of risk management. **Additional Guidance:** Blocks 4-9 may be reproduced as necessary for processing of all subtasks/ substeps of the mission/task. The addition and subtraction buttons are designed to enable users to accomplish this task.

FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

APPENDIX L: ANNUAL PRESCRIBED FIRE PLAN

FY 22 Prescribed Fire Annual Work Plan and Operational Summary

1. Purpose: Provide background and operational summary for prescribed fire implementation to provide context for reviewing the FY 22 prescribed fire plan for Fort A.P. Hill

2. Background: Prescribed fire is implemented at Fort A.P. Hill (FAPH) as a proven, low-cost method for managing vegetation densities, wildlife habitat, ecosystem characteristics, and for reducing wildland fuels and wildfire risk; a known threat to installation resources. This plan is intended to inform stakeholders specifically of the sites selected for the FY 22 Prescribed Fire Annual Work Plan, the site selection logic, how sites will be prioritized, and stakeholder responsibilities and coordination requirements. Additionally, logistics of implementing prescribed fires (e.g., weather parameters, notifications, documentation, required resources, and other logistics) are outlined and summarized for stakeholder awareness. The prescribed fire program is outlined in detail in the USAG-FAPH Integrated Wildland Fire Management Plan (IWFMP).

3. Definitions: Per National Wildfire Coordinating Group (NWCG), “wildland fire” is an all-inclusive term for fire occurring in vegetation or natural fuels to include both prescribed fire (intentional) and wildfire (unintentional).

4. References. Prescribed burning at FAPH is implemented IAW the goals, objectives, policies, Army Regulations (AR) and procedures indicated in:

   AR 200-1, Environmental Protection and Enhancement (2007)
   AR 385-63, Range Safety (2012)
   AR 420-1, Army Facilities Management (2012)
   AR 525-27, Army Emergency Management Program (2009)
   DA PAM 385-30, Risk Management (2014)
   USAG-FAPH 350-1, Training Regulation (2013)
   USAG-FAPH Integrated Wildland Fire Management Plan (IWFMP 2012) (currently being updated)
   USAG-FAPH Integrated Natural Resources Management Plan (INRMP 2016)
   USAG-FAPH Emergency Management Plan (EMP 2010)
   Virginia’s Forestry Best Management Practices for Water Quality (2011)
   USAG-FAPH Occupational Safety and Health Regulation 385-10 (2020)
   USAG-FAPH Explosive Safety Management Plan 385-64 (2020)

5. Responsibilities. Detailed responsibilities can be found in the USAG-FAPH IWFMP.

   a. Garrison Commander maintains awareness of prescribed fire events and status and makes Go /No-Go decisions regarding non-standard resourcing and/or in perceived or actual elevated risk situations i.e. Extreme Fire Danger Rating.

   b. Directorate of Public Works (DPW) Environmental and Natural Resources Division (ENRD) Forestry Branch plans, prepares, manages, and implements the prescribed fire program including notifications and Incident Action Plans (IAP), generates daily

Fire Danger Rating (FDR) for installation, resourcing, and post-burn site stabilization or other mitigation requirements.

c. Directorate of Emergency Services (DES) Fire Department, approves Hot Work permits (DA Form 5383) for each prescribed fire, provides direct prescribed fire implementation support and resources when available, and conducts post-burn monitoring throughout off-duty hours. DES Police provide traffic control when determined that smoke is negatively impacting, or may impact visibility on roads or if prescribed fire personnel are working on or near high-traffic areas.

d. DPW Roads & Grounds provides support personnel and equipment as requested for firebreak preparation.

e. Directorate of Plans, Training, Mobilization, and Security (DPTMS) Range Operations provides facility scheduling coordination, Range Complex access support, burn site prioritization input, pre-burn range preparation, and general activity review for de-confliction of on-going training activities.

f. Public Affairs Office (PAO) provides public notifications of prescribed fire activities through social media, phone calls and county alert systems.

6. Scheduling: Due to the subjectivity of prescribed fire implementation to weather condition and smoke movement factors, specific dates are NOT set for each prescribed fire. A prescribed fire SEASON is indicated to communicate the most likely timeframe for prescribed fires to occur based on historical fire weather patterns. Prescribed fire areas will be scheduled using Range Facility Management Support System (RFMSS) to ensure safety of all installation personnel, those on-site conducting training missions, or accessing installation lands for other authorized reasons. The actual date that the prescribed fire will occur at any given site cannot be set. The following are general guidelines regarding prescribed fire scheduling:

   a. With the completion of proper environmental surveys and approvals, burning may be conducted year-round, though the majority of the burns are conducted from 16 September through 14 April. This seasonality leverages favorable burn conditions while also avoiding or limiting impacts during wildlife nesting season, bat activity season, and potential negative impacts to air quality during summer months. Burns will occur between 15 April and 15 September ONLY if identified as mission critical or other justified criticality is identified.

   b. Summer season (01 July – 31 August) prescribed fires are occasionally implemented based objectives and sensitive resource considerations. Refer to restrictions outlined in paragraph a. for burns occurring between 15 April – 15 September.

   c. Priority prescribed fire areas and firebreak preparation work are scheduled through RFMSS and requires direct coordination and continual communication with Range Operations due to the weather-dependent nature of the prescribed fire program.

d. Range shut-down periods are leveraged for Range Complex access. Range Complex prescribed fires receive the highest priority during these scheduled shut-down periods. Additional Range Complex prescribed fires are conducted as requested by DPTMS and when safe access is available. Forestry may request access to the Range Complex to complete prescribed fires outside of the established range maintenance period.

e. Each prescribed fire site is reviewed or surveyed by ENRD personnel for wildlife, endangered species (bats and plants), cultural resources, water quality, compliance, utilities, and other considerations. Survey results and considerations are documented using the FAPH Natural Resource Site Assessment (NRSA) process.

7. Weather parameters:

a. Parameters regarding air temperature, relative humidity, wind speed, wind direction, fuel moisture, fuel type and a calculated Fire Danger Rating (FDR) determine when, where and what kind of burning can be conducted at any particular time to meet stated objectives, desired future site conditions, and desired fire behavior.

b. Weather parameters outside of desired ranges are likely to result in either poor results, poor smoke conditions, or intense fire behavior or higher difficulty of control, and/or inability to meet management objectives. Burning outside of prescribed ranges may occur if one of the parameters falls outside of the range and the Burn Boss determines the prescribed fire can be accomplished safely (e.g., humidity is lower than prescribed range, but sustained wind is also very low, so fire behavior is expected to be manageable and still meet objectives). Prescribed fire weather parameters are:

	Maximum	**Minimum**
Temperature (°deg)	90	32
Relative Humidity (%)	65	20
Wind Speed @ 20ft (mph)	16	5
Wind Gusts (mph)	20	NA
Mixing Height	NA	500m/1,640ft
Ventilation Rate	NA	2000ft
KBDI	600	NA
Fire Danger Rating	Very High	Low

8. Prescribed fire site selection, prioritization, and considerations:

a. The total acreage of the FY 22 Prescribed Fire Annual Work Plan is 41,085 acres. It is unlikely that this level of accomplishment is attainable with current resources, site availability/scheduling, and weather restrictions; however, it is a compilation of the burning that is required to meet mission and land management goals and objectives. Including this amount of acreage in the annual fire plan also allows flexibility for fire managers to select sites based on availability/accessibility, site goals, weather conditions, and smoke management considerations. In addition to selected blocks,

logging debris piles will be burned at completed harvest sites to remove training obstacles and generally clean up logging sites.

b. Selection and prioritization of FY 22 prescribed fire sites (aka burn blocks) (Enclosures 1-2) includes the following criteria and considerations:

(1) Prescribed fire site selection includes:

(a) Range Complex – with exception of individual burn blocks that burn thoroughly in FY 21 and requires recovery prior to reburn.

(b) Training Area (TA) or Controlled Access Area (CA) burn sites from previous prescribed fire plans that were not accomplished or are scheduled to be burned based on assigned fire return interval.

(c) Fuel reduction or vegetation management priority areas to meet training mission objectives.

(d) Other prescribed fire sites identified for post-harvest debris management, oak management or other specific forest management objective, wildlife conservation area management, and/or threatened and endangered plant habitat management.

(2) Prescribed fire site prioritization includes:

(a) Fall burns (16 September – 30 November) prioritize any burn block occurring in the immediate vicinity of bald eagle nests to avoid disrupting the impending nesting season.

(b) Areas within the Range Complex that have not received a completely effective burn, either prescribed or wild, will be prioritized to receive a prescribed fire treatment.

(c) Forest management objectives including post-harvest debris/fuel clean up and site preparation or oak species management prescriptions.

(d) Wildlife habitat management objectives including burning of warm season grasslands and other designated wildlife management areas.

(3) Additional wildlife considerations include:

(a) Minimizing fall and winter burns (1 October – 31 January) to 25% or less of the sub-training area total acreage in order to maintain adequate cover and forage.

(b) Consulting with Senior Wildlife Biologist if this guideline cannot be applied due to logistical considerations.

(4) Prescribed fire implementation on an area of lower priority may occur if weather factors do not favor successful implementation or smoke management considerations on a prioritized block.

9. Burn type descriptions:

   a. Range Complex Fuel Reduction:

      (1) Purpose – Use of moderate intensity fire to reduce fuel accumulation, decreasing the risk of uncontrollable wildfire caused by live-fire training. This will result in minimizing disruption of live fire training caused by wildfire suppression activities or high-risk fire conditions. Additionally, this practice reduces the risk of wildfires escaping from the Impact Area or other installation boundary areas.

      (2) Preferred timing: 1 October – 14 April

      (3) Prescribed FDR = Moderate – Very High

   b. Maneuver Training Area Fuel Reduction:

      (1) Purpose - These low to moderate intensity burns are conducted to reduce the fuel load in areas with known accumulation of fuel. Reducing the available fuel will prevent severe losses if a wildfire should occur in these areas.

      (2) Preferred timing: 16 September – 14 April

      (3) Prescribed FDR = Low – Very High

   c. Vegetation Control:

      (1) Purpose - Apply fire of appropriate intensity to control underbrush and other vegetation for improvement in the visibility and accessibility of these sites to support the training mission.

      (2) Preferred timing: 01 February – 14 April

      (3) Prescribed FDR: Moderate – Very High

   d. Oak Regeneration / Site Preparation:

      (1) Purpose –Apply fire to reduce competing vegetation to favor establishment of oak seedlings and saplings, and to prepare a seedbed for oak and pine regeneration, and to encourage the successful establishment of other fire-tolerant or other desired tree species.

      (2) Preferred timing: 01 April – 14 April (summer season (01 July - 31 August*) burns may be used on select sites where greater control of competing vegetation is required.)

      (3) Prescribed FDR = Moderate – Very High

e. Wildlife Habitat Management:

(1) Purpose - Stimulate growth of native herbaceous vegetation, e.g., warm season grasses while reducing dead vegetation buildup to benefit wildlife, including quail and songbirds.

(2) Preferred timing: 01 January – 14 April

(3) Prescribed FDR = Moderate – Very High

10. Prescribed fire documents: Prescribed fire implementation requires extensive documentation for planning, information transfer, prescribed fire approval, personnel safety awareness, and event record archiving. Documents including site maps and daily prescribed fire plans are saved on the network and will be distributed as requested. The following describe documents generated annually and/or daily for prescribed fires:

a. Job Hazard Analysis (JHA) documents all hazards and mitigation requirements for the prescribed fire season. All wildland fire personnel are required to review and sign each JHA prior to the start of the annual prescribed fire season.

b. Site-specific prescribed fire plans are developed to document the following for each proposed prescribed burn site:

(1) Burn block identification, location, and map

(2) Goals and management objectives

(3) Prescribed and observed weather parameters

(4) Site hazards

(5) Fuel conditions and characteristics

(6) Implementation strategy (ignitions, holding, and mop-up)

(7) Required resources

(8) Resources to protect

(9) Smoke management plan

(10) Contingency plan

(11) Go/No-Go checklist

c. Notification roster documents all stakeholders notified through email, phone, or other alert system for each prescribed fire.

d. Deliberate Risk Assessment (DRA) (DD Form 2977) evaluates risk based on prescribed fire complexity, predicted weather parameters, site hazards, and available resources. A yearly, prescribed fire DRA is approved by the MDW O-6 Command representative.

e. Hot Work Permit (DA Form 5383) is generated to document prescribed fire action for DES Fire Department awareness for each prescribed fire.

f. Incident Action Plan (IAP) is developed for each prescribed fire to include incident objectives, incident safety message, resource assignment list, communication plan, medical plan, and expected weather conditions. The IAP is provided to prescribed fire crew members at the pre-burn briefing.

g. Pre-burn briefing checklist is developed by the designated Prescribed Burn Boss (RxB) on each prescribed fire to cover the objective, crew assignments, communications, safety protocols, burn strategy, contingency plan, and other logistics in the standardized format of Situation, Mission/Execution, Communications, Service/Support, Risk Management, Questions/Concerns.

h. Prescribed fire site map is developed for each burn block on the annual prescribed fire plan and may be adjusted prior to each prescribed fire based on newly acquired information, newly identified resources to protect, or newly identified hazards. Most current prescribed fire site map is provided to crews at the pre-burn briefing.

11. Stakeholder coordination: Due to the associated risks and cross-program area impacts, a high level of coordination needs to occur for successful prescribed fire implementation.

a. Coordination with DPTMS - Range Operations, DES - Fire Department, and DPW – Roads & Grounds will be done in advance to the greatest extent possible to avoid disruption of scheduled training, to ensure maximum resource availability, to ensure awareness of resources and structures requiring fire protection, and to ensure firebreak construction and maintenance are complete. Pre and Post-burn status updates will be provided to stakeholders including the Command group, Directors, ENRD Chief, Fire Chief, Range Operations Officer and PAO.

b. Coordination with DPW–ENRD will occur to ensure complete environmental reviews or surveys of each prescribed fire site and related firebreak work IAW National Environmental Policy Act (NEPA) requirements. Review areas include water quality, air quality, wildlife, soil and erosion, threatened and endangered species, cultural resources, and compliance. This effort ensures that potential impacts have been considered and mitigated and related Best Management Practices (BMPs) applied. Review/survey results and related mitigations are documented in the FAPH Natural Resource Site Assessment (NRSA) document and are on file and available for review as requested through ENRD - Forestry.

12. Resourcing:

a. Personnel

(1) Appropriate personnel requirements will be determined based on the location and the complexity of the planned prescribed fire, the IWFMP, and related policies and regulations. This will include, at minimum a crew of four (4)

personnel including the RxB (1), igniter (1) and holding crew (2) with brush truck.

(2) A DES Fire Department crew (4-5 personnel) with a brush truck may be available but is not required to implement prescribed fire operations.

(3) All personnel will have the minimum required training regarding their position within the prescribed fire operation. Refer to training qualifications outlined in the IWFMP. Any personnel on-site without proper qualifications or personnel protective equipment (PPE) will not participate in any active fire tasks. Personnel may remain on-site during prescribed fires at the discretion of the RxB.

b. Equipment

(1) Appropriate transportation will be available for on-site personnel.

(2) A fire plow will be staged on-site for each prescribed fire.

(3) Fire tools and ignition device requirements will be outlined in the IAP and prescribed fire plan and on-site prior to ignition.

(4) Adequate water supply and holding resources to be outlined in the IAP and prescribed fire plan and on-site prior to ignition.

c. Communications

(1) All personnel and/or crews to utilize a land mobile radio for primary communications.

(2) Communication procedures explained, frequency assignment communicated through IAP to include crew call signs, and radio check performed in conjunction with the pre-burn briefing.

(3) RxB maintains radio communications with Range Operations at all times during prescribed fire implementation.

(4) All on-site communications with crew bosses will occur through the RxB regardless of “home” directorate.

(5) Accomplishments and progress updates will be provided periodically throughout the season with an updated results map available.

d. Additional logistics

(1) RxB, or alternate designated by RxB, ensures all firebreaks are in appropriate, expected condition.

(2) Test fires will be routinely used to determine if fire behavior is as predicted and/or if stated objectives will be met. If test fire behavior or results are not as expected or desired, a prescribed fire may be cancelled until conditions for that site are more favorable, possibly later on the same day.

(3) Wildland fire crews will rendezvous at a location designated by RxB at conclusion of prescribed fire to conduct an After Action Review (AAR) prior to leaving site.

(4) Any personnel whether crew or “visitors” need to contact the designated RxB when arriving and departing the site for full accountability and awareness during firing operations.

(5) UXO, headlight use, PPE use, fire shelter use, and other safety considerations are communicated to crews during the pre-burn briefing and general annual safety refreshers. Any UXO discovered are reported to the RxB and Range Operations immediately. Crews are informed of UXO location, stand-off distance, and ignitions may be suspended to address all safety concerns.

(6) If visiting an active prescribed fire site, please use headlights at all times.

13. Planned prescribed fire acreage (maximum) by burn type:

BURN TYPE (Enclosure 1)	**MAXIMUM PLANNED ACRES**
Range Complex Fuel Reduction	23,640
Range Complex Vegetation Control	0
Maneuver Training Area Fuel Reduction	4,060
Maneuver Area Vegetation Control	8,019
Wildlife Habitat Management	1,721
Oak Regeneration	3,340
Site Preparation	305
TES Research	0
TOTAL ACREAGE	41,085
BURN PRIORITY LEVEL (Enclosure 2)	**PRIORITIZED ACRES**
High Priority Burn Blocks	19,241
Medium Priority Burn Blocks	12,787
Low Priority Burn Blocks	9,057

14. Additional information: Additional procedural and prescribed fire program details are available in the FAPH IWFMP or by contacting Chris McClelland (x8475; christopher.s.mcclelland.civ@mail.mil).

ENCLOSURE 1: FY 22 Prescribed Fire Annual Work Plan Map - Objective Type
ENCLOSURE 2: FY 22 Prescribed Fire Annual Work Plan Map - Priorities

FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

APPENDIX M: PRESCRIBED BURN DOCUMENTS

DAILY PRESCRIBED BURN PLAN

JOB HAZARD ANALYSIS

HOT-WORK PERMIT

FORT A.P HILL
PRESCRIBED FIRE PLAN APPROVAL

ADMINISTRATIVE UNIT NAME(S): _____

PRESCRIBED FIRE NAME:
Prescribed Fire Unit (Ignition Unit): _____

PREPARED BY:
Name (print): Chris McClelland Qualification/Currency: RxB2

Signature: _____ Date: _____

TECHNICAL REVIEW BY:
Name (print): Jason Applegate Title: Natural Resources Chief

Signature: _____ Date: _____

COMPLEXITY RATING: MODERATE

MINIMUM BURN BOSS QUALIFICATION: RxB2

APPROVED BY:
Name – Agency Administrator (print): Ben McBride

Signature – Agency Administrator: _____ Date: _____

Agency Administrator Ignition Authorization

Instructions: The Agency Administrator Ignition Authorization must be completed before a prescribed fire can be implemented. If ignition of the prescribed fire is not initiated prior to expiration date determined by the agency administrator, a new authorization will be required.

Prior to signature the agency administrator should discuss the following key items with the burn boss. Attach any additional instructions or discussion documentation (optional) to this document.

Key Discussion Items

A.	Has anything changed since the Prescribed Fire Plan was approved or revalidated? *Such as drought or other climate indicators of increased risk, insect activity, new subdivisions/structures, smoke requirements, Complexity Analysis Rating.*
B.	Have compliance requirements and pre-burn considerations been completed? *Such as preparation work, NEPA mitigation requirements, cultural, threatened and endangered species, permits,*
C.	Can all of the elements and conditions specified in Prescribed Fire Plan be met? *Such as weather, scheduling, smoke management conditions, suitable prescription window, correct season, staffing and organization, safety considerations, etc.*
D.	Are processes in place to ensure all internal and external notifications and media releases will be completed?
E.	Have key agency staffs been fully briefed about the implementation of this prescribed fire?
F.	Are there circumstances that could affect the successful implementation of the plan? *Such as preparedness level restrictions, resource availability, other prescribed fire or wildfire activity*
G.	Have you communicated your expectations to the Burn Boss regarding if and when you are to be notified that contingency actions are being taken?
H.	Have you communicated your expectations to the Burn Boss regarding decisions to declare the prescribed fire a wildfire?

Implementation Recommended by:
Prescribed Fire Burn Boss Signature: _____ Date:_____

I am authorizing ignition of this prescribed fire between the dates of _____ and _____. It is my expectation that the project will be implemented within this time frame and as discussed and documented and attached to this plan. If the conditions we discussed change during this time frame, it is my expectation you will brief me on the circumstances and an updated authorization will be negotiated if necessary.

Additional Instructions or Discussion Documentation attached (Optional): Yes ☐ No☐

Ignition Authorized by:
Agency Administrator Signature and Title:_____Date:_____

Prescribed Fire Go/No-Go Checklist

Preliminary Questions	Circle YES or NO
A. Have conditions in or adjacent to the ignition unit changed, (for example: drought conditions or fuel loadings), which were not considered in the prescription development? If **NO** proceed with the Go/NO-GO Checklist below, if **YES** go to item B.	YES NO
B. Has the prescribed fire plan been reviewed and an amendment been approved; or has it been determined that no amendment is necessary? If **YES**, proceed with checklist below. If **NO, STOP: Implementation is not allowed. An amendment is needed.**	YES NO

GO/NO-GO Checklist	Circle YES or NO
Have ALL permits and clearances been obtained?	YES NO
Have ALL the required notifications been made?	YES NO
Have ALL the pre-burn considerations and preparation work identified in the prescribed fire plan been completed or addressed and checked?	YES NO
Have ALL required current and projected fire weather forecast been obtained and are they favorable?	YES NO
Are ALL prescription parameters met?	YES NO
Are ALL smoke management specifications met?	YES NO
Are ALL planned operations personnel and equipment on-site, available and operational?	YES NO
Has the availability of contingency resources applicable to today's implementation been checked and are they available?	YES NO
Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones?	YES NO

If all the questions were answered "**YES**" proceed with a test fire. Document the current conditions, location and results. If any questions were answered "**NO**", DO NOT proceed with the test fire: Implementation is not allowed.

After evaluating the test fire, in your judgment can the prescribed fire be carried out according to the prescribed fire plan and will it meet the planned objective? **Circle: YES or NO**

Burn Boss Signature:_____Date:_____

Complexity Analysis Summary and Final Complexity

Replace this page with the signed:
Summary and Final Complexity Worksheet
PMS 424-1

The worksheet is a separate file that needs to be copied and pasted from *Summary and Final Complexity Worksheet*, PMS 424-1. On the completed worksheet; highlight the entire worksheet area to be copied, right click, click on 'copy'. On this page, delete this text, right click, choose 'picture' as a paste option, and resize as necessary to fit to page.

Description of Prescribed Fire Area

A. Physical Description

1. Location:

2. Size:

3. Topography:

4. Ignition units:

B. Vegetation/Fuels Description:

1. Fuel model(s):

2. Adjacent fuel model(s):

3. Fuel conditions and characteristics:

C. Description of Unique Features, Natural Resources, Values:

D. Prescribed Fire Documents - Attached

1. Maps: Overview and Burn Block(s)
2. Incident Action Plan (IAP)
3. Spot Forecast
4. Hot-Work Permit

Objectives

A. Prescribed Fire Objective(s):

Prescription

A. Prescription Narrative:

1. Describe how fire behavior will meet objectives

B. Prescription Parameters:

1. Environmental or fire behavior (or both)

Scheduling

A. Implementation Schedule:

1. Ignition Time Frames or Season(s) (or both)

B. Projected Duration:

C. Constraints:

Pre-burn Considerations and Weather

A. Considerations:

1. On-site:

2. Off-site:

B. Method and Frequency for Obtaining Weather and Smoke Management Forecast(s):

C. Notifications:

Pre-Burn Briefing

A. Briefing Checklist; including, but not limited to: (additional items may be added)

- ☐ Burn organization and assignments
- ☐ Prescribed Fire objectives and prescription
- ☐ Description of prescribed fire project area
- ☐ Expected weather and fire behavior
- ☐ Communications
- ☐ Ignition plan
- ☐ Holding plan
- ☐ Contingency plan and assignments
- ☐ Wildfire declaration
- ☐ Safety and medical plan
- ☐ Questions/Concerns

Organization and Equipment

A. Positions:

B. Equipment:

C. Supplies:

Communication

A. Radio Frequencies:

1. Command talk group(s):

2. Tactical talk group(s):

3. Air operations talk group(s):

B. Call Signs & Telephone Numbers:

Public and Personnel Safety, Medical

A. Safety Hazards:

B. Mitigation: Measures Taken to Reduce the Hazards:

C. Emergency Medical Procedures:

D. Emergency Evacuation Methods:

E. Emergency Facilities:

Test Fire

A. Planned Location:

B. Test Fire Documentation:

1. Weather conditions on-site

2. Test fire results

Ignition Plan

A. Firing Methods:

1. Techniques, sequences and patterns:

B. Devices:

C. Minimum Ignition Staffing:

Holding Plan

A. General Procedures for Holding:

B. Critical Holding Points and Actions:

C. Minimum Organization or Capabilities Needed:

Contingency Plan

A. Actions Needed:

B. Site Specific Trigger Points:

Wildfire Declaration

A. Wildfire Declared By:

B. IC Assignment:

C. Notifications:

Smoke Management and Air Quality

A. Compliance:

B. Permits to be Obtained:

C. Smoke-Sensitive Receptors:

D. Potential Impacted Areas:

E. Mitigation Strategies and Techniques to Reduce Smoke Impacts:

Monitoring

A. Weather Monitoring (Forecasted and Observed) Required and Procedures:

B. Fire Behavior Monitoring Required and Procedures:

C. Monitoring Required to Ensure that Prescribed Fire Plan Objectives are Met:

D. Smoke Dispersal Monitoring Required and Procedures:

Post-burn Activities and AAR

A. Post-Burn Activities:

B. AAR Discussion and Comments:

JOB HAZARD ANALYSIS	JOB TITLE OR OPERATION Ignition Operations	PAGE 1 OF 5 JHA NO. 11	DATE: 20190627	☑ NEW REVISED
INSTRUCTIONS ON REVERSE SIDE	EMPLOYEE/OPERATOR Forestry Personnel	SUPERVISOR: T. Banks	ANALYSIS BY: C. McClelland	
COMPANY/ORGANIZATION: DOD	PLANT/LOCATION: FAPH	DEPARTMENT: DPW-ENRD-Forestry	REVIEWED BY: C. McClelland	
REQUIRED AND/OR RECOMMENDED **PERSONAL PROTECTIVE EQUIPMENT:** Eye & Hearing Protection, Safety Glasses/Goggles, Long-Sleeve Shirt, Pants, 8” Leather Boots, Gloves			APPROVED BY: T. Banks	

SEQUENCE OF BASIC JOB STEPS	POTENIAL HAZARDS UNSAFE ACTS OF WORK CONDITIONS	RECOMMENDED ACTION OR PROCEDURE
ATV Torch Operation	Transportation of combustible fuels and actively burning fuels – ATV catches on fire or fire is ignited in unintended area. Personal injury from handling fuel/fire.	Maintain situational awareness. Ensure operator is constantly aware of torch location and condition. Operator needs to have a clear understanding of ignition instructions. During transportation, the torch will be disconnected from the ATV power source and all valves will be in the "Off" position. Ensure torch is properly mounted and properly secured to ATV prior to use. Wear appropriate PPE when handling fuel and igniting the torch.
	Refueling the ATV and Torch – Starting a fire from spilled fuel – ATV catches fire. Fire spreads to surrounding/unintended area.	If possible, allow engine to cool before refueling ATV. Refuel in a clean area on bare soil or gravel. Refuel at a distance not less than 10-feet from an open flame or potential ignition source. Use approved fuel can. Wipe fuel spills from the ATV. Ensure transfer tank is grounded/bonded to vehicle chassis or other metal surface. When refueling the torch, ensure operator footing is secured to either the ground or ATV. Move at least 10-feet from fueling spot before starting torch pump and igniting the torch. Review SDS for gas and diesel. Wear proper PPE.
	Fuel splashing or spilling – Personal injury to include eye, dermatitis, inhalation.	Wear proper PPE. Do not lean over fuel tank or torch tank while dispensing fuel. Dispense fuel slowly to avoid spills/splashing.
Terra Torch Operation	Mounting/Dismounting skid unit on/off pickup truck – Heavy lifting can cause injury to personnel.	If possible, use a forklift or tractor with forks to mount and dismount skid unit. If forklift or tractor is unavailable, at least 4 people are required to mount/dismount the skid unit. Use proper lifting techniques. Ensure torch is empty prior to moving.

	Transporting Terra Torch – Skid unit falls off of truck while driving/operating torch – Can cause damage to equipment, roadway, and other vehicles/equipment. Injury to personnel operating torch.	Ensure Terra Torch is properly secured to bed of pickup truck before moving/operating torch.
	Operator Mounting/Dismounting Terra Torch Truck – Slips, trips, and falls – Injury to personnel.	Ensure proper footing when mounting/dismounting Terra Torch truck. Always have 3-points of contact. If possible, operator should wear non-slip sole boots.
	Operator Seating – Slips, trips, falls, seat becomes loose – Injury to personnel.	Ensure seat is properly mounted and secured to truck bed. Ensure restraint system is available and working. Seat belts need to be enabled with quick release buckle. Seat belt must be worn at all times.
	Fuel Mixing – Fuel splashing, static build-up/sparking – Inhalation hazard, personal injury, damage to equipment.	Complete Terra Torch Operator Training.
	Pump Operation – Incorrect starting procedure, moving engine parts – Can cause injury to personnel and damage to equipment.	Complete Terra Torch Operator Training.
	Torch Operation – Burns/Fires from gelled fuel, Operator fatigue – Serious injury to personnel.	Complete Terra Torch Operator Training. Maintain situational awareness of Operator/Torch Operator. Ensure work-to-rest ratios are being applied. Avoid long exposure to fire/burning vegetation.
	Maintenance – Fuel spills/leaks, storage – fire hazard, moving engine parts – Personnel injury and equipment damage.	Complete Terra Torch Operator Training.
Sphere Launcher Operation	Loading Launcher – Chemical	Read and understand operator's manual. Wear proper PPE.

	components leaking, inhalation hazard, moving parts – Personnel injury and equipment damage.	Use correct spheres and keep them contained in proper container. Inspect spheres for cracks before using. Discard damaged spheres appropriately. Fill glycol container in a well-ventilated area.
	Launcher and Sphere Transportation – Unintentional chemical component mixing, damage to equipment – Fire, injury to personnel.	Ensure launcher is securely fastened in storage box. Keep fuel components separated. Glycol and spheres should never be transported in the same container.
	Launcher Operation – Chemical burns, moving parts, sphere launch failure, working around other personnel – Injury to personnel, burns, equipment damage.	Ensure items are clear of moving parts (fingers). Clean up spills as necessary. Avoid direct contact with chemicals – rinse exposed skin as soon as possible. Keep the launcher pointed in a safe direction. Be aware of all personnel locations prior to launching spheres. Understand how to clear launcher of a jam if one occurs. Wear proper PPE.
	Maintenance – Chemical burns, moving parts – Injury to personnel, damage to equipment.	To ensure proper functioning of launcher, clean launcher after each use to remove chemicals, debris, and dirt. If chemicals come in contact with exposed skin, immediately rinse skin. Be aware of moving parts to avoid pinching fingers.
	Storage – Fire hazard – Injury to personnel, damage to equipment.	Ensure launcher is properly stored in storage box. Ensure that the spheres and glycol are stored in separate containers/boxes. Ensure launcher has been properly cleaned before storage. Read SDS pertaining to glycol and spheres.
Drip Torch Operations	Drip Torch Operation – Burns, fuel spills/leaks – Injury to personnel, damage to equipment.	Always dispense fuel in a safe direction. Ensure lighting instructions are understood and confirmed. Hold drip torch away from body. If drip torch becomes engulfed in flames, do not try and put it out. Place the drip torch in a safe position and request assistance from a holding resource to extinguish the flames. If torch is spitting fuel, hold torch in a safe direction. Try to use the remaining fuel. If unable to use the remaining fuel, cease burning operations and try another torch. Use safe

		lighting procedures when igniting the torch. Report deficiencies. Wear proper PPE.
	Refueling Drip Torch – Spills/Leaks, inhalation hazards – Injury to personnel.	Refuel in a clean area on bare soil or gravel. Always place the drip torch on the ground prior to refueling. Ensure drip torch is on level ground to avoid tipping the drip torch. Refuel at a distance not less than 10-feet from an open flame or potential ignition source. Wipe fuel spills from the drip torch. Ensure transfer tank is grounded/bonded to vehicle chassis or other metal surface. Move at least 10-feet from fueling spot before igniting the drip torch. Avoid leaning over drip torch while fueling to avoid inhalation hazard. Review SDS for gas and diesel. Wear proper PPE.
	Transportation/Storage –Spills/Leaks, combustible fuels – Injury to personnel, damage to equipment.	Ensure drip torches are properly stored prior to transportation. Clean up all spills and leaks as soon as they are noticed. Ensure storage areas are properly ventilated. Properly break down drip torches before storing them for the day/season.
	Maintenance – Spills/Leaks, Exposure to fuels – Injury to personnel.	Ensure drip torches are properly maintained to ensure proper working order. Clean up all spills/leaks as they occur. If fuels are exposed to skin, rinse skin immediately. Wear proper PPE.
Fusee Operation	Igniting the Fusee – Burns, chemical burns, and eye damage – Injury to personnel.	Ensure fusee is pointed in a safe direction. Use the provided striker to light the fusee. Wear proper PPE to avoid getting slag onto hands/clothing. Avoid staring at lit fusee. Hold fusee away from body.
	Transportation/Stroage – Fuseess become contaminated with other substances, damage to equipment – Injury to personnel.	Ensure fusees are properly stored. Keep fusess clean and free of debris. Discard damaged fusees.
Ignition Operations	Familiarity with Burn Block/Area – Igniting the wrong burn block/area, lost	Personnel should be comfortable reading a map. Utilize drop points (cones) to determine location on a map. Ensure all

	personnel.	major intersections are labeled on the map and on the ground with drop points (cones). Maintain situational awareness and radio contact with burning personnel.
	Ignition sequence/timing – Entrapment, burning instructions not understood.	Ensure personnel are familiar with ignition techniques and only ignite fuel when told to do so. Maintain situational awareness when igniting. Always wear proper PPE and carry the required fire shelter.
	Holes, debris, uneven terrain, falling trees/branches – Slips, trips, falls, personal injury.	Maintain situational awareness (footing, surroundings). Maintain radio communications.
	Biting/Venomous insects, spiders, and wildlife. Poisonous plants – Personal injury, allergic reactions, and bacterial infections.	Maintain situational awareness. Do self-checks for ticks (During and at the end of the day). Carry necessary allergy medications. Wash skin exposed to poisonous plants. Stay calm if bitten. Maintain radio communications.
	Unexploded Ordinance (UXO) and Live-Fire Hazards – Personal injury, death, and property damage.	Maintain radio communications (Primarily w/ Range Control). Always know where you are – What CA? On-the-ground location? Coordinate activities and movements w/ Range control. Follow all directions provided by Range Control. Complete UXO Awareness Training. DO NOT DISTURB UXOs (Even if it is assumed to be a DUD). If UXO is found, follow **3 Rs** Procedure: **R**ecognize, **R**etreat, **R**eport to Range Control.
	Weather – Heat/Cold injury, personal injury.	Wear proper protective gear/weather-appropriate clothing for environmental conditions. Take breaks as needed – warm up/cool down (Review work/rest ratios). Drink plenty of water.

HOT-WORK PERMIT

For use of this form, see AR 420-1; the proponent agency is ACSIM.

1. LOCATION	2. DATE	3. PERMIT NO.
4. TYPE OF WORK	5. START TIME	6. FINISH TIME
7.a. NAME OF PERSON RESPONSIBLE FOR HOT-WORK AT JOB SITE *(Contractor/Government Employee)*	7.b. SIGNATURE	

PRECAUTIONS BEFORE OPERATIONS

CHECKLIST	CHECK ONE YES	CHECK ONE NO
8. Did Fire Department Inspector inspect site?	☐	☐
9. Are there procedures for Fire Department emergency notification? *(Emergency No.)*	☐	☐
10. Are combustibles in area noted?	☐	☐
11. Should combustibles be covered? *(If yes, note in remarks)*	☐	☐
12. Are proper extinguishers on hand?	☐	☐
13. Is wet-down necessary? *(If yes, note in remarks)*	☐	☐
14. Is smoking permissible at work sites?	☐	☐
15. Is continuous fire watch required?	☐	☐
16. Is Fire Department standby required?	☐	☐
17. Are other precautions required? *(If yes, note in remarks)*	☐	☐

18.a. FIRE DEPARTMENT INSPECTOR'S SIGNATURE	18.b. DATE

PRECAUTIONS AFTER OPERATIONS

CHECKLIST	CHECK ONE YES	CHECK ONE NO
19.a. Was Fire Department notified after hot-work operation was completed?	☐	☐
19.b. Time:		
20.a. Did Fire Department inspector inspect work site?	☐	☐
20.b. Time:		
21. Are after work conditions safe? *(If no, note in remarks)*	☐	☐
22. Are heat producing devices safe if left at work site?	☐	☐

23.a. FIRE DEPARTMENT INSPECTOR'S SIGNATURE	23.b. DATE

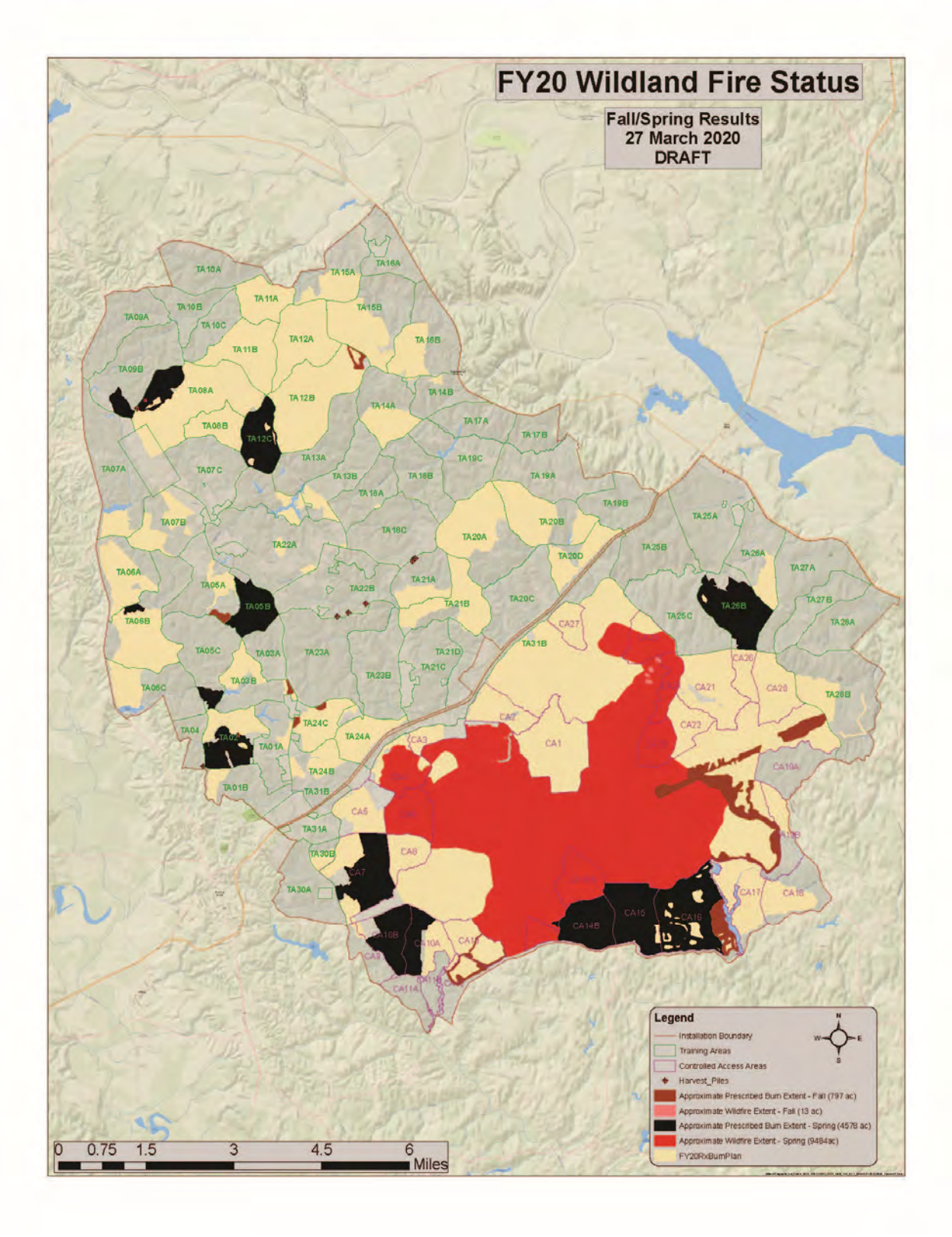
24. REMARKS

NOTE: PERMIT VALID ON DAY OF OPERATION AT ONE LOCATION ONLY

DA FORM 5383, JAN 2009 PREVIOUS EDITIONS ARE OBSOLETE APD LC v1.00

FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

APPENDIX N: WILDLAND FIRE STATUS MAP


FY20 Wildland Fire Status
Fall/Spring Results
27 March 2020
DRAFT
Legend
Installation Boundary
Training Areas
Controlled Access Areas
Harvest_Piles
Approximate Prescribed Burn Extent - Fall (797 ac)
Approximate Wildfire Extent - Fall (13 ac)
Approximate Prescribed Burn Extent - Spring (4578 ac)
Approximate Wildfire Extent - Spring (9484ac)
FY20RxBurnPlan
0 0.75 1.5 3 4.5 6
Miles

FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

APPENDIX O: IWFMP INTERNAL DISTRIBUTION LIST

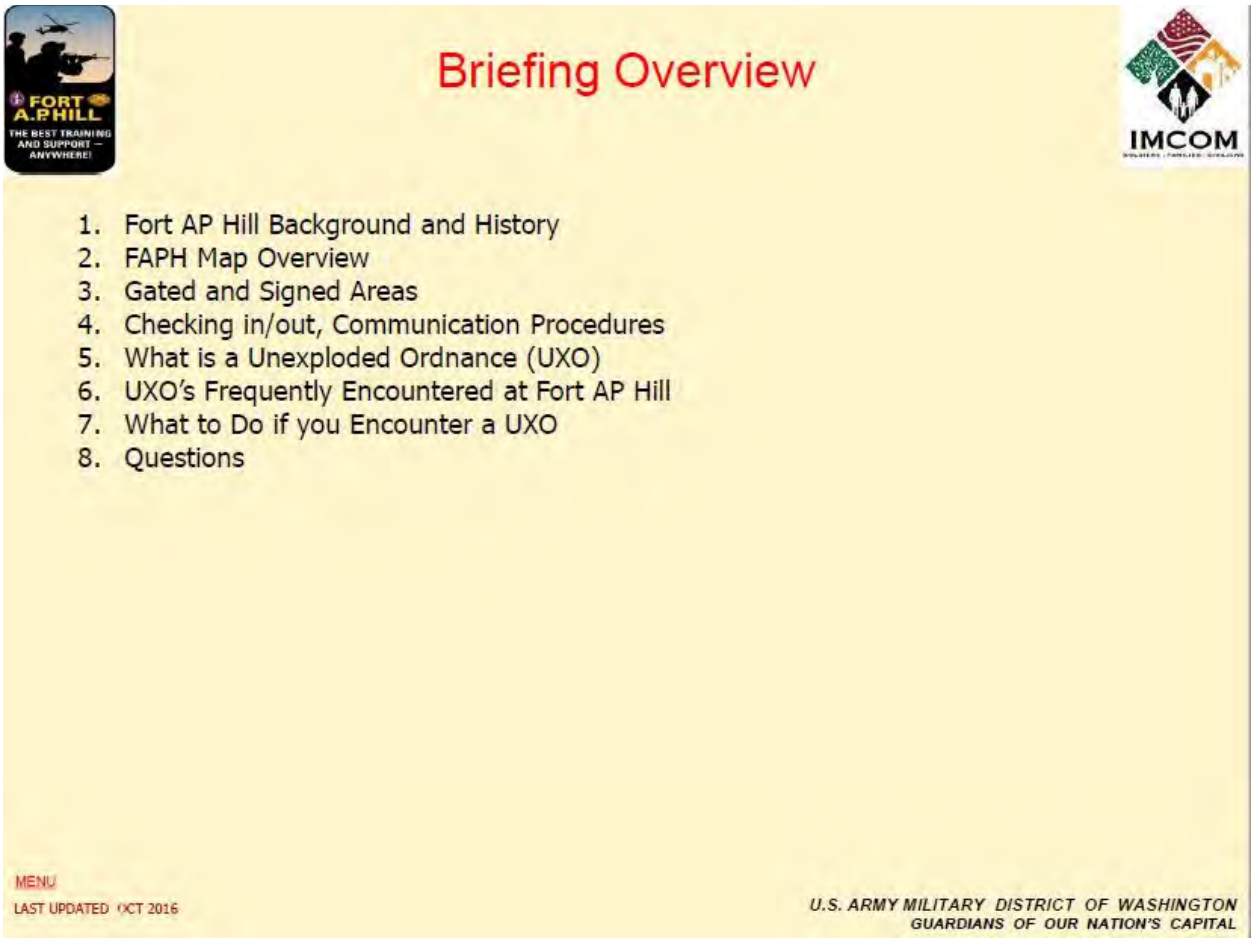
IWFMP Internal Distribution List:

Fort A.P. Hill Command Group	3 copies
Directorate of Emergency Services	
Director	1 copy
Police Chief	1 copy
Fire Chief	4 copies
Directorate of Plans, Training, Mobilization and Security	
Director	1 copy
Range Control	2 copies
Emergency Operations Center	2 copies
Directorate of Public Works	
Director	1 copy
Environmental and Natural Resources Division	1 copy
Forestry Branch	1 copy
Operations & Maintenance Division	1 copy
Roads & Grounds	1 copy
Directorate of Logistics	
Director	1 copy
Safety Office	1 copy
Public Affairs Office	1 copy

FORT A.P. HILL
INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

APPENDIX P: UXO BRIEFING


BOOM
FT. AP HILL
Range Operations
EXPLOSION
UNEXPLODED ORDNANCE
(UXO)
AWARENESS BRIEFING
UXO, Dud, Training Round, War Trophy, Souvenir
NO MATTER WHAT YOU CALL THEM, THEY CAN BE DEADLY!
Recognize
Retreat
Report
Follow the 3Rs
MENU
LAST UPDATED OCT 2016
U.S. ARMY MILITARY DISTRICT OF WASHINGTON
GUARDIANS OF OUR NATION'S CAPITAL


FORT A.P HILL
THE BEST TRAINING AND SUPPORT – ANYWHERE!
Briefing Overview
IMCOM
1. Fort AP Hill Background and History
2. FAPH Map Overview
3. Gated and Signed Areas
4. Checking in/out, Communication Procedures
5. What is a Unexploded Ordnance (UXO)
6. UXO's Frequently Encountered at Fort AP Hill
7. What to Do if you Encounter a UXO
8. Questions
MENU
LAST UPDATED OCT 2016
U.S. ARMY MILITARY DISTRICT OF WASHINGTON
GUARDIANS OF OUR NATION'S CAPITAL

Fort AP Hill History

Fort AP Hill was established as an Army Training facility on June 11, 1941. In its first Year, The installation was used as maneuver space for the II Army Corps and for three (3) Activated National Guard Divisions. In the autumn of 1942, Fort AP Hill was the staging Area General Patton's Task Force A. Throughout WWII, the Post continued to be a Training site for Corps and Division Size Units, remaining an active training Platform through the Korean and Vietnam wars. Recent decades have shown an Increase in troop throughput as hundreds of units rotated through Fort AP Hill preparing For deployment for such operations as Desert Shield, Desert Storm, or missions in Bosnia Herzegovina, Kosovo, Afghanistan, Iraq and other destinations associated with the GWOT. The past approximate 75 years have seen, countless munitions fired on the installation, Many of which were not accurately recorded. As a result, it is possible to encounter UXO Abroad the installation. Hopefully this briefing will assist you recognizing and reacting to the dangers of Unexploded Ordnance.

MENU

LAST UPDATED OCT 2016

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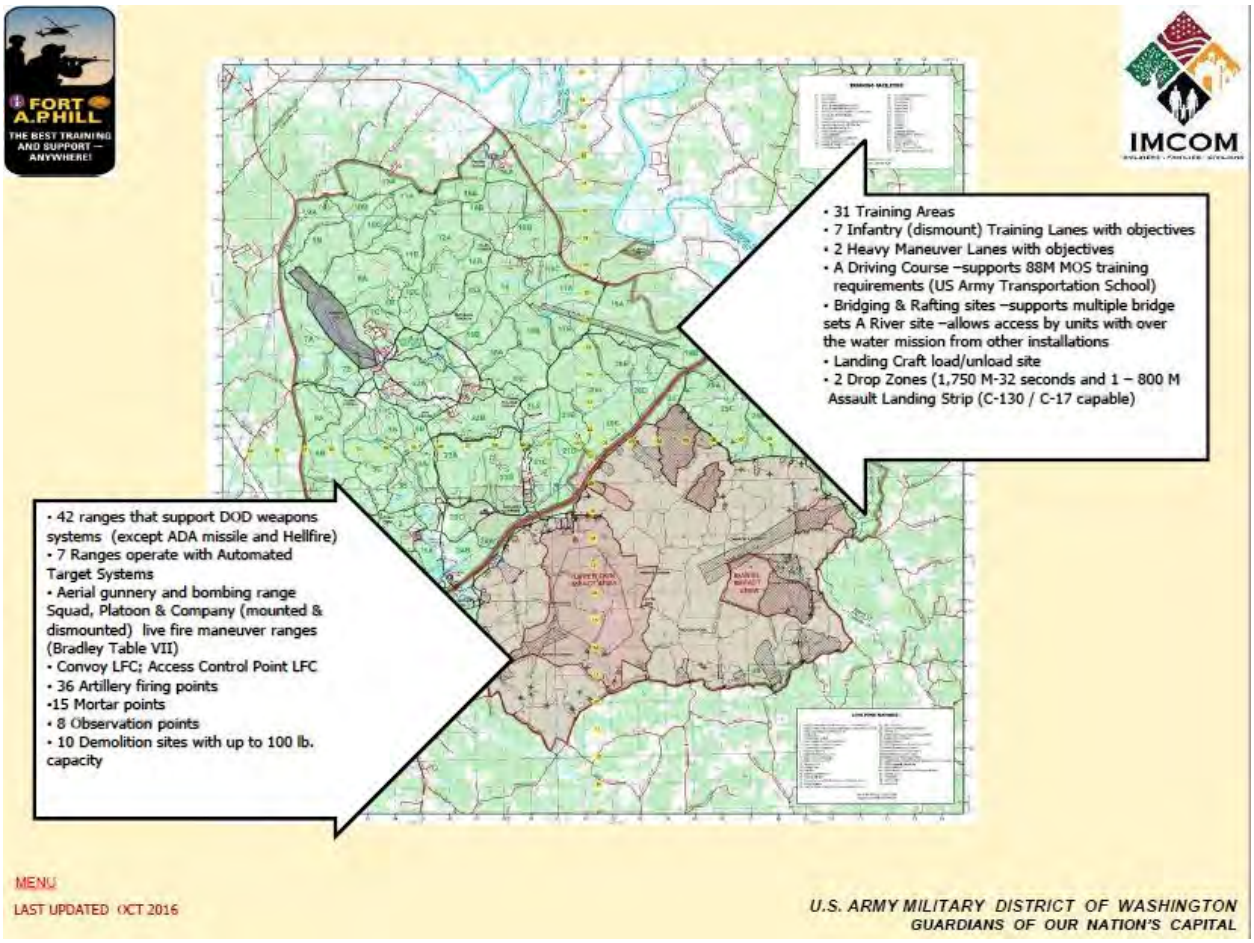
GUARDIANS OF OUR NATION'S CAPITAL


FORT A.P.HILL
THE BEST TRAINING AND SUPPORT – ANYWHERE!
IMCOM
• 31 Training Areas
• 7 Infantry (dismount) Training Lanes with objectives
• 2 Heavy Maneuver Lanes with objectives
• A Driving Course –supports 88M MOS training requirements (US Army Transportation School)
• Bridging & Rafting sites –supports multiple bridge sets A River site –allows access by units with over the water mission from other installations
• Landing Craft load/unload site
• 2 Drop Zones (1,750 M-32 seconds and 1 – 800 M Assault Landing Strip (C-130 / C-17 capable)
• 42 ranges that support DOD weapons systems (except ADA missile and Hellfire)
• 7 Ranges operate with Automated Target Systems
• Aerial gunnery and bombing range Squad, Platoon & Company (mounted & dismounted) live fire maneuver ranges (Bradley Table VII)
• Convoy LFC; Access Control Point LFC
• 36 Artillery firing points
•15 Mortar points
• 8 Observation points
• 10 Demolition sites with up to 100 lb. capacity
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Gated Areas and Signage

Barriers and Signage

The access routes to all ranges and impact areas at Fort AP Hill are gated. At no point should you access a gated area without Clearance from Range Operations. These areas are gated and signed for your protection and designed to prevent access into an active Surface Danger Zone or an area that is likely or known to contain unexploded ordnance. In the event you encounter an unsecure gate, please contact the Range Operations Fire Desk Immediately !

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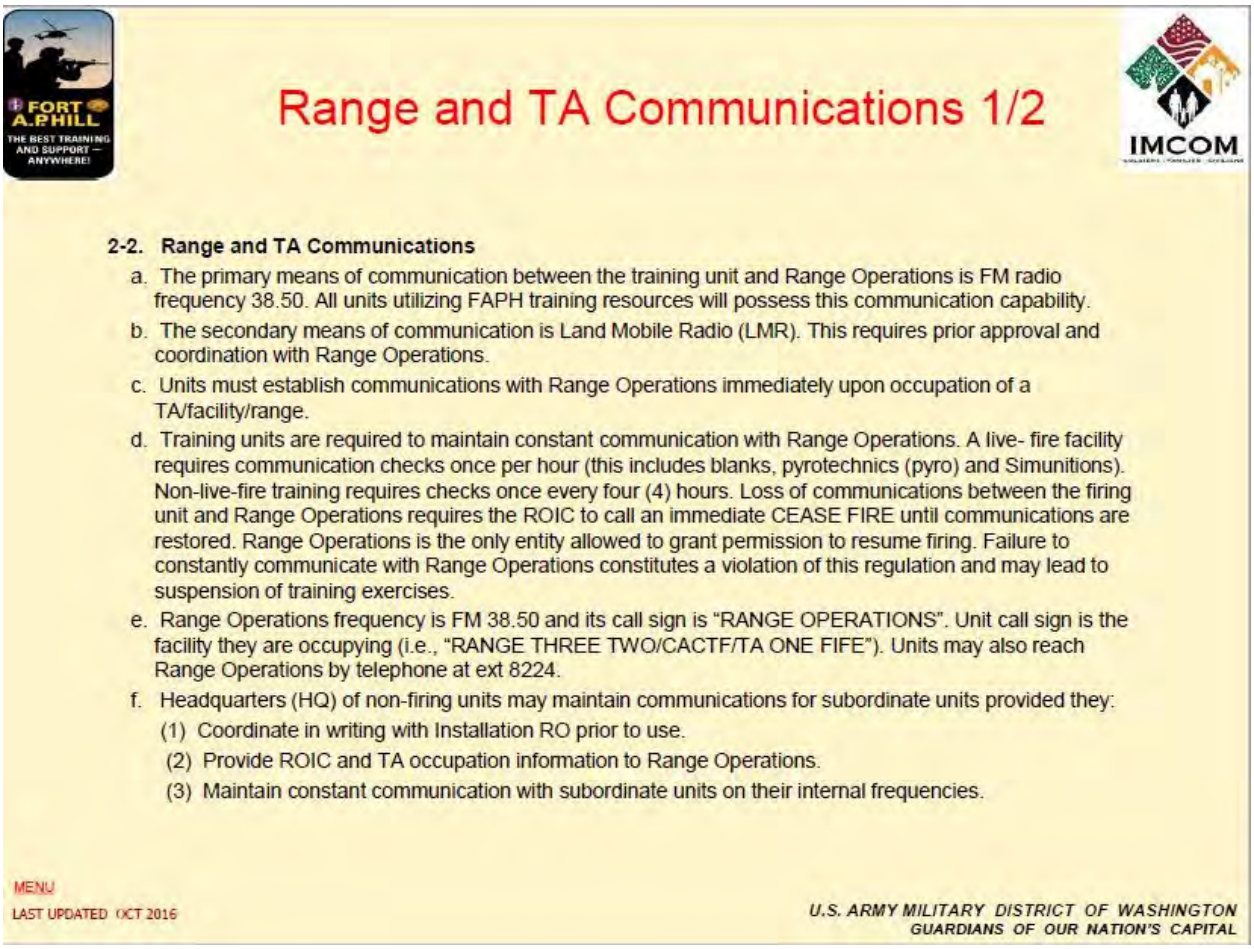
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Range and TA Communications 1/2
IMCOM
2-2. Range and TA Communications
a. The primary means of communication between the training unit and Range Operations is FM radio frequency 38.50. All units utilizing FAPH training resources will possess this communication capability.
b. The secondary means of communication is Land Mobile Radio (LMR). This requires prior approval and coordination with Range Operations.
c. Units must establish communications with Range Operations immediately upon occupation of a TA/facility/range.
d. Training units are required to maintain constant communication with Range Operations. A live- fire facility requires communication checks once per hour (this includes blanks, pyrotechnics (pyro) and Simunitions). Non-live-fire training requires checks once every four (4) hours. Loss of communications between the firing unit and Range Operations requires the ROIC to call an immediate CEASE FIRE until communications are restored. Range Operations is the only entity allowed to grant permission to resume firing. Failure to constantly communicate with Range Operations constitutes a violation of this regulation and may lead to suspension of training exercises.
e. Range Operations frequency is FM 38.50 and its call sign is "RANGE OPERATIONS". Unit call sign is the facility they are occupying (i.e., "RANGE THREE TWO/CACTF/TA ONE FIFE"). Units may also reach Range Operations by telephone at ext 8224.
f. Headquarters (HQ) of non-firing units may maintain communications for subordinate units provided they:
(1) Coordinate in writing with Installation RO prior to use.
(2) Provide ROIC and TA occupation information to Range Operations.
(3) Maintain constant communication with subordinate units on their internal frequencies.
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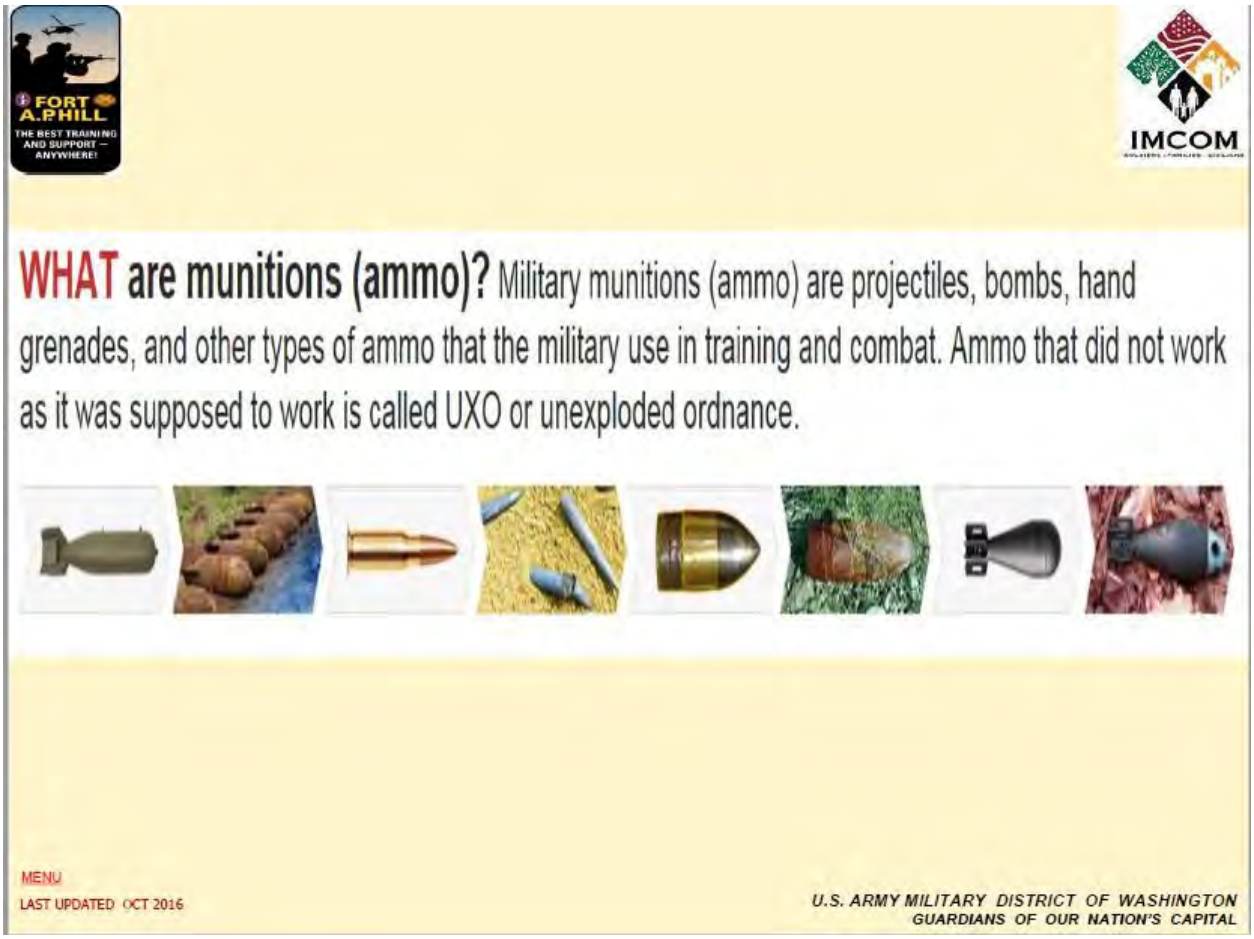
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WHAT are munitions (ammo)? Military munitions (ammo) are projectiles, bombs, hand grenades, and other types of ammo that the military use in training and combat. Ammo that did not work as it was supposed to work is called UXO or unexploded ordnance.
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What is a UXO ?

Unexploded ordnance or **UXO**s are explosive weapons (bombs, bullets, shells, grenades, land mines etc that did not explode when they were employed and still pose a risk of detonation, potentially many decades after they were used or discarded. Unexploded ordnance from at least as far back as the American Civil War still poses a hazard worldwide, both in current and former combat areas and on military firing ranges. A major problem with unexploded ordnance is that over the years the detonator and main charge deteriorate, frequently making them more sensitive to disturbance, and therefore more dangerous to handle. There are countless examples of people tampering with unexploded ordnance that is many years old - often with fatal results. Believing it to be harmless they handle the device and it explodes, killing or severely injuring them. For this reason it is required that unexploded ordnance should not be touched or handled by unqualified persons. Instead, the location should be reported to Range Operations so that Explosive Ordnance Disposal (EOD) professionals can render it safe.

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Unexploded Ordnance (UXO)

6-2. Duds

All duds and unexploded ordinance (UXO) are to be considered extremely hazardous and will not be disturbed. The location of any dud found along the boundary of or outside the impact area will be clearly
marked and immediately reported to Range Operations by grid coordinates. They will also be clearly marked by stakes no closer than three (3) meters from the dud surrounding it in a triangular pattern. The stakes will be connected by some clearly distinguishable tape or other material. A unit point of contact (POC) will remain in the area to guide Explosive Ordnance Demolition (EOD) or Range personnel upon arrival to evaluate and dispose of the item.

a. Prior to the arrival of EOD, ROIC/RSO will have 100% accountability of all personnel.
b. When EOD arrives on scene they will be met by ROIC/RSO.
c. The senior EOD technician on-site will be in charge of the site, regardless of rank.
d. To ensure safety during night operations, EOD will need to relax light and noise discipline for the minimum period required to perform EOD procedures.

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Unexploded Ordnance

- ***Never*** **assume BLUE painted UXO is safe! Blue ammunition means "TRAINING", not "INERT". Many blue training munitions can kill. Supervise your personnel**

1) **The removal of any ammunition whether training or live, is strictly prohibited and punishable under law.** The ROIC/RSO must include information on UXO during their safety briefing to all personnel prior to utilizing any range facility on Fort A. P. Hill. Appendix B of this regulation contains the standard UXO briefing.

2) **If UXO is found, a 10m perimeter should be marked off with engineer tape and the location should be reported immediately to Range Operations.** (Do not under any circumstances drive anything into the ground adjacent.)

3) A unit representative who knows the exact location of the UXO should remain at the site until a Range Operations representative arrives. The unit representative will be released as soon as Range Operations has positively identified the location. Provide a grid if possible!

Recognize
Retreat
Report

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WHY do I need to know? Ammo can cause serious injury or death if approached, touched, moved or disturbed.

About 3Rs Explosives Safety Education

Munitions are designed to be dangerous. Military personnel use our lands and waters across the United States for live-fire training and testing to defend our nation. As a result, ammo may be present on both land and in the water. No matter what you call it — ammo, explosives, UXO, duds or souvenirs — remember munitions are dangerous and can explode if approached, touched, moved or disturbed. By visiting this website, learning and following the **3Rs (Recognize, Retreat, Report)** of Explosives Safety, you will help **protect yourself, your family, friends and community** from the potential dangers associated with the presence of munitions.

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HOW can I be safe? Follow the 3Rs of Explosives Safety.
Recognize - when you may have encountered a munition and that munitions are dangerous.
Retreat - do not approach, touch, move or disturb it, but carefully leave the area.
Report - call 911 and advise the police of what you saw and where you saw it.
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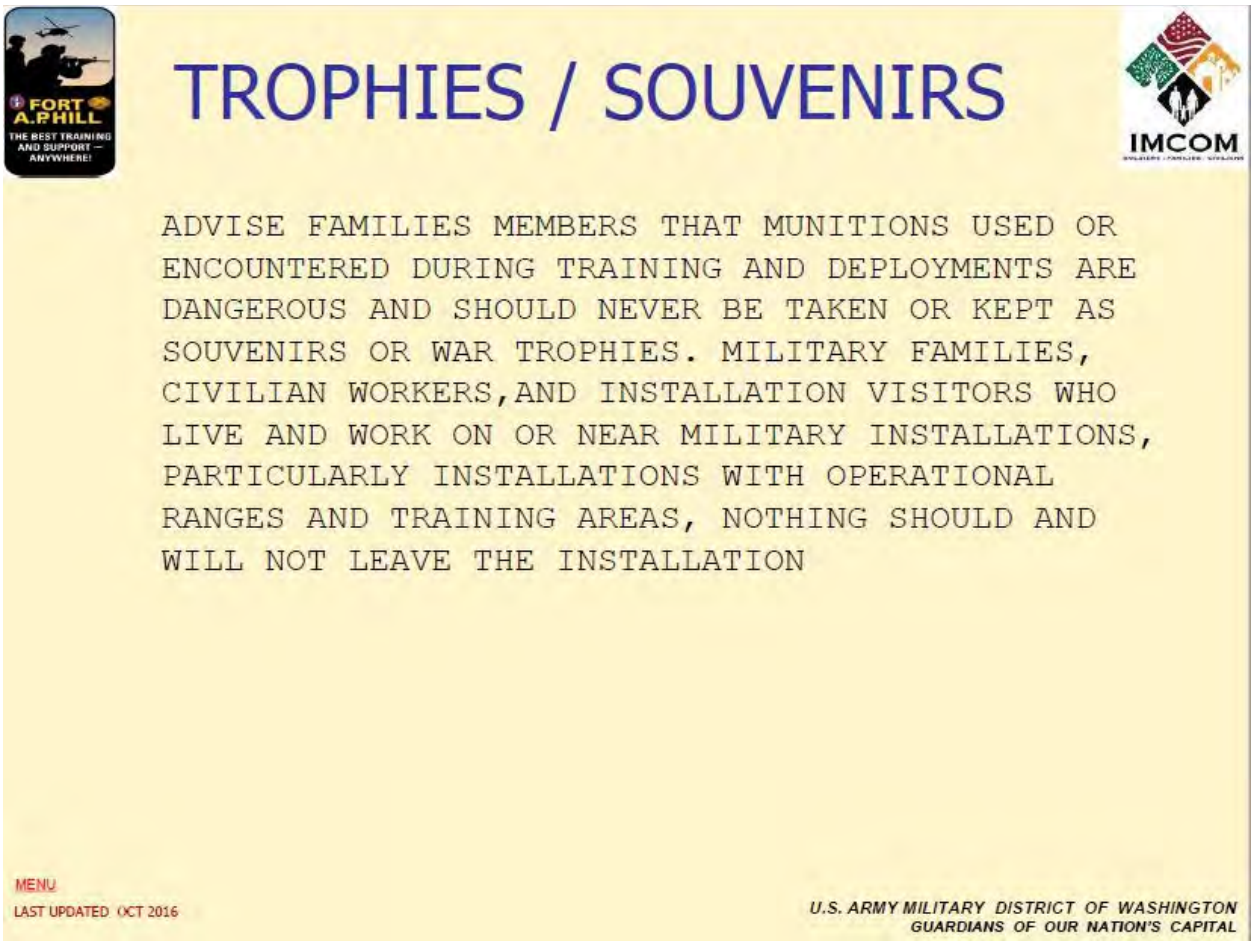
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TROPHIES / SOUVENIRS
IMCOM
ADVISE FAMILIES MEMBERS THAT MUNITIONS USED OR ENCOUNTERED DURING TRAINING AND DEPLOYMENTS ARE DANGEROUS AND SHOULD NEVER BE TAKEN OR KEPT AS SOUVENIRS OR WAR TROPHIES. MILITARY FAMILIES, CIVILIAN WORKERS,AND INSTALLATION VISITORS WHO LIVE AND WORK ON OR NEAR MILITARY INSTALLATIONS, PARTICULARLY INSTALLATIONS WITH OPERATIONAL RANGES AND TRAINING AREAS, NOTHING SHOULD AND WILL NOT LEAVE THE INSTALLATION
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Garrison Safety Office Contact Information:

Units are required to report & submit their Abbreviated Ground Accident Reports (AGAR) (DA Form 285) directly to the Garrison Safety Office.

Lynda T. Rice
Garrison Safety Manager
Bldg 138 2nd Street, Fort A.P. Hill
Bowling Green, Virginia 22427
☎ COM 804-633-8269
BB 540-621-9281
DSN: 578-8269
EMAIL: lynda.t.rice.civ@mail.mil

Phillip Bowling
Garrison Safety
BLDG 138 2nd Street, Fort A.P.Hill
Bowling Green Virginia 22427
Phone 804-633-8268
Email Phillip.r.bowling.civ@mail.mil

Accident Reporting References & Guidelines- Garrison Safety Office

APH REG. 385-10 19 April 2007

5-6. Accident Reporting and Investigation.

(4) For military personnel training at the installation, complete accident report forms for Class C and lower accidents before departing the installation and for Class A & B, provide the ISO with a copy of the completed report within 7 working days of its release.

8-4 Employee/service member's responsibilities.

g. Report all accidents involving ammunition and explosives to their supervisor and the Installation Safety Office IAW AR 385-40 and malfunctions IAW AR 75-1.

FAPH 350-1 Training Regulation

3-35. Installation Clearance
e. Safety Clearance. Clearance may be obtained from the Safety Office provided that all DA Forms 285 have been completed and turned in with all pertinent information needed for the report. If no accidents or injuries occurred during the unit's stay this can be annotated on the clearance form at DPTMS without the unit visiting the Safety Office to clear.

AR 385-10, 27 November 2013

3-8. Initial notification and reporting of Army accidents
*Commanders and/or supervisors will investigate and report according to paragraph 3-8*b*, below, to the unit or local safety office any unplanned events.

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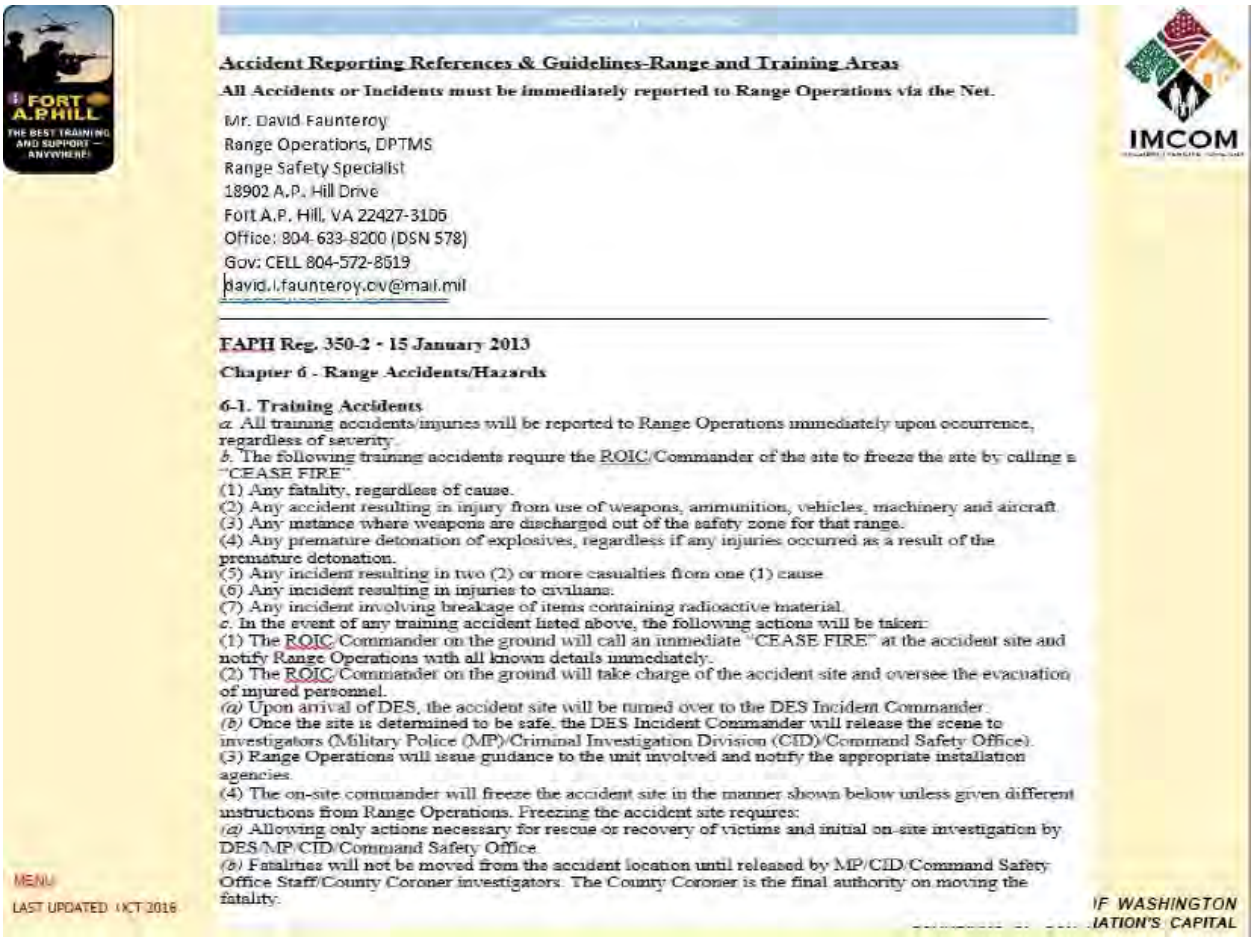

Accident Reporting References & Guidelines-Range and Training Areas

All Accidents or Incidents must be immediately reported to Range Operations via the Net.

Mr. David Faunteroy
Range Operations, DPTMS
Range Safety Specialist
18902 A.P. Hill Drive
Fort A.P. Hill, VA 22427-3105
Office: 804-633-8200 (DSN 578)
Gov: CELL 804-572-8519
david.l.faunteroy.civ@mail.mil

FAPH Reg. 350-2 - 15 January 2013

Chapter 6 - Range Accidents/Hazards

6-1. Training Accidents

a. All training accidents/injuries will be reported to Range Operations immediately upon occurrence, regardless of severity.

b. The following training accidents require the ROIC/Commander of the site to freeze the site by calling a "CEASE FIRE".

(1) Any fatality, regardless of cause.
(2) Any accident resulting in injury from use of weapons, ammunition, vehicles, machinery and aircraft.
(3) Any instance where weapons are discharged out of the safety zone for that range.
(4) Any premature detonation of explosives, regardless if any injuries occurred as a result of the premature detonation.
(5) Any incident resulting in two (2) or more casualties from one (1) cause.
(6) Any incident resulting in injuries to civilians.
(7) Any incident involving breakage of items containing radioactive material.

c. In the event of any training accident listed above, the following actions will be taken:

(1) The ROIC/Commander on the ground will call an immediate "CEASE FIRE" at the accident site and notify Range Operations with all known details immediately.
(2) The ROIC/Commander on the ground will take charge of the accident site and oversee the evacuation of injured personnel.
(a) Upon arrival of DES, the accident site will be turned over to the DES Incident Commander.
(b) Once the site is determined to be safe, the DES Incident Commander will release the scene to investigators (Military Police (MP)/Criminal Investigation Division (CID)/Command Safety Office).
(3) Range Operations will issue guidance to the unit involved and notify the appropriate installation agencies.
(4) The on-site commander will freeze the accident site in the manner shown below unless given different instructions from Range Operations. Freezing the accident site requires:
(a) Allowing only actions necessary for rescue or recovery of victims and initial on-site investigation by DES/MP/CID/Command Safety Office.
(b) Fatalities will not be moved from the accident location until released by MP/CID/Command Safety Office Staff/County Coroner investigators. The County Coroner is the final authority on moving the fatality.

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